AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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NAAC "B++" Accredited Institute

Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512

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2.5.1 Mechanism of Internal/External assessment is transparent and the grievance redressal system is time-bound and efficient.

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		3.1 External Examiners given by JNTUH	74-75
4	**External Grievances**		76-138
5	**Internal Grievances**		139-145
6	**Complaints**		146-162

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Mechanism for Internal Examination Grievance Redressal: The college has a well organized mechanism for Redressal of examination related grievances. The students can approach the faculty members, the concerned HOD and the Principal to redress the examination related grievances. The institution follows the University policy regarding the conduct of Examinations. The entire mechanism to deal with examination related grievances is time bound as per the University rules and regulations.

Procedure of Internal Examination:

- At the beginning of the semester, faculty members will inform the students about the various components in the assessment process during the semester as per the time-tables issued by JNTUH kukatpally.
- Time tables of both Examinations will be circulated to all HODS and Faculty members.
- The same time tables will be circulated to all the students and also displayed on the College, Notice Board.
- The internal assessment test schedules are prepared as per the university norms and communicated to the students well in advance.
- To ensure proper conduct of formative tests, two invigilators are assigned to each hall.
- Evaluation is done by the course handling faculty members and is informed to submit the evaluated answer scripts within three days from the date of conduct of examination.
- The corrected answer scripts are distributed to the students for their verification and in case of any grievances, steps are also taken to resolve it immediately.
- The marks obtained by the students in internal assessment tests are displayed on the department notice board.
- After that the marks are uploaded periodically on the university web portal along with their attendance.
- Day to day performance of the students is assessed for every experiment which includes regularity, viva and the promptness in submitting the record. For the quality of the projects, the evaluation is done by Project Review Committee along with project guides.

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Redressal of Grievances related to Internal Examination (College level):

- After the Mid Exam evaluation, the descriptive answer scripts will be distributed to the students for verification.
- In case of any corrections, the student will take it to the notice of the concerned faculty.
- The concerned faculty will re-evaluate the answer script based on the scheme of evaluation and if no difference in marks is identified, the same will be communicated to the student by explaining the scheme of evaluation. If any difference in marks is noticed, the faculty will modify the marks.
- More than 90% of the issues will be resolved at the faculty level.
- In case the problem is not resolved by the faculty/or if the student is not satisfied, the same would be taken to the notice of concerned HOD.
- The HOD would handle such grievances by assigning the related sheets (question paper, scheme of evaluation, answer script) to the another subject expert for immediate revaluation.
- After revaluation if there is no change in the marks, the same would be communicated to the student(s).
- In case of any difference in marks, the concerned HOD will inform to the subject faculty to update the marks.
- The Mid marks are allotted based on defined strategies and displayed on notice board.

Mechanism for External Examination Grievance Redressal:

The college has a well organized mechanism for Redressal of examination related grievances. All the discrepancies regarding examination, faced by the college is immediately brought to the notice of the Controller of Examination of the University and corrections if any are done only after getting instructions from the University. It is very transparent and time bound.

Procedure of External Examination:

- The End Examination for the laboratory and projects shall be conducted with External examiner appointed from the other colleges as decided by the University.
- The Examination Cell will prepare the invigilation chart for Faculty and seating plan arrangement for the students with internal jumbling mechanism based on the time tables.
- Invigilators shall make announcement in the Examination hall about the rules regarding the conduct of Examinations including the prohibition of electronic devices by the students in the Examination hall.
- The invigilators are expected to be tactful while dealing with complex situations and not to disturb the tranquility in the exam hall.
- In case any problem is identified, he/she may bring the matter to the notice of the ChiefSupertendent and depending on the seriousness of the issue, the same can/could be taken to Controller of the Examinations (CoE).

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- Generally, scheduled forenoon session Examinations starts at 10.00 AM and afternoon session Examinations starts at 2.00 PM.
- Invigilators were informed to arrive at the respective examination halls at least 30 minutes before the commencement of the Examination.
- All invigilators appointed in a hall are informed to report back in the Examination Cell after the completion of examination and are solely responsible for the submission of the answer booklets to the concerned Examination Cell authorities.
- Invigilators were informed to report immediately to the Chief Supertendent if any unusual incidents identified/traced during the examinations.

Redressal of grievances related to External Examinations (University level):

The queries related to results, corrections in mark sheets issued by the University are handled at JNTU-H Examination Cell after forwarding such queries through the college Examination Cell. If the students are not satisfied with the marks evaluated by the University, the students are allowed to apply for Revaluation, Recounting and Challenged Evaluation by paying the necessary processing fee to the University. For students whose marks are not entered or incorrectly entered, the college sends a photocopy of the mark list with an application to rectify the error at the University level. Thus the college is prompt and takes utmost care in handling any Grievances of the student(s).

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Cir./Exam Section/0001   Date: 23-08-2023

Attention all the IV B.TECH I SEM students are here by informing you that MID-I examinations will be conducted from 28-08-2023 to 02-09-2023.

Time: FN: 09.40 AM TO 11.00 AM

AN: 01.40 PM TO 03.00 PM

OIE

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Copy to: 1. ALL HOD's (EEE, MECH, ECE, CSE)

2. Administrative Office

3. Notice Boards

Cir./Exam Section/0002   Date: 07-12-2023

Attention all the III, B.TECH I SEM students are here by informing you that MID-I examinations will be conducted from 13-12-2023 to 19-12-2023.

Time: FN: 09.40 AM TO 11.00 AM

AN: 01.40 PM TO 03.00 PM

OIE

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Cir./Exam Section/0003   Date: 22-11-2023

Attention all the II B.TECH I SEM students are here by informing you that MID-I examinations will be conducted from 28-11-2023 to 02-12-2023.

Time: FN: 09.40 AM TO 11.00 AM

   AN: 01.40 PM TO 03.00 PM

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Cir./Exam Section/0004   Date: 02-11-2023

Attention all the I B.TECH I SEM students are here by informing you that MID-I examinations will be conducted from 06-11-2023 to 10-11-2023.

Time: FN: 09.40 AM TO 11.00 AM

AN: 01.40 PM TO 03.00 PM

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Copy to: 1. HOD – H&S

2. Administrative Office

3. Notice Boards

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DEPARTMENT OF MECHANICAL ENGINEERING 2023-24

YEAR/SEM: IV/I

I MID SEATING PLAN

EXAM TIME: 09:40AM TO 11.00AM   EXAM DATES FROM:20-05-24 TO 23-05-24

S.NO	ROOM NO	YEAR/ SEM	FROM	TO	NO. OF STUDENTS	TOTAL
1	B-303	IV/II	20Q61A0301	21Q65A0310	16	16
2	B-304	IV/II	21Q65A0311	21Q65A0326	15	15

HOD

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DEPARTMENT OF MECHANICAL ENGINEERING

III B.TECH II Semester II-MID Examination(R 18, MAY-2024)

Name of the Subject: HEAT TRANSFER **Subject code: ME602PC**

Time: 1 Hour Branch: Mechanical Max. Marks: 10

Date of Exam: 06/08/2024

SET-I

Answer 2 Questions and each carry equal marks **2x5=10M**

S. No	Question	Bloom's Taxonomy level	Course Outcome	Marks
1	A) A counter flow heat exchanger of area A=12.5 m2 is to cool oil having a specific heat Cp= 2000 J/kg. ^{0}C with water of Cp= 4170 J/kg K. The oil enters at 100^0C at a mass flow of 2 kg/s, while the water enters at 20^0C at 0.48 kg/s. The overall heat transfer coefficient of the heat exchanger is 400 W/m^2 ^{0}C. Calculate the exit temperature of water and the total heat transfer rate, Q.	Apply	C03	4
	B) Classify heat exchangers.			1
OR				
2	A plate of length 750 mm and width 250 mm has been placed longitudinally in a stream of crude oil which flows with a velocity of 5 m/s. If the oil has a specific gravity of 0.8 and kinematic viscosity of 1 stoke, calculate i) Boundary layer thickness at the middle of the plate. ii) Shear stress at the middle of plate and iii) Friction drag on one side of the plate.	Apply	C04	5
3	A) Explain briefly the various regimes of saturated pool boiling by drawing the diagram.	Understand	C05	3
	B) What is a black body? How does it differ from a gray body? Discuss in detail.			2
OR				
4	A) Engine oil at 400C flows with a velocity of 1 m/s over a 2 m long plate plate whose surface is maintained at uniform temperature of 800C. Determine the local and average heat transfer coefficients.	Remember	C05	3
	B) Write the differences between free convection and forced convection.			2

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IV B.TECH II Semester II-MID Examination(R 18, MAY-2024)

Scheme of Evaluation

Name of the Subject: Industrial Robotics   Subject code:ME811PE

Time: 1 Hour   Branch: Mechanical   Max. Marks: 10

1. A) Given Data-1m.
      LMTD figure-1m Differences between black and grey body-2m
      Solution-2m
   B) Classification of heat exchanges-1m

2. A) Given Data-1m.
      Figure-1m
      Solution-3m

3. A) Different regimes explanation-1 m
         Figure-1m
         Explanation of regimes-1m
   B) Definition of black body-1m
      Differences between black and grey body-1m

4. A) Given Data-1m.
       Solution-2m
   B) Any 4 differences-2m

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INTERNAL DISCRIPTIVE EXAM

NAME : V. JaiShankar

ROLL No : 22 Q65 A0205

CLASS : B.Tech III year   SEM

SIGNATURE OF THE STUDENT : V. JaiShankar.

DATE : 06-08-24

Subject : Heat Transfer

SIGNATURE OF THE INVIGILATOR'S :

TOTAL MARKS

---

(1)(A) Solution :-

Given,

A counter flow heat exchanger of area

$$(A) = 12.5 \, m^2.$$

Specific heat $(c_p) = 2000 \, J/kg \cdot \degree C$

water specific heat $(c_{pw}) = 4170 \, J/kg \cdot \degree C$.

Oil enter at temperature $(T_1) = 100 \degree C$.

Mass flow rate of oil $(m) = 2 \, kg/s$.

water enter at temp $(t_1) = 20 \degree C$.

Mass flow rate of water $= 0.48 \, kg/s$.

From the data book :

$$\mathcal{E} = \frac{m_h c_h}{c_{min}} \left[\frac{T_1 - T_2}{T_1 - t_1} \right].$$

where heat transfer rate (Q) for oil

$$Q = m_h c_{ph} (\Delta T)$$

$$= 2 \times 2000 \pi r^3 (100 - 20)$$

$$Q = 320 \quad watts$$

Heat transfer rate (Q) for water

$$Q_h = m_c c_{pc} (\Delta T)$$

$$= 0.48 \times 4170 \times 10^{-3}(100-20)$$

$$Q_{c\phi} = 160.128$$

From the absolute the smaller of $m_h c_h$ and $m_c c_c$ ie $Q_s = 160.128$.

$$C_{min} = 160.128$$

from the data book

$$Q = \varepsilon \, C_{min} (T_1 - t_1).$$

$$\varepsilon = C_{min} (T_1 - t_1) \times Q.$$

$\left\{ \begin{array}{l} \because Q = \dfrac{Q_h + Q_s}{2} \\[4pt] = \dfrac{320 \times 10^{3} \times 168.14}{2} \\[4pt] Q = 2.56 \times 10^{16} \\[4pt] Q = 168.06. \end{array} \right.$

$$= 160.128 (100-20) \times 2.56 \times 10^{16} \times 168.06.$$

$$\varepsilon = 3.27 \times 10^{7}$$

$$\varepsilon = 215288.934$$

from the data book,

$$\varepsilon = \frac{m_c c_c}{C_{min}} \left[\frac{t_2 - t_1}{T_1 - t_1} \right]$$

$$t_2 = \frac{m_c c_c}{C_{min} \times \varepsilon} \left[\frac{4 - t_1}{T_1 - t_1} \right]$$

$$t_2 - 20 = \frac{0.48 \times 4170 \times}{160128 \times \frac{2.56 \times 10^{7}}{215288.94}} \left[\frac{1}{100 - 20} \right]$$

$$t_2 - 20 = 0.15625$$

$$t_2 = 0.15625 + 20$$

$$t_2 = 20.17$$

$$\boxed{t_2 = 20^\circ}$$

Exit temperature of water $(t_2) = 20^\circ C$.
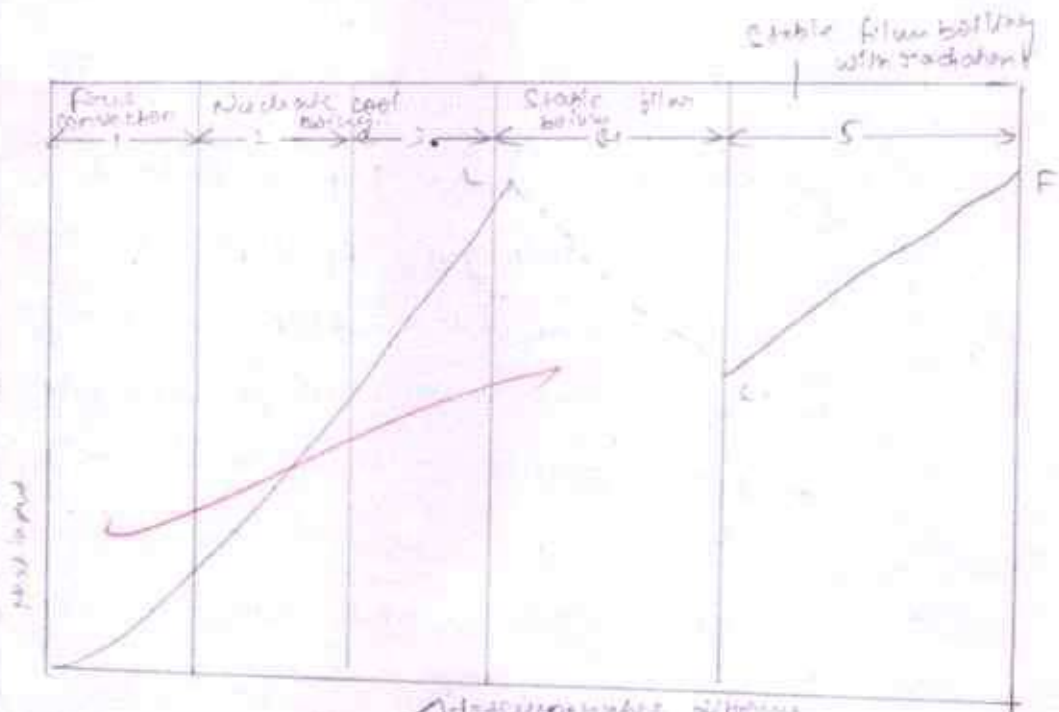
(13) H. Classifications of Heat Exchangers:-

Heat exchangers are classified into feathers type

they are

① Parallel flow

② Counter flow

③ Multi pass flow

④ Cross flow

(3A) Various of Regimes of saturated pool boiling:-

There are there Regime's of a saturated pool boiling: They are

① Free Convection

② Nucleate pool boiling

③ Film formation.

① **Free Convection:** Consider a metal dipped in the pool while boiling the liquid starts boiling when the saturation temperature is reached. If the temperature exceeds the saturation temperature then the process is called free convection.

② **Nuclear pool boiling:** $\frac{Q}{A} = q' = (\Delta T) h$

The liquid in the pool starts forming vapour bubbles that are in smaller size where these bubbles condense below the surface of the liquid.

As the temperature rises the formation of water vapour bubbles is more bigger than the previous. So, these vapour bubbles rise above the surface of liquid and form as a barrier to the not to allow the heat transfer. There will be a film formed on the liquid surface which act as a barrier.

③ ↳ The formation of vapour bubbles on the liquid surface area is called as a "Nuclear pool boiling".

③ **Film Formation:-** The formed

bubbles create a barrier on the liquid surface which do not allow the heat transfer. The vapour bubbles forms like a layer on the liquid surface which is called film formation.

The temperature above the saturation temperature ie of more than 550°c then it is called as radiation.

(B) Black Body :- Black body is defined as the body which absorbs heat more than any other coloured body then it is known as Black body. Black body is different from grey body as the black body absorbs more heat than the grey body. Because of the black colour the absorption heat is more than that of the grey body.

The Black body absorbs more heat first than grey body and also gets cooled first than that of the grey body.

Based on the colour the absorption of heat by a body differs.

AVANTHIINSTITUTE OF ENGINEERING&TECHNOLOGY

III B.Tech II Sem., II Mid-Term Examinations, AUG-2024

HEAT TRANSFER

III B.Tech. II Sem., II Mid-Term Examinations

Student Name: V. Jai Shankar   Hall Ticket No | 2 | 2 | Q | 6 | 5 | A | 0 | 3 | 0 | 5 |

CHOOSE THE CORRECT ANSWER   10X1=10

1. Which of the following is not associated with a heat exchanger?   (a)
a) Fouling   b) NTU   c) Capacity ratio   d) Mc Adam's correction factor
2. The energy transfer between the hot fluid and cold fluids is brought about by their complete physical mixing in (a)
a) Direct contact heat exchanger   b) Regenerators   c) Recuperators   d) Boilers
3. Which type of flow arrangement is this?   (b)
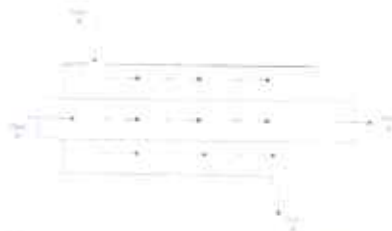
a) Counter flow   b) Parallel flow   c) Regenerator   d) Shell and tube
4. Boiling refers to a change from the   (d)

a) Solid to a liquid phase b) Vapor to a liquid phase c) Liquid to a solid phase d) Liquid to a vapor phase
5. Which type of boiling occurs in steam boilers employing natural convection?   (d)

a) Forced convection   b) Pool   c) Local   d) Saturated
6. The Stefan Boltzman law states that   (d)

(a) $E \alpha T$ (b) $E \alpha T^2$ (c) $E \alpha T^3$ (d) $E \alpha T^4$

7. Which method is used when only entry temperatures of fluids known in a heat exchanger?   (a)
(a) NTU   (b) LMTD   (c) AMTD   (d) none of these

8. What is the relation between reflectivity (ρ), absorptivity (α) and transmissivity (τ)?   (c)
a) $\rho - \alpha + \tau = 1$ b) $\rho - \alpha - \tau = 1$ c) $\rho + \alpha + \tau = 1$ d) $\rho - \alpha - \tau = 1$
9. The emissivity (ϵ) can be defined as the ratio of   (b)
a) emissive power of real body to the emissive power of black body
b) emissive power of black body to the emissive power of real body
c) reflectivity of real body to emissive power of black body
d) reflectivity of black body to emissive power of real body
10. The radiation energy from the sun is produced by   (b)
a) Fission reaction   b) fusion reaction   c) both a. and b   d) none of the above

FILL IN THE BLANKS   10X1= 10
1. Nussult number in forced convection depends on _Reynold_ number
2. Critical radius of insulation for a cylinder is _____
3. The value of Stefan Boltzmann constant used in radiation _5.67×10⁻⁸ w/m² k⁴_
4. Units of heat transfer coefficient _w/m² c_
5. Emissivity of the black body is _1_
6. Heat transfer in parallel is _low_ than heat transfer in counter flow heat exchanger
7. Thermal conductivity is _directly_ proportional to the temperature of body
8. What are the modes of heat transfer _parallel, counter, multipass flow_
9. The range of thermal conductivity for insulator is less than _2 A_
10. Lumped heat capacity analysis is applied when Biot Number is less than _hL/ks_

F. Derive the moment of Inertia of Rectangle, triangle and Circle with Respect to Reference and centroidal axis.

Ans:-

1. MOMENT OF INERTIA OF A RECTANGLE :-

Consider a Rectangle of length (b), width (d) is represented along two dimensional axis as shown in below fig. Let assume a small Rectangular element inside the Rectangle which is at a distance of y from x-axis and width dy as shown in fig.

figure

Area of small Rectangular element.

$$dA = b(dy)$$
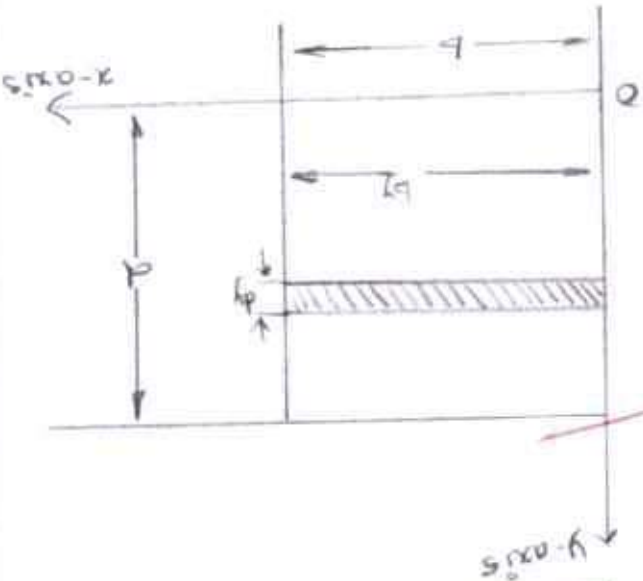
w.r.t x-axis :-

$$I_x = \int y^2 b\, dy$$

$$= b \int_0^d \left[\frac{y^3}{3}\right]$$

$$\boxed{I_x = \frac{bd^3}{3}}$$

w.r.t y-axis :-

Area of small element, $dA = d(dx)$

$$I_y = \int x^2 dA$$

$$I_y = \int_b^0 x^2 dx$$

$$I_y = d \left[\frac{x^3}{3} \right]_0^b$$

$$\boxed{I_y = \frac{db^3}{3}}$$
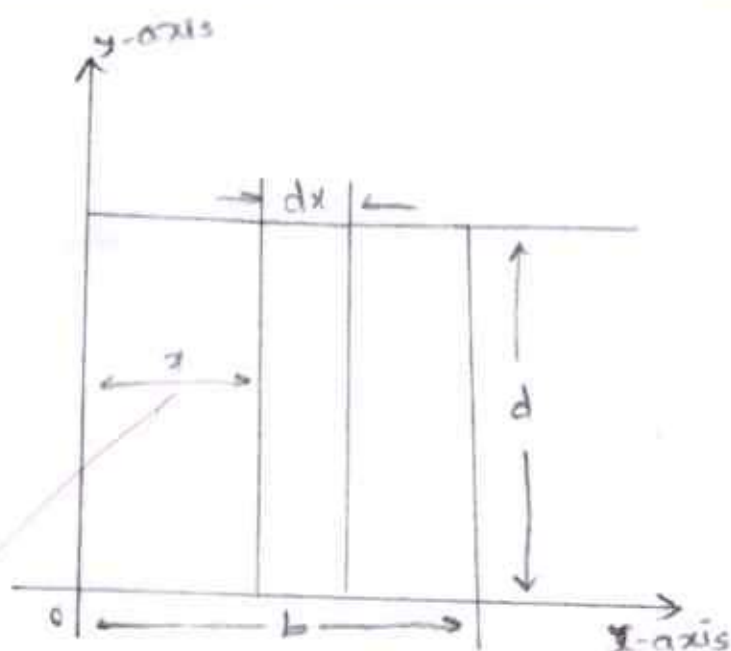
Figure

By Parallel axis Theorem :-

with Respect to x-axis

$$I_x = I_{x\bar{x}} + A y_c^2$$

$$\Rightarrow \frac{bd^3}{3} = I_{x\bar{x}} + bd\left(\frac{d}{2}\right)^2$$

$$\Rightarrow I_{x\bar{x}} = \frac{bd^3}{3} - \frac{bd^3}{4}$$

$$\boxed{I_{x\bar{x}} = \frac{bd^3}{12}}$$

Similarly w.r. to y-axis :-

$$\boxed{I_{y\bar{y}} = \frac{db^3}{12}}$$

2. **Moment of a Triangle :-**

Consider a triangle of base 'b' and height 'h' represented along horizontal x-axis and vertical y-axis to determine moment of inertia of a triange. Let assumed a small Rectangular element of length 'b' and width 'dy' which is at a perpendicular distance of x.y w.r.t y and x-axis as shown in fig

Area of Resting Triangle element, dA = b₁·dy

↓y-axis

We know that $I_x = \int y^2 dA$

$$= \int_h^0 y^2 \cdot b_1 \cdot dy$$

Assume two Area are similar by
Properties of Similar Triangles

$$\Rightarrow \frac{b_1}{b} = \frac{h-y}{h}$$

$$\underline{b_1 = \frac{b}{h}(h-y)}$$

$$\therefore \ I_x = \int_h^0 y^2 \frac{b}{h}(h-y)\,dy$$

$$I_x = b \int \left[\frac{y^3 h}{3} - \frac{y^4}{h} \right]_h^0$$

$$I_x = b \left[\frac{h^3}{3} - \frac{h^4}{4h} \right]$$

By Properties of Area b×h (h-y)
b×h

$$I_x = b \left[\frac{h^3}{3} - \frac{3h^4}{12} \right]$$

$$\boxed{I_x = \frac{bh^3}{12}} \quad , \text{ Similarly }, \quad \boxed{I_y = \frac{hb^3}{12}}$$

Figure

PRINCIPAL
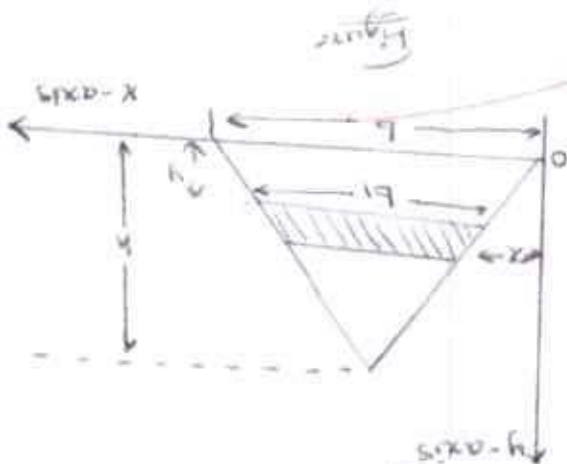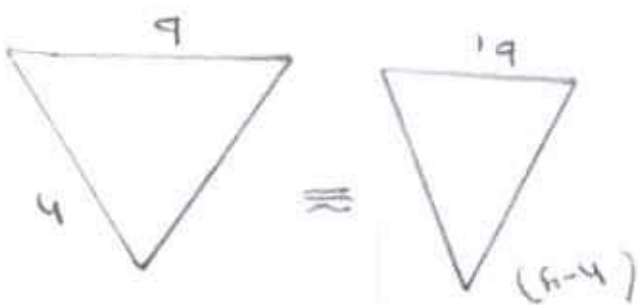
3. Moment of Inertia of a Semi-circle :

(i)

Consider a Semi-circle of a radius (r) Represented in a co-ordinate System as shown in below figure.

I Semicircle $= \frac{1}{2} \times I$ circle

I semi circle $= \dfrac{\pi D^4/64}{2}$

I semi circle $= \dfrac{\pi D^4}{128}$

$$\boxed{J_x = \frac{\pi D^4}{128} \ (\text{or}) \ \frac{\pi R^4}{8}}$$

By Parallel axis Theorem :-

$\Rightarrow I_x = J_{x\bar{x}} + A y_c^2$

$\therefore I_x = \dfrac{\pi R^4}{8}$ [M.J of Semi circle]

$\Rightarrow \dfrac{\pi r^4}{8} = J_{x\bar{x}} + \dfrac{\pi r^2}{2} \left[\dfrac{4r}{3\pi} \right]^2$

$\Rightarrow J_{x\bar{x}} = \dfrac{\pi r^4}{8} - \dfrac{\pi r^2}{2} \left(\dfrac{16 r^2}{9\pi^2} \right)$

$\Rightarrow J_{x\bar{x}} = r^4 \left[\dfrac{\pi}{8} - \dfrac{8}{9\pi} \right]$

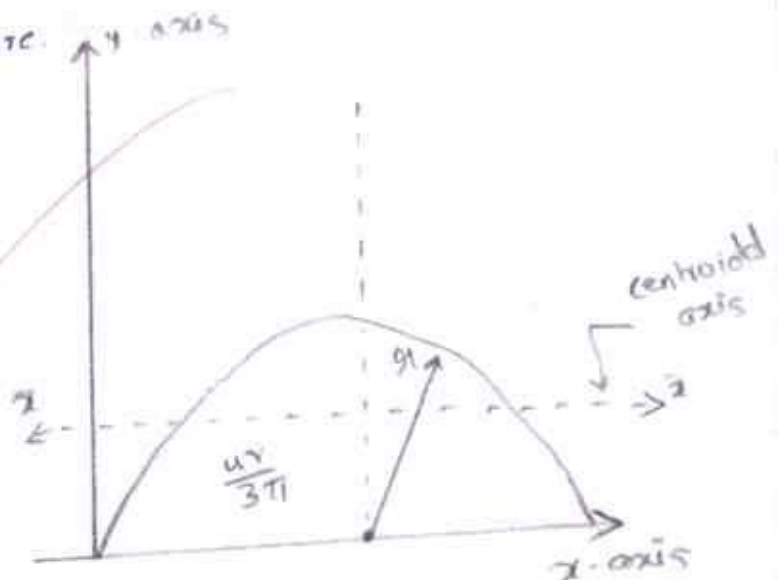$\Rightarrow \boxed{J_{x\bar{x}} = 0.11 \, r^4}$

(ii) Moment of a Quarter circle :-

Consider a Quarter circle of radius (r) represented in a co-ordinate system as shown in below figure
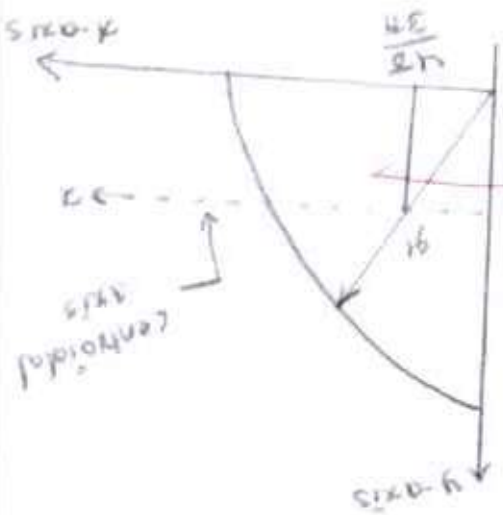
I Quarter circle $= \frac{1}{2} \times I$ circle

I (semi-circle) $= \frac{1}{2} \times I$(circle)

I Quarter circle $= \frac{1}{2} \times \frac{1}{4} \times \frac{\pi r^4}{4}$

$$\boxed{I \text{ Quarter circle} = \frac{\pi r^4}{16} \quad (\text{or}) \quad \frac{\pi d^4}{256}}$$

By Parallel-axis Theorem :-

$$I_x = I_{xx} + Ah^2$$

$$\therefore I_x = \frac{\pi r^4}{16}$$

$$\frac{\pi r^4}{16} = I_{xx} + \frac{\pi r^2}{4}\left(\frac{4r}{3\pi}\right)^2$$

$$I_{xx} = \frac{\pi r^4}{16} - \frac{\pi r^2}{4}\left\{\frac{r^2 \cdot 16}{9\pi^2}\right\}$$

$$I_{xx} = r^4\left[\frac{\pi}{16} - \frac{4}{9\pi}\right]$$

$$\boxed{I_{xx} = 0.055\, r^4}$$

2. State and Prove that parallel axis theorem :-

Soln: **Statement :-** The moment of Inertia about any reference axis is equal to the algebraic Sum of the moment of Inertia about it's centroidal axis and product of Area of the body and distance between the body and the Reference axis.

Proof :-

Figure :-

w.r.to x-axis :-

$$I_x = \int y_1^2 \, dA$$

$$I_x = \int (y + yc)^2 \, dA$$
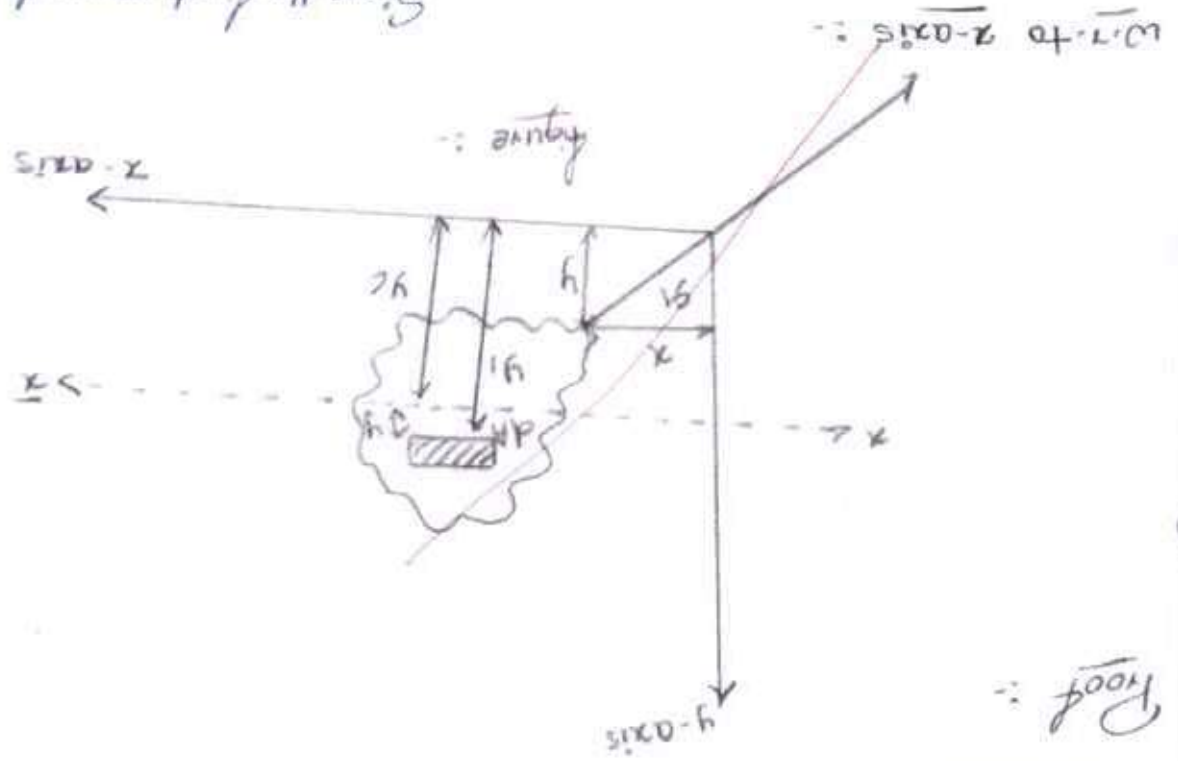
$$I_x = \overline{I_{xx}} + \int y^2 dA + 2\int \bar{y} \cdot yc \, dA$$

Since the first moment of inertia about it's about (centroidal axis is zero so $\int y \cdot dA$ is Zero.

$$\boxed{I_x = \overline{I_{xx}} + Ayc^2}$$

Similarly w.r.to y-axis :- Principal

$$\boxed{I_y = \overline{I_{yy}} + Axc^2}$$

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III-II LAB INTERNAL EXAMINATIONS - 2024

Sub: **Materaial Science & Mechanics Of Solids Lab**   Branch: **Mechanical**

Date: **31/07/2024**   Session: **FN/AN**

1. Drafting: Development of part drawings for various components in the form of orthographic and isometric. Representation of dimensioning and tolerances.
2. Part Modeling: Generation of various 3D Models through Protrusion, revolve, sweep. Creation of various features. Study of parent child relation. Feature based and Boolean based modeling and Assembly Modeling. Study of various standard Translators. Design of simple components.
3. Determination of deflection and stresses in 2D and 3D trusses and beams.
4. Determination of deflections, principal and Von-mises stresses in plane stress, plane strain and Axi-symmetric components.
5. Determination of stresses in 3D and shell structures (at least one example in each case).
6. Estimation of natural frequencies and mode shapes, Harmonic response of 2D beam.
7. Study state heat transfer analysis of plane and axi-symmetric components.
8. Development of process sheets for various components based on Tooling and Machines.
9. Development of manufacturing defects and tool management systems.
10. Study of various post processors used in NC Machines.
11. Development of NC code for free form and sculptured surfaces using CAM software.
12. Machining of simple components on NC lathe and Mill by transferring NC Code / from CAM software.

Signature of the Internal Examiner   Signature of the HOD

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III B. Tech II Semester Lab Internal Examinations –18

Scheme of Evaluation

S.NO	EVALUTION PROCESS	MARKS
1	Internal Lab Exam	10M
2	Day Today Work	5M
3	Record	5M
4	Viva	5M

Signature of the Faculty

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INTERNAL DISCRIPTIVE EXAM

NBA
NATIONAL BOARD of ACCREDITATION

DATE: 31/07/24

NAME : Farhan Abdul Rahman

ROLL No.: 22Q65A0302

Subject: CAD/CAM Lab Internal

CLASS : B.tech Mech III year SEM II

SIGNATURE OF THE INVIGILATOR'S:

SIGNATURE OF THE STUDENT

TOTAL MARKS : 24

=> Step Turning and Tapering

(TOOL / STANDARD, 40, 40, 0, 10, 3)

    (COLOR, 255, 255, 255)

   (STOCK/100, 25, 0, 0)

M03 S1500

G00 X28

G00 Z5

G01 X25.5 F80

G01 Z-110 F80

G01 X28 F60

G00 Z2 F50

G01 X24.5 F80
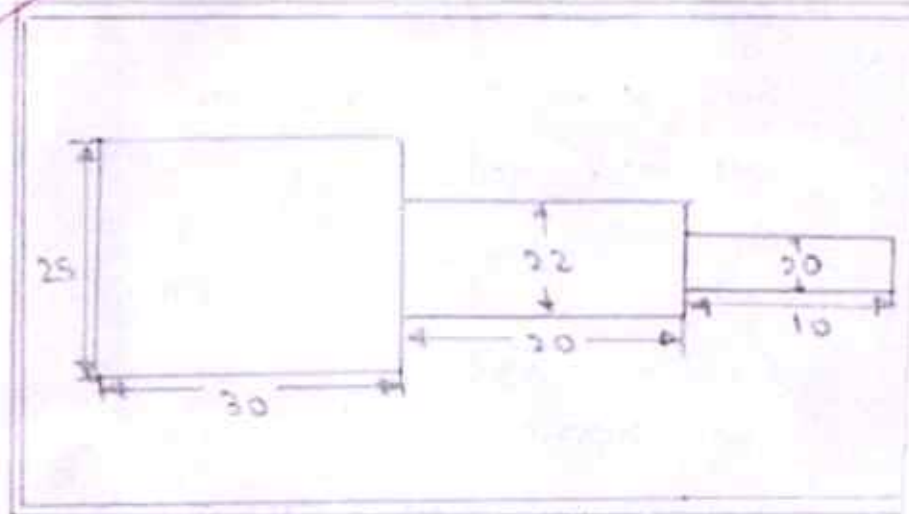
G01   x22   f80

G01   z-29.5   f80

G03   x22   z-30   R0.5   f50

G01   x28   f80

G00   z2   f100

G01   x21.5   f80

G01   z-29   f80

G03   x22   z-30   R1   f50

G01   x28   f80

G00   z2   f100

G01   x21   f80

G01   z-28.5   f80

G03   x22   z-30   R1.5   f50

G01   x28   f80

G00   z2   f100

G01   x20.5   f80

G01   z-28   f80

G03   x22   z-30   R2   f50

G01   x28   f80

G00   z2   f100

G01 x17 f80

G01 z-18 f80

G01 x20 z-21 f50

G01 x28 f80

G00 z2 f100

G01 x16.5 f80

G01 z-17.5 f80

G01 x20 z-21 f50

G01 x28 f80

G00 z2 f100

G01 x16 f80

G01 z-17 f80

G01 x20 z-21 f50

G01 x28 f80

G00 z2 f100

G01 x15.5 f80

G01 z-16.5 f80

G01 x20 z-21 f50

G01 x28 f80

G00 z2 f100

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Ph: 8328953368, 9963777979, 9666664631, 9704735516

LABORATORY RECORD

Name : V. Jaishankar

Year : 1st year B.Tech.   Semester : 1st sem

Roll No. : 2206SA0305   Course : MECH

Name of the Lab : _____

COMMITTED TO EXCELLENCE IN TECHNICAL & EDUCATION

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Certificate

Department of MECHANICAL ENGINEERING

Certified that this is a bonafide record of practical work done by

Mr /Ms. V. Jai Shankar of B. Tech III rd Year

II nd Semester with Hall ticket Number 22 965 A5305 during the year 2023 - 24

in the Heat Transfer laboratory. Number of experiments done 15

Date of submission

Head of the Department

Signature of the HOD

Signature of the Lab in Charge

Examiner

INDEX

INDEX

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CONSOLIDATED INTERNAL MARKS SHEET

IV B. TECH I SEM (ACADEMIC YEAR 2023-24) INTERNAL MARKS STATEMENT

Branch/Year: MECH/IV-II   Subject: Industrial Robotics

Subject code:ME811PE   Faculty: A. Shankar

S. NO	HT NO	MID-I				MID-II				AVERAGE
		DES-I	OBJ-1	AS-1	SUM-1	DES-2	OBJ-2	AS-2	SUM-2	
1	21Q61A0301	9	5	4	18	9	6	5	20	19
2	21Q61A0302	8	4	5	17	10	5	5	20	19
3	21Q61A0303	8	6	5	19	9	7	5	21	20
4	21Q61A0304	AB								AB
5	21Q61A0305	AB								AB
6	21Q65A0301									
7	21Q65A0302	9	7	5	21	10	8	5	23	22
8	21Q65A0303	9	8	5	22	10	9	5	24	23
9	21Q65A0304	9	8	5	22	9	9	5	23	23
10	21Q65A0305									
11	21Q65A0306	AB								AB
12	21Q65A0307	9	6	5	20	8	5	5	18	19
13	21Q65A0308	9	5	5	19	10	7	5	22	21
14	21Q65A0309	7	6	5	18	9	6	5	20	19
15	21Q65A0310									
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17	21Q65A0312	7	7	5	19	10	6	5	21	20
18	21Q65A0313	AB								AB
19	21Q65A0314	9	4	5	18	10	8	5	22	20
20	21Q65A0315	7	4	5	16	10	7	5	22	19
21	21Q65A0316									
22	21Q65A0317	AB		5	5	7	6	5	18	12
23	21Q65A0318	8	4	5	17	8	5	5	18	18
24	21Q65A0319	7	3	5	15	9	5	5	19	17
25	21Q65A0320									
26	21Q65A0321	8	6	5	19	9	6	5	20	20
27	21Q65A0322	AB			5	8	5	5	18	12
28	21Q65A0323	6	4	5	15	9	5	5	19	17
29	21Q65A0324	7	6	5	18	8	5	5	18	18
30	21Q65A0325	AB		5	5	4	5	5	14	10
31	21Q65A0326	AB		5	5	5	4	5	14	10

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IV B. TECH II SEM (ACADEMIC YEAR 2023-24)-DISPLAY OF MARKS

BRANCH: MECH

S. NO	HT NO	IM	IR	TQM
1	20Q61A0301	24	19	23
2	20Q61A0302	20	19	22
3	20Q61A0303	24	20	23
4	20Q61A0304			
5	21Q65A0301			
7	21Q65A0302	23	22	23
8	21Q65A0303	25	23	25
9	21Q65A0304	24	23	25
11	21Q65A0306			
12	21Q65A0307	22	19	24
13	21Q65A0308	25	21	24
14	21Q65A0309	23	19	23
15	21Q65A0310			
16	21Q65A0311	21	17	21
17	21Q65A0312	20	20	22
18	21Q65A0313			
19	21Q65A0314	23	20	24
20	21Q65A0315	23	19	22
21	21Q65A0316			
22	21Q65A0317	14	12	13
23	21Q65A0318	20	18	21
24	21Q65A0319	22	17	22
25	21Q65A0321	21	20	21
26	21Q65A0322	14	12	13
27	21Q65A0323	21	17	21
28	21Q65A0324	24	18	24
29	21Q65A0325	14	10	13
30	21Q65A0326	17	5	5

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DEPARTMENT OF MECHANICAL ENGINEERING

INDUSTRIAL ORIENTED MINI PROJECT DETAILS 2023-24

Batch No	Roll No	Name of the student	MINI PROJECT TITLE	GUIDE
1	21Q65A0302	M SHIVA	Fabrication of cooling tower based room cooling system	Mr.A.SHANKAR
	21Q65A0319	K CHANDRAKANTH		
	21Q65A0326	S SWAROOP KUMAR		
2	20Q61A0302	M AMARNADH	Fabrication of solar air purification system for control of air pollution	Mr.M.VENKATESHWARLU
	21Q65A0303	P SIDDHU KALYAN		
	21Q65A0318	K SOWMYA		
3	21Q65A0304	S SINDHU	Design and fabrication of portable wood turning lathe machine	Dr.Y.RAMESH BABU
	21Q65A0317	G NAGA PRASAD		
	21Q65A0321	M HEMANTH REDDY		
4	20Q61A0301	E POULU	Solar farm water trajector	Dr.G.RAMACHANDRA REDDY
	21Q65A0316	G SAI KIRAN		
	21Q65A0308	B SWETHA		
5	21Q65A0314	E GANESH GOUD	Fabrication of solar conveyor	Mr.K.SUMANTH
	21Q65A0312	CH GOWTHAM		
	20Q61A0303	S SHIVAJI		
6	21Q65A0309	B MAHESH	Natural fiber reinforced composites for engineering applications	V.HARI NAYAK
	21Q65A0315	E SRIKANTH		
	21Q65A0322	P VIJAY KUMAR		
7	21Q65A0307	A RAHUL	Design and fabrication of hydraulic sheet bending machine	A.SWATHI
	21Q65A0310	B.NARSI REDDY		
	21Q65A0325	SK AZMEEN		
8	21Q65A0311	B SHIVA KUMAR	360 degrees unloading dump truck	RV PRAHLAD
	21Q65A0323	R RAMACHANDER		
	21Q65A0324	R PALLAVI		

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INDUSTRIAL ORIENTED MINI PROJECT EXTERNAL MARKS STATEMENT

IV B.TECH II SEMESTER REG R18

BATCH NO	ROLL NO	REV-1 (20M)	REV-2 (20M)	REV-3 (20M)	REV-4 (20M)	REV-5 (20M)	TOTAL (100M)
1	21Q65A0302	15	16	20	19	20	90
	21Q65A0319	12	14	18	16	20	80
	21Q65A0326	15	13	17	17	18	80
2	20Q61A0302	10	12	15	15	18	70
	21Q65A0303	15	18	19	20	20	92
	21Q65A0318	12	12	13	15	18	70
3	21Q65A0304	20	16	18	16	20	90
	21Q65A0317	8	12	12	15	18	65
	21Q65A0321	16	17	18	18	19	88
4	20Q61A0301	19	18	15	18	20	90
	21Q65A0316	AB					
	21Q65A0308	12	11	14	15	15	65
5	21Q65A0314	15	15	16	15	19	80
	21Q65A0312	10	17	14	15	12	68
	20Q61A0303	14	14	16	13	16	73
6	21Q65A0309	16	12	15	18	14	75
	21Q65A0315	19	18	15	18	20	90
	21Q65A0322	15	15	14	15	16	75
7	21Q65A0307	18	15	17	15	20	85
	21Q65A0310	AB					
	21Q65A0325	17	15	18	17	18	85
8	21Q65A0311	16	16	17	15	20	84
	21Q65A0323	15	17	15	18	19	84
	21Q65A0324	20	15	16	17	16	84

PROJECT TEAM   HOD   PRINCIPAL

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MAJOR PROJECT INTERNAL MARKS STATEMENT

IV B.TECH II SEMESTER REG R18

BATCH NO	ROLL NO	REV-1 (5M)	REV-2 (5M)	REV-3 (5M)	REV-4 (5M)	REV-5 (5M)	TOTAL (25M)
1	21Q65A0302	4	5	5	4	5	23
	21Q65A0311	4	4	5	4	5	22
	21Q65A0314	5	4	5	5	5	24
	21Q65A0319	4	4	4	4	5	21
	21Q65A0326	3	4	4	5	4	20
2	20Q61A0302	4	4	4	4	5	21
	21Q65A0303	5	5	4	5	5	24
	21Q65A0318	3	4	4	5	4	20
	21Q65A0324	5	5	5	4	5	24
3	20Q61A0303	4	5	5	5	4	23
	21Q65A0304	5	4	5	5	5	24
	21Q65A0317	3	3	4	4	4	18
	21Q65A0321	4	4	4	5	5	22
	21Q65A0323	4	5	4	5	5	23
4	20Q61A0301	4	4	5	4	5	22
	21Q65A0307	4	5	4	5	5	23
	21Q65A0308	5	5	5	5	4	24
	21Q65A0325	2	4	5	5	4	20
5	21Q65A0309	5	4	5	5	4	23
	21Q65A0312	4	2	4	5	4	19
	21Q65A0315	5	4	5	5	5	24
	21Q65A0322	4	4	5	4	4	21

PROJECT TEAM   HOD   PRINCIPAL

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DEPARTMENT OF MECHANICAL ENGINEERING

MAJOR PROJECT DETAILS 2023-24

Batch No	Roll No	Name of the student	MAJOR PROJECT TITLE	GUIDE
1	21Q65A0302	M SHIVA	Fabrication of automatic wall painting robot	Mr.A.SHANKAR
	21Q65A0311	B SHIVA KUMAR		
	21Q65A0314	E GANESH GOUD		
	21Q65A0319	K CHANDRAKANTH		
	21Q65A0326	S SWAROOP KUMAR		
2	20Q61A0302	M AMARNADH	Design and fabrication of conveying cum reciprocating sand sieving machine	Mr.M.VENKATESHWARLU
	21Q65A0303	P SIDDHU KALYAN		
	21Q65A0318	K SOWMYA		
	21Q65A0324	R PALLAVI		
3	20Q61A0303	S SHIVAJI	Design and fabrication of multipurpose agriculture machine	Dr.Y.RAMESH BABU
	21Q65A0304	S SINDHU		
	21Q65A0317	G NAGA PRASAD		
	21Q65A0321	M HEMANTH REDDY		
	21Q65A0323	R RAMACHANDER		
4	20Q61A0301	E POULU	Design and fabrication of 3D printer	Dr.Y.RAMESH BABU
	21Q65A0307	A RAHUL		
	21Q65A0308	B SWETHA		
	21Q65A0325	SK AZEEN		
5	21Q65A0309	B MAHESH	Fabrication of robotic unwanted plant remover	Mr.K.SUMANTH
	21Q65A0312	CH GOWTHAM		
	21Q65A0315	E SRIKANTH		
	21Q65A0322	P VIJAY KUMAR		

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MAJOR PROJECT STAGE-II EXTERNALMARKS STATEMENT

IV B.TECH I SEMESTER REG R18

BATCH NO	ROLL NO	REV-1	REV-2	REV-3	REV-4	REV-5	RESULT
1	21Q65A0302	13	14	15	15	15	72
	21Q65A0311	12	14	14	15	15	70
	21Q65A0314	13	15	14	15	15	72
	21Q65A0319	14	14	12	15	15	70
	21Q65A0326	12	14	15	15	14	70
2	20Q61A0302	15	15	13	14	15	72
	21Q65A0303	13	14	14	14	15	70
	21Q65A0318	10	12	13	15	15	65
	21Q65A0324	12	13	14	14	15	68
3	20Q61A0303	12	12	14	15	15	68
	21Q65A0304	13	15	15	15	14	72
	21Q65A0317	10	11	13	14	15	63
	21Q65A0321	10	10	13	13	14	60
	21Q65A0323	10	12	12	12	14	60
4	20Q61A0301	12	13	15	15	15	70
	21Q65A0307	12	13	14	14	15	68
	21Q65A0308	13	15	14	12	14	68
	21Q65A0325	14	11	10	10	15	60
5	21Q65A0309	15	13	13	14	15	70
	21Q65A0312	15	15	12	12	14	68
	21Q65A0315	15	15	13	14	15	72
	21Q65A0322	11	12	14	14	14	65

PROJECT TEAM   HOD   PRINCIPAL

Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dist.

FABRICATION OF AUTOMATIC WALL PAINTING ROBOT

A MAJOR PROJECT REPORT

Submitted in partial fulfilment of the requirements for the award of the degree

of

Bachelor of Technology in Mechanical Engineering

By

Mr. M.SHIVA	(21Q65A0302)
Mr. B.SHIVA KUMAR	(21Q65A0311)
Mr. E.GANESH GOUD	(21Q65A0314)
Mr. K.CHANDRAKANTH	(21Q65A0319)
S. SWAROOP KUMAR	(21Q65A0326)

Under the Guidance of

A.SHANKAR, M.s
Associate Professor

DEPARTMENT OF MECHANICAL ENGINEERING

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by A.I.C.T.E, Recognized by Govt. of T.S. & Affiliated to J.N.T.U, Hyderabad)
(Accredited by NAAC with 'B++' Grade)
Gunthapally (V), Hayath Nagar (M), RR District, T.S. Pin: 501512.

2023-24

FABRICATION OF AUTOMATIC WALL PAINTING ROBOT

A MAJOR PROJECT REPORT

Submitted in partial fulfillment of the requirements for the award of the degree

of

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Mr. M.SHIVA	(21Q65A0302)
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Mr.K.CHANDRAKANTH	(21Q65A0319)
S. SWAROOPKUMAR	(21Q65A0326)

Under the Guidance of

A.SHANKAR, M.E

Associate Professor

to the

DEPARTMENT OF MECHANICAL ENGINEERING
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

2023- 24

"FABRICATION OF AUTOMATIC WALL PAINTING ROBOT"

A Major Project Report

Submitted in partial fulfillment of the requirements
for the award of the degree of

Bachelor of Technology

In

MECHANICAL ENGINEERING

Submitted By

Mr. M.SHIVA	[21Q65A0302]
Mr. R.SHIVA KUMAR	[21Q65A0311]
Mr. E.GANESH GOUD	[21Q65A0314]
Mr. K.CHANDRAKANTH	[21Q65A0319]
Mr. S.SWAROOP KUMAR	[21Q65A0326]

Under the Esteemed Guidance of

A.SHANKAR, M.E

Associate Professor

DEPARTMENT OF MECHANICAL ENGINEERING

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, affiliated to JNTU, HYDERABAD & Accredited by NAAC)

Gunthapally (V), Abdullapurmet (M), Hayath Nagar,

R.R.Dist, Near Ramoji Film city, Hyderabad- 501512

2023-2024

CERTIFICATE

This is to certify that the Project work entitled "FABRICATION OF AUTOMATIC WALL PAINTING ROBOT" that is being submitted by **M.SHIVA (21Q65A0302), B.SHIVA (21Q65A0311), E.GANESH GOUD (21Q65A0314), K.CHANDRAKANTH (21Q65A0319),S SWAROOP KUMAR (21Q65A0326)** in partial fulfilment for the award of **Bachelor of Technology (B.Tech)** in MECHANICAL ENGINEERING to the Jawaharlal Nehru Technological University Hyderabad during academic year 2023-2024 The results presented in this project have been verified and found to be satisfactory. The results presented in this is have not been submitted to any other University or Institute for the award of any degree.

A.SHANKAR,
Assistant Professor
Project Supervisor

Dr. Y. RAMESH BABU,
Associate Professor
Head of the Department

Dr. G. RAMACHANDRA REDDY,
Principal

External Examiner

ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of any work would be incomplete without naming the people who made it possible, whose constant guidance and encouragement made this work perfect.

We respectfully acknowledge project guide A. SHANKAR, Associate Professor in Department of Mechanical Engineering, all our professors and staff members for their support, encouragement, advice and their guidance.

We special thanks to Dr. Y. RAMESH BABU, Head of the Department of Mechanical Engineering for having kindly obliged to take the onus of guiding us for this project.

We wish to convey my gratitude and express sincere thanks to all **P.R.C** (Project Review Committee) members for their support and Co-operation rendered for successful submission of our project work.

We wish to express my sincere gratitude to **Dr. G. RAMACHANDRA REDDY** Principal of Avanthi Institute of Engineering &Technology, Hyderabad for his consistent help and encouragement to complete the project work.

We are very much thankful to **Shri M. SRINIVAS RAO** Chairman of Avanthi Institute of Engineering & Technology & Management for their help in providing good facilities in our college.

Submitted By

M.SHIVA	[21Q65A0302]
B. SHIVA KUMAR	[21Q65A0311]
E. GANESH GOUD	[21Q65A0314]
K. CHANDRAKANTH	[21Q65A0319]
S. SWAROOP KUMAR	[21Q65A0326]

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dis.

DECLARATION

We **M.SHIVA (21Q65A0302),B.SHIVA KUMAR (21Q65A0311),E.GANESH GOUD (21Q65A0314), K.CHANDRAKANTH (21Q65A0319),S.SWAROOP KUMAR (21Q65A0326)**

students of Mechanical Engineering of Avanthi Institute of Engineering and Technology Affiliated to JNTU Hyderabad Pursuing final year B.Tech, hereby declare that the project work entitled **"FABRICATION OF AUTOMATIC WALL PAINTING ROBOT"** is an original work done by us. The information and data given in the report is authentic to the best of my Knowledge.

The report is submitted as a partial fulfillment for award of B.Tech Degree during the academic year 2023-2024

Submitted by

M.SHIVA	[21Q65A0302]
B. SHIVA KUMAR	[21Q65A0311]
E. GANESH GOUD	21Q65A0314
K. CHANDRAKANTH	21Q65A0319
S. SWAROOP KUMAR	[21Q65A0326]

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurthbacolly (M), Abdullapurmet (Mdl) R.R Dis

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S& Affiliated to JNTUH, Hyderabad)

NAAC "B++" Accredited Institute

Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.

www.aietg.ac.in email: principal.avanthi@gmail.com

Cir./Exam Section/001   Date: 27-10-2022

Attention all the I B.TECH II SEM students are here by informing you that Lab External examinations will be conducted from 01-11-2022 to 02-11-2022.

Time: FN: 09.40 AM TO 12.50 PM

AN: 01.20 PM TO 03.50 PM

OIE   PRINCIPAL

PRINCIPAL

Avanthi Institute of Engg. & Tec.

Gunthapally (V), Abdullapurmet (Mdl) R R.Dis-

Copy to: 1. HOD – H&S

2. Administrative Office

3. Notice Boards

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

III B.TECH I SEM LAB EXTERNAL 2023-24

Branch	Lab Name	Internal faculty Name	Mobile Number	Date of External Exam	External Faculty Name	Mobile number	Mail id
Mech	Heat Transfer Lab	Mr A.SHANKAR	8099246989	13/08/24	Mr. M. Ashok	9491860866	ashoknewashok@gmail.com
	Advanced English Communication skills Lab	Mr V. SURYA	9014502946	14/08/24	J. Hari Babu	8885162714	harinari@gmail.com

KAA

HOD-ME

PRINCIPAL

Avanthi Institute of Engg. & Tech

Gunthapally (V), Abdullapurmet (Mdl) R R Dis.

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

III B.TECH II SEMESTER LAB EXTERNAL EXAMINATIONS-R18

Sub: **Metrology &Machine Tools lab**   Branch: **Mechanical**

Date: **13-08-24**   Session: **FN/AN**

1. Drafting: Development of part drawings for various components in the form of orthographic and isometric. Representation of dimensioning and tolerances.
2. Part Modeling: Generation of various 3D Models through Protrusion, revolve, sweep. Creation of various features. Study of parent child relation. Feature based and Boolean based modeling and Assembly Modeling. Study of various standard Translators. Design of simple components.
3. Determination of deflection and stresses in 2D and 3D trusses and beams.
4. Determination of deflections, principal and Von-mises stresses in plane stress, plane strain and Axi-symmetric components.
5. Determination of stresses in 3D and shell structures (at least one example in each case).
6. Estimation of natural frequencies and mode shapes, Harmonic response of 2D beam.
7. Study state heat transfer analysis of plane and axi-symmetric components.
8. Development of process sheets for various components based on Tooling and Machines.
9. Development of manufacturing defects and tool management systems.
10. Study of various post processors used in NC Machines.
11. Development of NC code for free form and sculptured surfaces using CAM software.
12. Machining of simple components on NC lathe and Mill by transferring NC Code / from CAM software.

Internal Examiner Signature   External Examiner Signature

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R R.Dist.

Signature of HOD

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aietg.ac.in email: principal.avanthi@gmail.com

DEPARTMENT OF MECHANICAL ENGINEERING

III B. Tech II Semester Lab External Examinations –18

AY 2023-24

Scheme of Evaluation

S.NO	EVALUTION PROCESS	MARKS
1	Internal Lab Exam	40M
2	Day Today Work	15M
3	Record	10M
4	Viva	10M

HOD

PRINCIPAL

Jawaharlal Nehru Technological University Hyderabad
Kukatpally, Hyderabad - 500 085, Telangana State, India.

EXAMINATION BRANCH
PRACTICAL EXAMINATION ANSWER BOOK

College Stamp

[5 pages]

PRINCIPAL
Avanthi Institute of Engineering & Technology
Gurthapally (Vill), Abdullapurmet (Mdl) R.R. Dist.

No. **23022609**

H.T.No. | 2 | 2 | Q | 6 | 5 | A | 0 | 3 | 0 | 5 |

Controller of Examinations

Name of the Examination: Lab External 3rd year IInd sem B.T.ECH Branch MECH.

Lab Subject: CAD/CAM (Computer Aided Drafting / Manufacturing). Date: 13-08-24

V. Disht 13/08/24

Signature of the Student with date:

13/8/24

Signature of the Internal Examiner with date:

For Examiners' Award only

Description	Marks
Design / Code	22
Execution	17
Output / Results	21
Viva - Exam	10
Total	70

Total Marks obtained	70
Maximum Marks	75

Signature of External Examiner with date

13/8/24

Signature of Internal Examiner with date

PRINCIPAL
Avanthi Institute of Engg. & Tec.
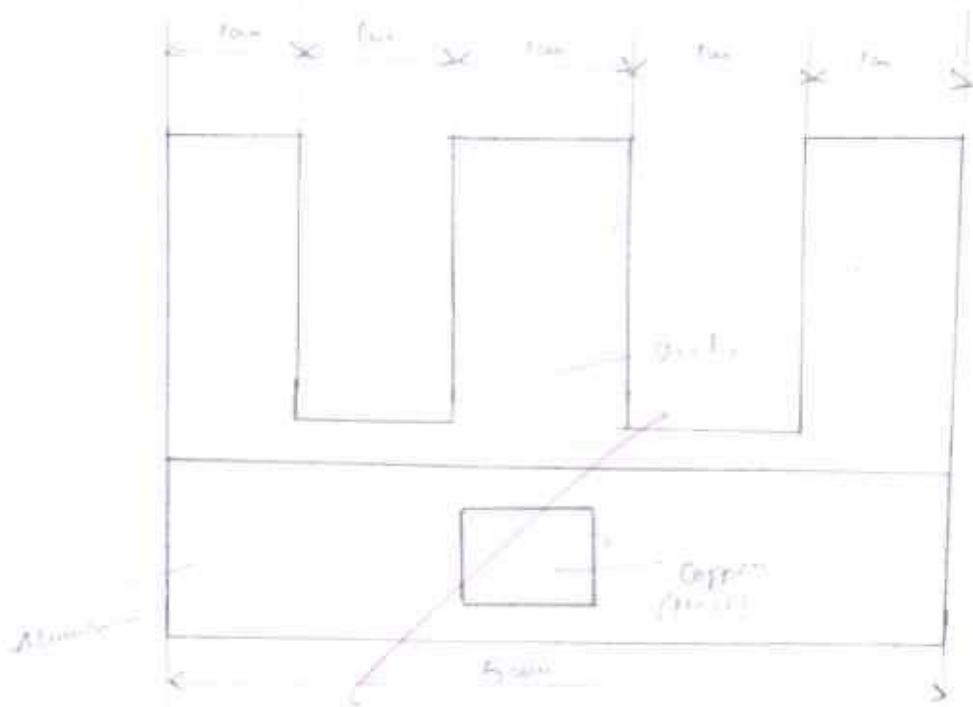Gurtihapally (V), Abdullapurmet (Mdl) R.R.Dis.

Aim:- To find the nodal temperature distribution, also to find the maximum temperature of given fin structured component, and list the results of the component.

Procedure:-

1. Click on work plane settings > WP setting > check the given cartesian and grid by complex > enter the given values as following > Snapiner = 0.01, spacing = 0.1 and maximum value = 0.1, minimum value = 0 > click ok..

2. Click on the ANSYS tool main menu > preprocessor > create > modelling > areas > click ok.

3. Now select the end points of the rectangle. Giving the measurements for the rectangle made of Area by 5cm x 2cm that is by 5units and 2units of grid on the areas.

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Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.

www.aietg.ac.in email: principal.avanthi@gmail.com

College Code: Q6

To

The Principal,

Vignan Institute of Technology and Science,

Deshmukhi(v),

Yadadri Bhuvanagiri.

Dear Sir,

Sub: Relieving Order - Lab External Examiner – Reg.

This is to certify that Mr/~~Mrs.~~ J. Ashok , Assistant Professor in Mech Department of Your institutions, has been completed successfully his/her duty as External Examiner for Heat Transfer Lab External Examination for B. Tech III Year II Semester for Mech Department at our college on 13/08/2024.

He has been relieved from his duties in our college on 13/08/2024 , 4.00PM.

Thanking You Sir,

Yours faithfully,

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurtihapally (V), Abdullapurmet (Mdi) R R.Dis-

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.
www.aietg.ac.in email: principal.avanthi@gmail.com

College Code: Q6

To
The Principal,
Vignan Institute of Technology and Science,
Deshmukhi(v),
Yadadri Bhuvanagiri.

Dear Sir,

Sub: Relieving Order - Lab External Examiner – Reg.

This is to certify that **Mr/Mrs.** T. HariBabu , Assistant Professor in
Mech Department of Your institutions, has been completed successfully his/her duty as
External Examiner for AECS **Lab** External
Examination for B. Tech III Year I Semester for Mech Department at our college
on 14/08/2024.

He has been relieved from his duties in our college on 14/08/2024, 4.00PM.

Thanking You Sir,

Yours faithfully,

PRINCIPAL
Avanthi Institute of Engg. & Tec
Gurtihapally (V), Abdullapurmet (Mdl) R R.Dis

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.

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B.TECH, B.PHARMACY III YEAR II SEMESTER CBT UNIVERSITY EXAMS AUGUST- 2023
Allotted Observers from 08/08/2023 AND 09/08/2023 Date:05/08/2023

S.NO	OBSERVER_ID	OBSERVER_NAME	MOBILE_NO	COLLEGE CODE	COLLEGENAME	HOST CODE	HOSTNAME
1	GZIPP5911E	VYSHNAVI PITTALA	8519895715	1K	SREE CHAITANYA INSTITUTE OF PHARMACEUTICAL SCIENCES	S4	VAAGESWARI COLLEGE OF ENGINEERING
2	APPPM4658E	MANDA RAMESH	9346957396	TK	SVS GROUP OF INSTITUTIONS	UK	VAAGDEVI ENGINEERING COLLEGE
3	CMJPM3402M	MANDAVA HARSHA	8686811160	N7	DRK INSTITUTE OF SCIENCE & TECHNOLOGY	WH	BVRIT HYDERABAD COLLEGE OF ENGINEERING FOR WOMEN
4	BVNPK0794A	KYATHAM SUNEETHA	9849796878	FJ	SSJ COLLEGE OF PHARMACY	D2	SRIDEVI WOMEN'S ENGINEERING COLLEGE
5	AZIPK3463C	KASUBA VENKATA RAM MOHAN	9618439030	GE	BHASKAR ENGINEERING COLLEGE	J2	JOGINPALLY B.R. ENGINEERING COLLEGE
6	BDKPR8665Q	RELANGI VEDA PRAHLAD	9059199007	Q6	AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY	VE	SREYAS INSTITUTE OF ENGINEERING AND TECHNOLOGY
7	AZPPM8979A	MITTA CHAITANYA	9908977179	Z3	BOJJAM NARASIMHULU PHARMACY COLLEGE FOR WOMEN	E3	MAHAVEER INSTITUTE OF SCIENCE & TECHNOLOGY
8	OFQPS3427N	JINKALA VENKATA SIVA CHANDANA	7780687191	T2	CMR COLLEGE OF PHARMACY	UJ	MALLA REDDY ENGINEERING COLLEGE AND MANAGEMENT SCIENCES
9	DMRPP1139R	RAJ DIVYA POTH	8328363783	S7	HOLY MARY INSTITUTE OF TECHNOLOGY & SCIENCE (COLLEGE OF PHARMACY)	UP	VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN
10	CDKPB9873P	BEEDHA SARASWATHI	9553226650	7M	MOTHER TERESA PHARMACY COLLEGE	C5	SAI SPURTHI INSTITUTE OF TECHNOLOGY

PRINCIPAL

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Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R R.Dis.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in email: principal.avanthi@gmail.com

Jawaharlal Nehru Technological University Hyderabad
University Examination Branch.

Q603-10-2023

Dr. K. VENKATESWARA RAO
M.Sc .,M.Tech .,PhD.,PDF(USA)
Professor of Nano Technology &
DIRECTOR OF UNIVERSITY EXAMINATIONS

To,
The Principal,
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY (Q6).

Dear Sir/Madam,
   Sub:- Exam Branch-JNTUH-Appointment of Subject Experts from your college for Spot
Valuation duty-Request for deputing the appointed subject experts-Reg.

   I am glad to inform you that the following faculty members of your college have been appointed as
subject experts for spot valuation duty at Examination Branch, JNTUH. You are requested to depute these
faculty members duly adjusting the class work/Invigilation/other assignments and by issuing the relieving
letter. The faculty members deputed for Spot valuation duty shall report at Examinations Building Spot
Valuation Center-JNTUH Campus, Kukatpally, Hyderabad everyday by 10 AM. For any further
clarifications please contact the reporting officer (mentioned in table here under).

Evaluator Name	Name of the Subject to be Evaluated	Dates of Valuation	Reporting Officer
MEKA SHIREESHA	DESIGN AND ANALYSIS OF ALGORITHMS	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
MALLIKANTI VENKATESWARLU	ENGINEERING MECHANICS	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SWATHI ANNE	FLUID MECHANICS AND HYDRAULIC MACHINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
RAMESH BABU YELURI	MECHANICS OF FLUIDS AND HYDRAULIC MACHINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
ACHINI SHANKAR	THERMAL ENGINEERING I	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
RAGINI MALALI	NETWORK THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
MALOTH SHANKAR	NETWORK THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SATISH KUMAR MATHALA	NETWORK ANALYSIS AND TRANSMISSION LINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
BANGARU SIDDHARTHA JETTY	NETWORK ANALYSIS AND TRANSMISSION LINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dis.

Avanthi Institute of Engineering and Technology

Jawaharlal Nehru Technological University Hyderabad

Kukatpally, Hyderabad - 500 085, Telangana State, India.

EXAMINATION BRANCH
PRACTICAL EXAMINATION ANSWER BOOK

College Stamp

(8 pages)

No.: **23791535**

PRINCIPAL'S FASCIMILE ➡

k. venkateswara ro

Controller of Examinations

H.T.No.:

Name of the Examination _____ Branch _____

Lab Subject _____ Date _____

Signature of the Student with date

Signature of Internal Examiner with date

---

1. Candidates are prohibited from :

   i) Writing their Hall Ticket No. in any part of their Answer Books except in the space specially provided for the purpose.

   ii) Writing their names or symbols in any manner whatsoever in their Answer Books.

   iii) Addressing the examiner in any manner whatsoever in their Answer Books.

   If they do so, their Answer Books will not be valued and the student will be booked under Malpractice case.

2. The candidates are not allowed into the Lab (where the Lab Exam is scheduled), after 30 minutes from the time of commencement of the examination.

3. The candidates are not allowed to leave the Lab (where the Lab Exam is scheduled), for first 1½ hours from the time of commencement of the examination.

4. The candidate should not forget to enter Hall Ticket Number. Otherwise their Answer Book will not be valued.

5. Before beginning to answer any question, the candidate should write the correct question number.

6. Answer should be written on both sides of the paper.

7. Please leave a margin of 2.5 cm on the left side of each page. Do not write anything in the margin except the question numbers.

8. No loose sheets of paper will be allowed in to the Lab where the Exam is scheduled and no paper must be detached from the Answer Book.

9. All additional Answer Sheets and Graph Sheets, if used, should be attached before the last sheet of the main Answer Book and fastened securely.

10. Answer must be legibly written. **PRINCIPAL**

11. This Answer Book should be returned to one of the examiners before leaving the Lab.

12. The Candidate will be booked under malpractice for damaging / not returning the Answer Book after the examination.

For Examiners' Award only

Description	Marks
Design / Code	
Execution	
Output / Results	
Viva - Exam	
Total	

Total Marks obtained

Maximum Marks

Signature of External Examiner with date

Signature of Internal Examiner with date **PRINCIPAL**

Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dist.

Dr. K. VENKATESWARA RAO
M.Sc.,M.Tech.,PhD.,PDF(USA).
Professor of Nano Technology. &
DIRECTOR OF UNIVERSITY EXAMINATIONS

To,
The Principal,
AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY (Q6).

Dear Sir/Madam,

Sub:- Exam Branch-JNTUH-Appointment of Subject Experts from your college for Spot Valuation duty-Request for deputing the appointed subject experts-Reg.

I am glad to inform you that the following faculty members of your college have been appointed as subject experts for spot valuation duty at Examination Branch, JNTUH. You are requested to depute these faculty members duly adjusting the class work/Invigilation/other assignments and by issuing the relieving letter. The faculty members deputed for Spot valuation duty shall report at Examinations Building Spot Valuation Center-JNTUH Campus, Kukatpally, Hyderabad everyday by 10 AM. For any further clarifications please contact the reporting officer (mentioned in table here under).

Evaluator Name	Name of the Subject to be Evaluated	Dates of Valuation	Reporting Officer
MEKA SHIREESHA	DESIGN AND ANALYSIS OF ALGORITHMS	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
MALLIKANTI VENKATESWARLU	ENGINEERING MECHANICS	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SWATHI ANNE	FLUID MECHANICS AND HYDRAULIC MACHINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
RAMESH BABU YELURI	MECHANICS OF FLUIDS AND HYDRAULIC MACHINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
ACHINI SHANKAR	THERMAL ENGINEERING I	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
RAGINI MALALI	NETWORK THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
MALOTH SHANKAR	NETWORK THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SATISH KUMAR MATHALA	NETWORK ANALYSIS AND TRANSMISSION LINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
BANGARU SIDDHARTHA JETTY	NETWORK ANALYSIS AND TRANSMISSION LINES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2

PRINCIPAL

SHIVA SHANKER LAVUDYA	FORMAL LANGUAGES AND AUTOMATA THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SHIVA SHANKER LAVUDYA	FORMAL LANGUAGE AND AUTOMATA THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
RAMANAREDDY NARU	TOTAL QUALITY MANAGEMENT	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SUBHAN ALI SHAIK	FORMAL LANGUAGES AND AUTOMATA THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
MANDADI SURENDERREDDY	ENGINEERING MECHANICS	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SEELAM SRIKANTH REDDY	NETWORK THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
ALLA SRAVANI	DATA STRUCTURES	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2
SUBHAN ALI SHAIK	FORMAL LANGUAGE AND AUTOMATA THEORY	04-10-2023 to 07-10-2023	Additional Controllers of Examination 2

Please depute the faculty for spot valuation at examination branch, JNTUH. Each faculty of your college need to attend minimum 6 days.Your co-operation is highly solicited for the smooth conduct of spot valuation work.

sd/-

DIRECTOR OF UNIVERSITY EXAMINATIONS, JNTUH

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

HYDERABAD - 500 085, TELANGANA STATE, INDIA.

College: QG AIET, HAYATHNAGAR

Sl. No. PC 05150089

31678000140

PROVISIONAL CERTIFICATE

21678000140

HT No: 20Q65A0305

This is to certify that Mr. SUTHRALA VAMSHIKRISHNA

S/o   SUTHRALA GANGANNA   passed

B. Tech. _____ ENGINEERING

degree examination of this University, held in July, 2023 _____ and that

he   was   placed in _____ FIRST CLASS.

He   has satisfied all the requirements for the award of the degree.

Hyderabad - T.S.

Controller of Examinations

REGISTRAR

Date: August 21, 2023

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
HYDERABAD - 500 085, TELANGANA STATE, INDIA.

CONSOLIDATED MEMO OF MARKS GRADES AND CREDITS

C5146097 B.Tech. MECHANICAL ENGINEERING

Name : SUTHRALA VAMSHIKRISHNA

Hall Ticket No : 20Q65A0305

Serial. No. : 21678000140

Year of Admission : 2020-2021

Name of the College : Q6-AIET,HAYATHNAGAR

Month & Year of Final Exam : July,2023

Class Awarded : FIRST CLASS

S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS	S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS
	I SEMESTER			**I YEAR**		**II SEMESTER**			

DIRECT ADMISSION INTO II-YEAR UNDER LATERAL ENTRY SCHEME

S.No	SUBJECT TITLE	GP	GR	CR	S.No	SUBJECT TITLE	GP	GR	CR
	I SEMESTER			**II YEAR**		**II SEMESTER**			
1	PRODUCTION TECHNOLOGY	5	C	3.0	1	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	5	C	3.0
2	PROBABILITY AND STATISTICS & COMPLEX VARIABLES	5	C	4.0	2	THERMAL ENGINEERING - I	5	C	4.0
3	MATERIAL SCIENCE AND METALLURGY	5	C	3.0	3	FLUID MECHANICS AND HYDRAULIC MACHINES	5	C	4.0
4	THERMODYNAMICS	6	B	4.0	4	INSTRUMENTATION AND CONTROL SYSTEMS	6	B	3.0
5	MECHANICS OF SOLIDS	7	B+	4.0	5	KINEMATICS OF MACHINERY	6	B	4.0
6	MACHINE DRAWING PRACTICE	10	O	1.0	6	FLUID MECHANICS AND HYDRAULIC MACHINES LAB	10	O	1.0
7	MATERIAL SCIENCE AND MECHANICS OF SOLIDS LAB	10	O	1.0	7	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING LAB	10	O	1.0
8	PRODUCTION TECHNOLOGY LAB	10	O	1.0	8	INSTRUMENTATION AND CONTROL SYSTEMS LAB	10	O	1.0
9	CONSTITUTION OF INDIA *	-	-	0.0	9	GENDER SENSITIZATION LAB *	-	-	0.0

S.No	SUBJECT TITLE	GP	GR	CR	S.No	SUBJECT TITLE	GP	GR	CR
	I SEMESTER			**III YEAR**		**II SEMESTER**			
1	DESIGN OF MACHINE MEMBERS - I	6	B	3.0	1	DESIGN OF MACHINE MEMBERS - II	6	B	3.0
2	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	6	B	3.0	2	HEAT TRANSFER	5	C	4.0
3	METROLOGY & MACHINE TOOLS	7	B+	3.0	3	HEAT TRANSFER LAB	9	A+	1.0
4	THERMAL ENGINEERING - II	8	A	3.0	4	FUNDAMENTALS OF MANAGEMENT FOR ENGINEERS	5	C	3.0
5	DYNAMICS OF MACHINERY	5	C	4.0	5	FINITE ELEMENT METHODS	6	B	3.0
6	OPERATIONS RESEARCH	9	A+	3.0	6	CAD & CAM	7	B+	3.0
7	METROLOGY & MACHINE TOOLS LAB	10	O	1.0	7	CAD & CAM LAB	10	O	1.0
8	THERMAL ENGINEERING LAB	10	O	1.0	8	ADVANCED COMMUNICATION SKILLS LAB	10	O	1.0
9	KINEMATICS & DYNAMICS LAB	10	O	1.0	9	UNCONVENTIONAL MACHINING PROCESSES	9	A+	3.0
10	INTELLECTUAL PROPERTY RIGHTS *	-	-	0.0	10	ENVIRONMENTAL SCIENCE *	-	-	0.0
11	CYBER SECURITY *		-	0.0	11	ARTIFICIAL INTELLIGENCE *	-	-	0.0

S.No	SUBJECT TITLE	GP	GR	CR	S.No	SUBJECT TITLE	GP	GR	CR
	I SEMESTER			**IV YEAR**		**II SEMESTER**			
1	INDUSTRIAL ORIENTED MINI PROJECT / SUMMER INTERNSHIP	10	O	2.0	1	INDUSTRIAL MANAGEMENT	5	C	3.0
2	TURBO MACHINERY	6	B	3.0	2	INDUSTRIAL ROBOTICS	8	A	3.0
3	PRINCIPLES OF ENTREPRENEURSHIP	8	A	3.0	3	PROJECT STAGE - II	10	O	7.0
4	POWER PLANT ENGINEERING	8	A	3.0	4	TOTAL QUALITY MANAGEMENT	7	B+	3.0
5	PROJECT STAGE - I	10	O	3.0					
6	ADDITIVE MANUFACTURING	7	B+	3.0					
7	REFRIGERATION & AIR CONDITIONING	6	B	3.0					
8	SEMINAR	10	O	1.0					

Number of Credits registered and secured are 123

Aggregate Marks/CGPA Secured : 6.99

Date of Issue : August 21, 2023

PRINCIPAL

CONTROLLER OF EXAMINATIONS

2

SI. No. : **2289517**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
KUKATPALLY - HYDERABAD - 500 085, TELANGANA STATE, INDIA
ANSWER BOOKLET
(Read the Instructions given on the reverse side)

YR CODE **2**

PART - I

Course : B.Tech.
Hall Ticket No. : 197Q1A05C0
Name : MADA VIJENDER
Examination : II B.Tech I Sem Supplementary R18
Month-Year : Sep./Oct.-2023
Branch : COMPUTER SCIENCE AND ENGINEERING(05)
Subject Code : 153BK
Subject Name : OBJECT ORIENTED PROGRAMMING USING C++
Date of Exam : 05-10-2023(DAY 32)
College Name : BGI(7Q)

Signature of the Controller of exams

Signature of the Student with date

Signature of the Invigilator with date

Year / Sem / Regulation / Branch Code / Sub. Code / Sub. Nam
II B.Tech I Sem Supplementary R18-05-153BK
OBJECT ORIENTED PROGRAMMING USING C++
Date : 05-10-2023(DAY 32)

3153BK

This Part should be used by the Valuer during valuation of the Answer script

Course : B.Tech. Branch : 05
Subject Name : OBJECT ORIENTED PROGRAMMING USING C++
Subject Code : 153BK
Exam : II B.Tech I Sem Supplementary R18
Month-Year : Sep./Oct.-2023
Date of Exam : 05-10-2023(DAY 32)

Control Bundle No. **3153BK**

DO NOT TEAR OFF THIS BARCODE
Do Not Write Mark in Barcode area
Control Bundle No.

JNTUH

MARKS AWARDED FOR QUESTIONS
(for Examiner's award only)

Part - A						
Q.No.	a	b	c	d	e	Total
1						
	f	g	h	i	j	

Part - B							
Q.No	a	b	c	Q.No	a	b	c	Best Marks
2				3				
4				5				
6				7				
8				9				
10				11				
Grand Total

Total Marks

To be filled by the Examiner
Sl. No. of Answer Book in the Bundle

PART - II
To be filled by the Student
Subject Code as printed on top left corner of Question paper

Serial No of last page written

YR CODE **2**

MARKS IN WORDS
First Digit | Second Digit

Signature of the Examiner
Signature of the Scrutinizer

Sl. No. of Ans. Book in Bundle
Control Bundle No.

3153BK

YR CODE **2**

Course : B.Tech. Branch : 05
Subject Name : OBJECT ORIENTED PROGRAMMING USING C++
Subject Code : 153BK
Exam : II B.Tech I Sem Supplementary R18
Month-Year : Sep./Oct.-2023
Date of Exam : 05-10-2023(DAY 32)

Control Bundle No. **3153BK**

Bundle Number for Office use only
Do Not Write Mark in Barcode area

JNTUH

MARKS AWARDED FOR QUESTIONS
(for Examiner's award only)

Part - A						
Q.No.	a	b	c	d	e	Total
1						
	f	g	h	i	j	

Part - B							
Q.No	a	b	c	Q.No	a	b	c	Best Marks
2				3				
4				5				
6				7				
8				9				
10				11				
Grand Total

Total Marks

To be filled by the Examiner
Sl. No. of Answer Book in the Bundle

PART - III
To be filled by the Student
Subject Code as printed on top left corner of Question paper

Serial No of last page written

YR CODE **2**

MARKS IN WORDS
First Digit | Second Digit

Signature of the Examiner
Signature of the Scrutinizer

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Sl. No. of Ans. Book in Bundle
Control Bundle No.

3153BK

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ECE DEPT PROPOSING LIST OF EXTERNAL EXAMINERS FOR B.TECH MINI PROJECT VIVA VOCE

PANEL- I (A-SECTION & RE- ADMIT)

S.NO	NAME	ADRESS	MAIL ID	MOBILE NUMBER
1	Dr.N. ASHOK KUMAR 11150407-103414	ASSOCIATE PROFESSOR,HOD DEPT OF ECE, KASIREDDY NARAYANAREDDY COLLEGE OF ENGG &TECH, ABDULLAPUR VILLAGE&MANDAL,HYD	ashokmtech2k8@gmail.com	9866211581
2	Dr.P.Sandeep 4603-150408-140803	Assistant Professor, ECE department Experience:13 years Vignan institute of technology,hyderabad	pingili.sandeep@gmail.com	9705929659
3	Dr.A.SreenivasaRao 4265-150414-125516	Associate Professor,HOD ECE Department, Annamacharya Institute of Technology and Sciences(T8),HYDERABAD, R.R DISTICT	asraoecehod@gmail.com	9000598029
4	Dr Chandrasekhar Reddy	Senior Professor Electronics & Communication Engineering JNTUH University College of Engineering , Science & Technology Hyderabad	drpcsreddy@jntuh.ac.in	9490931650
5	DrRajani	B.E, M.E (NIT Trichy), Ph.D (IIT Delhi) Professor & Head IEEE, LM- ISTE, LM-ASI Electronics &Communication,hyderabad Engineering hyderabad	rajani.akula@jntuh.ac.in	9989922228

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PANEL- II (B-SECTION)

S.NO	NAME	ADRESS	MAIL ID	MOBILE NUMBER
1	Dr.A.SreenivasaRao **4265-150414-125516**	Associate Professor,HOD ECE Department, Annamacharya Institute of Technology and Sciences(T8),HYDERABAD, R.R DISTICT	asraoecehod@gmail.com	9000598029
2	**Dr.R.RAMESH BABU 69150402-105714**	ASSOCIATE PROFESSOR,HOD, DEPT OF ECE, JAGRUTHI INSTITUTE OF ENGINEERING &TECHNOLOGY, IBRAHIMPATNAM,HYDERABAD	ram4dhani@gmail.com	9701430286
3	**Mr T. V. Suresh Kumar**	Assoc. Prof ECE Department BHARAT INSTITUTE OF ENGINEERING AND TECHNOLOGY , HYDERABAD, R.R DISTICT	tv.sureshkumar18@gmail.com	8099787835
4	**DrRajani**	B.E, M.E (NIT Trichy), Ph.D (IIT Delhi) **Professor & Head** **IEEE, LM- ISTE, LM-ASI** Electronics & Communication Engineering hyderabad	rajani.akula@jntuh.ac.in	9989922228
5	Dr. Chandrasekhar Reddy	Senior Professor Electronics & Communication Engineering JNTUH University College of Engineering , Science & Technology HyderabadHyderabad	drpcsreddy@jntuh.ac.in	9490931650

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List of External Grievances

Any grievances related to End examinations are brought to the notice of the Examination cell. The cell sends a letter to the university immediately if necessary. The University takes immediate action based on the grievance. If a student is not satisfied with the marks allotted to his/her in the End examination, he/she can opting Revaluation, Recounting or Challenge evaluation after paying the requisite fee to the university. If the students are opting for re-evaluation/rechecking of their answer scripts the same is submitted to the university to do the needful. Hence the mechanism adopted by the college is transparent, time bound and efficient. Grievances related to mistakes in certificates are handled by the Examination cell by taking up the matter to the university. The below given list is the number of students applied for the Revaluation /Recounting and number of students whose marks are changed for the academic year 2022-2023.

The total number of External Grievances: 90 (Students applied for Recounting / Revaluation is 87, Modification in Certificates etc,-03)

The number of students whose marks are changed is 10,

The number of Modification in Certificates are changed is 03.

Percentage=90/13= 6.92

S. No	Academic Year	Nature of problem	Total Applied/Change
1	2022-23	I/I(RC/RV)	
2	2022	I/II(RC/RV)	
3	2022	II/II(RC/RV)	
4	2022	Replacement of External Examiner for Project viva	
5	2022	Request for Transcript	
6	2022	Observer Replacement	
7	2022	Missing Registrations	
8	2022	Hall Ticket Request	
9	2022	Decryption of Paper	
10	2022	Subject Registration Mismatch	
11	2022	Request for Late Registration	
12	2022	Gender Correction	
13	2022	Photo Updation	
14	2022	Name Correction	
15	2022	Student &Father Name Correction	
16	2022	No Backlog Letter	
17	2022	Issue of PC7CMM tatkal	

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

Revaluation/Recounting Results for I B.Tech I semester (R18) Examinations Nov-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
19Q61A0516	CHEMISTRY	151AF	19	11	No change	---
20Q61A0568	MATHEMATICS - I	151AA	18	10	No change	---
20Q61A0568	CHEMISTRY	151AF	19	28	C	4

Date: 05-12-2023

Controller of Examinations (UG)

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Avanthi Institute of Engg. & Tech
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

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Revaluation/Recounting Results for I B.Tech I semester (R22) Examinations Dec-2023

HT NO	SUBNAME	SUB CODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
22Q61A0465	APPLIED PHYSICS	181AA	25	9	No change	---
22Q61A0589	ENGINEERING CHEMISTRY	181AJ	23	9	No change	---
22Q61A05C5	ENGINEERING CHEMISTRY	181AJ	27	26	B	4
22Q61A05C5	MATRICES AND CALCULUS	181AN	28	12	No change	---

Date: 05-12-2023

Controller of Examinations (UG)

PRINCIPAL
Avanthi Institute of Engg. & Tech
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Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

Revaluation/Recounting Results for I B.Tech II semester (R16) Examinations Dec-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
17Q61A0505	MATHEMATICS - II	132AB	23	9	No change	---

Date: 05-12-2023

Controller of Examinations (UG)

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Avanthi Institute of Engg. & Tech.

Gunthapally (V), Abdullapurmet (Medl) R R Dis.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

Revaluation/Recounting Results for I B.Tech II semester (R18) Examinations Dec-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
19Q61A0447	MATHEMATICS - II	152AA	20	11	No change	---
19Q61A05A7	MATHEMATICS - II	152AA	23	11	No change	---
19Q61A05C9	MATHEMATICS - II	152AA	19	17	No change	---
19Q61A05E4	MATHEMATICS - II	152AA	22	17	No change	---
20Q61A0566	MATHEMATICS - II	152AA	23	14	No change	---
20Q61A0568	MATHEMATICS - II	152AA	24	14	No change	---
21Q61A6662	BASIC ELECTRICAL ENGINEERING	152AC	21	13	No change	---
20Q61A0568	APPLIED PHYSICS	152AE	21	11	No change	---
21Q61A6651	BASIC ELECTRICAL ENGINEERING	152AC	20	12	No change	---
21Q61A6662	CHEMISTRY	152AB	19	16	No change	---

Date: 05-12-2023

Controller of Examinations (UG)

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

Revaluation/Recounting Results for I B.Tech II semester (R22) Examinations Dec-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
22Q61A0416	ENGINEERING CHEMISTRY	182AH	28	9	No change	---
22Q61A0423	ENGINEERING CHEMISTRY	182AH	39	31	A	4
22Q61A0431	ENGINEERING CHEMISTRY	182AH	28	12	No change	---
22Q61A0442	ENGINEERING CHEMISTRY	182AH	32	2	No change	---
22Q61A0442	BASIC ELECTRICAL ENGINEERING	182AC	30	13	No change	---
22Q61A0442	ELECTRONIC DEVICES AND CIRCUITS	182AG	28	4	No change	----
22Q61A0562	ELECTRONIC DEVICES AND CIRCUITS	182AG	22	12	No change	
22Q61A05C5	ELECTRONIC DEVICES AND CIRCUITS	182AG	24	11	No change	---
22Q61A0465	ELECTRONIC DEVICES AND CIRCUITS	182AG	33	13	No change	
22Q61A05C6	ELECTRONIC DEVICES AND CIRCUITS	182AG	23	13	No change	
22Q61A6706	ELECTRONIC DEVICES AND CIRCUITS	182AG	22	0	No change	
22Q61A6723	ELECTRONIC DEVICES AND CIRCUITS	182AG	29	12	No change	---
22Q61A0442	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	34	8	No change	
22Q61A0508	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	34	10	No change	
22Q61A6723	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	37	5	No change	---
22Q61A0442	COMPUTER AIDED ENGINEERING GRAPHICS	182AV	27	3	No change	
22Q61A0508	APPLIED PHYSICS	182AB	26	11	No change	
22Q61A05A5	APPLIED PHYSICS	182AB	15	15	No change	
22Q61A05C6	APPLIED PHYSICS	182AB	25	12	No change	
22Q61A6706	APPLIED PHYSICS	182AB	32	7	No change	
22Q61A0562	ENGLISH FOR SKILL ENHANCEMENT	182AM	20	17	No change	
22Q61A0589	ENGLISH FOR SKILL ENHANCEMENT	182AM	26	17	No change	
22Q61A05A5	ENGLISH FOR SKILL ENHANCEMENT	182AM	15	18	No change	
22Q61A6716	ENGLISH FOR SKILL ENHANCEMENT	182AM	26	14	No change	---

Date: 05-12-2023

Controller of Examinations (UG)

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V). Abdullapurmet (M)) R.R.Dist

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY Kukatpally.

Revaluation/Recounting Results for II B.Tech II semester (R18) Examinations Dec-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
21Q61A0211	DIGITAL ELECTRONICS	154AN	19	5	No change	---
21Q61A0211	ELECTRICAL MACHINES - II	154AU	22	12	No change	---
21Q61A0211	LAPLACE TRANSFORMS, NUMERICAL METHODS & COMPLEX VARIABLES	154BG	24	0	No change	---
21Q61A0211	POWER SYSTEM - I	154BW	21	12	No change	---
21Q61A0454	LAPLACE TRANSFORMS, NUMERICAL METHODS & COMPLEX VARIABLES	154BG	23	15	B	3
21Q61A0525	OPERATING SYSTEMS	154BR	19	16	No change	---
21Q61A0551	OPERATING SYSTEMS	154BR	21	14	No change	---
21Q61A0544	OPERATING SYSTEMS	154BR	22	29	No change	---
21Q61A0566	OPERATING SYSTEMS	154BR	19	14	No change	---
21Q61A0579	OPERATING SYSTEMS	154BR	20	19	No change	---
21Q61A0597	OPERATING SYSTEMS	154BR	15	19	No change	---
21Q61A6614	OPERATING SYSTEMS	154BR	20	20	No change	---
21Q61A0574	OPERATING SYSTEMS	154BR	21	19	No change	---
21Q61A0579	JAVA PROGRAMMING	154BE	24	17	No change	---
21Q61A0560	JAVA PROGRAMMING	154BE	20	17	No change	---
21Q61A0589	JAVA PROGRAMMING	154BE	22	9	No change	---
21Q61A0544	JAVA PROGRAMMING	154BE	21	15	No change	---
21Q61A0551	JAVA PROGRAMMING	154BE	21	26	C	4
21Q61A0593	JAVA PROGRAMMING	154BE	24	26	B	4
21Q61A0597	JAVA PROGRAMMING	154BE	20	14	No change	---
21Q61A0551	DATABASE MANAGEMENT SYSTEMS	154AM	21	8	No change	---
21Q61A0593	DATABASE MANAGEMENT SYSTEMS	154AM	21	16	No change	---
21Q61A6644	DATABASE MANAGEMENT SYSTEMS	154AM	25	0	No change	---
21Q61A6646	DATABASE MANAGEMENT SYSTEMS	154AM	24	0	No change	---
21Q61A6651	DATABASE MANAGEMENT SYSTEMS	154AM	22	25	No change	---
21Q61A6653	DATABASE MANAGEMENT SYSTEMS	154AM	23	7	No change	---
21Q61A0587	DATABASE MANAGEMENT SYSTEMS	154AM	20	16	No change	---
21Q61A0597	DATABASE MANAGEMENT SYSTEMS	154AM	17	26	C	4
21Q61A6615	DATABASE MANAGEMENT SYSTEMS	154AM	24	16	No change	---
21Q61A0558	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	22	17	No change	---
21Q61A0566	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	22	12	No change	---
21Q61A0572	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	24	15	No change	---
21Q61A0587	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	20	14	No change	---
21Q61A0589	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	20	16	No change	---
21Q61A0597	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	21	13		
21Q61A0572	DISCRETE MATHEMATICS	154AQ	21	15	No change	---
21Q61A6619	SOFTWARE ENGINEERING	154CQ	22	21	No change	---
21Q61A6651	SOFTWARE ENGINEERING	154CQ	22	20	No change	---
21Q61A6653	SOFTWARE ENGINEERING	154CQ	23	22	No change	---
21Q61A6707	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	24	0	No change	---
21Q61A6712	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	23	39	B+	3
21Q61A6739	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	25	30	B	3
21Q61A6744	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	25	28	B	3
22Q65A0416	ELECTRONIC CIRCUIT ANALYSIS	154AW	22	14	No change	---

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22Q65A0416	LINEAR IC APPLICATIONS	154BH	21	16	No change	---

Date: 05-12-2023

Controller of Examinations (UG)

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Avanthi Institute of Engineering and Technology

Revaluation/Recounting Results for I B.Tech I semester (R18) Examinations Nov-2023

HT NO	SUBNAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
19Q61A0516	CHEMISTRY	151AF	19	11	No Change	---
20Q61A0568	MATHEMATICS - I	151AA	18	10	No Change	---
20Q61A0568	CHEMISTRY	151AF	19	28	C	4

Date: 05-12-2023

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Revaluation/Recounting Results for I B.Tech I semester (R22) Examinations Dec-2023

HT NO	SUB NAME	SUB CODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
22Q61A0465	APPLIED PHYSICS	181AA	25	9	No Change	---
22Q61A0589	ENGINEERING CHEMISTRY	181AJ	23	9	No Change	---
22Q61A05C5	ENGINEERING CHEMISTRY	181AJ	27	26	B	4
22Q61A05C5	MATRICES AND CALCULUS	181AN	28	12	No Change	---

Date: 05-12-2023

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Revaluation/Recounting Results for I B.Tech II semester (R16) Examinations Dec-2023

HT NO	SUB NAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
17Q61A0505	MATHEMATICS - II	132AB	23	9	No Change	---

Date: 05-12-2023

Controller of Examinations (UG)

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Revaluation/Recounting Results for I B.Tech II semester (R18) Examinations Dec-2023

HT NO	SUB NAME	SUBCODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
19Q61A0447	MATHEMATICS - II	152AA	20	11	No Change	---
19Q61A05A7	MATHEMATICS - II	152AA	23	11	No Change	---
19Q61A05C9	MATHEMATICS - II	152AA	19	17	No Change	---
19Q61A05E4	MATHEMATICS - II	152AA	22	17	No Change	---
20Q61A0566	MATHEMATICS - II	152AA	23	14	No Change	---
20Q61A0568	MATHEMATICS - II	152AA	24	14	No Change	---
21Q61A6662	BASIC ELECTRICAL ENGINEERING	152AC	21	13	No Change	---
20Q61A0568	APPLIED PHYSICS	152AE	21	11	No Change	---
21Q61A6651	BASIC ELECTRICAL ENGINEERING	152AC	20	12	No Change	---
21Q61A6662	CHEMISTRY	152AB	19	16	No Change	---

Date: 05-12-2023

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Revaluation/Recounting Results for I B.Tech II semester (R22) Examinations Dec-2023

HT NO	SUB NAME	SUBCODE	INTER NALS	EXTER NALS	GRADE STATUS	CREDITS
22Q61A0416	ENGINEERING CHEMISTRY	182AH	28	9	No change	---
22Q61A0423	ENGINEERING CHEMISTRY	182AH	39	31	A	4
22Q61A0431	ENGINEERING CHEMISTRY	182AH	28	12	No change	----
22Q61A0442	ENGINEERING CHEMISTRY	182AH	32	2	No change	----
22Q61A0442	BASIC ELECTRICAL ENGINEERING	182AC	30	13	No change	----
22Q61A0442	ELECTRONIC DEVICES AND CIRCUITS	182AG	28	4	No change	----
22Q61A0562	ELECTRONIC DEVICES AND CIRCUITS	182AG	22	12	No change	
22Q61A05C5	ELECTRONIC DEVICES AND CIRCUITS	182AG	24	11	No change	----
22Q61A0465	ELECTRONIC DEVICES AND CIRCUITS	182AG	33	13	No change	----
22Q61A05C6	ELECTRONIC DEVICES AND CIRCUITS	182AG	23	13	No change	----
22Q61A6706	ELECTRONIC DEVICES AND CIRCUITS	182AG	22	0	No change	
22Q61A6723	ELECTRONIC DEVICES AND CIRCUITS	182AG	29	12	No change	----
22Q61A0442	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	34	8	No change	----
22Q61A0508	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	34	10	No change	----
22Q61A6723	ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	182AR	37	5	No change	----
22Q61A0442	COMPUTER AIDED ENGINEERING GRAPHICS	182AV	27	3	No change	----
22Q61A0508	APPLIED PHYSICS	182AB	26	11	No change	----
22Q61A05A5	APPLIED PHYSICS	182AB	15	15	No change	----
22Q61A05C6	APPLIED PHYSICS	182AB	25	12	No change	----
22Q61A6706	APPLIED PHYSICS	182AB	32	7	No change	----
22Q61A0562	ENGLISH FOR SKILL ENHANCEMENT	182AM	20	17	No change	----
22Q61A0589	ENGLISH FOR SKILL ENHANCEMENT	182AM	26	17	No change	----
22Q61A05A5	ENGLISH FOR SKILL ENHANCEMENT	182AM	15	18	No change	----
22Q61A6716	ENGLISH FOR SKILL ENHANCEMENT	182AM	26	14	No change	----

Date: 05-12-2023

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Revaluation/Recounting Results for II B.Tech II semester (R18) Examinations Dec-2023

HT NO	SUB NAME	SUB CODE	INTERNALS	EXTERNALS	GRADE STATUS	CREDITS
21Q61A0211	DIGITAL ELECTRONICS	154AN	19	5	No change	---
21Q61A0211	ELECTRICAL MACHINES - II	154AU	22	12	No change	---
21Q61A0211	LAPLACE TRANSFORMS, NUMERICAL METHODS & COMPLEX VARIABLES	154BG	24	0	No change	---
21Q61A0211	POWER SYSTEM - I	154BW	21	12	No change	---
21Q61A0454	LAPLACE TRANSFORMS, NUMERICAL METHODS & COMPLEX VARIABLES	154BG	23	15	B	3
21Q61A0525	OPERATING SYSTEMS	154BR	19	16	No change	---
21Q61A0551	OPERATING SYSTEMS	154BR	21	14	No change	---
21Q61A0544	OPERATING SYSTEMS	154BR	22	29	No change	---
21Q61A0566	OPERATING SYSTEMS	154BR	19	14	No change	---
21Q61A0579	OPERATING SYSTEMS	154BR	20	19	No change	---
21Q61A0597	OPERATING SYSTEMS	154BR	15	19	No change	---
21Q61A6614	OPERATING SYSTEMS	154BR	20	20	No change	---
21Q61A0574	OPERATING SYSTEMS	154BR	21	19	No change	---
21Q61A0579	JAVA PROGRAMMING	154BE	24	17	No change	---
21Q61A0560	JAVA PROGRAMMING	154BE	20	17	No change	---
21Q61A0589	JAVA PROGRAMMING	154BE	22	9	No change	---
21Q61A0544	JAVA PROGRAMMING	154BE	21	15	No change	---
21Q61A0551	JAVA PROGRAMMING	154BE	21	26	C	4
21Q61A0593	JAVA PROGRAMMING	154BE	24	26	B	4
21Q61A0597	JAVA PROGRAMMING	154BE	20	14	No change	---
21Q61A0551	DATABASE MANAGEMENT SYSTEMS	154AM	21	8	No change	---
21Q61A0593	DATABASE MANAGEMENT SYSTEMS	154AM	21	16	No change	---
21Q61A6644	DATABASE MANAGEMENT SYSTEMS	154AM	25	0	No change	---
21Q61A6646	DATABASE MANAGEMENT SYSTEMS	154AM	24	0	No change	---
21Q61A6651	DATABASE MANAGEMENT SYSTEMS	154AM	22	25	No change	---
21Q61A6653	DATABASE MANAGEMENT SYSTEMS	154AM	23	7	No change	---
21Q61A0587	DATABASE MANAGEMENT SYSTEMS	154AM	20	16	No change	---
21Q61A0597	DATABASE MANAGEMENT SYSTEMS	154AM	17	26	C	4
21Q61A6615	DATABASE MANAGEMENT SYSTEMS	154AM	24	16	No change	---
21Q61A0558	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	22	17	No change	---
21Q61A0566	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	22	12	No change	---
21Q61A0572	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	24	15	No change	---
21Q61A0587	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	20	14	No change	---
21Q61A0589	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	20	16	No change	---
21Q61A0597	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	154AH	21	13		
21Q61A0572	DISCRETE MATHEMATICS	154AQ	21	15	No change	---
21Q61A6619	SOFTWARE ENGINEERING	154CQ	22	21	No change	---
21Q61A6651	SOFTWARE ENGINEERING	154CQ	22	20	No change	---
21Q61A6653	SOFTWARE ENGINEERING	154CQ	23	22	No change	---
21Q61A6707	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	24	0	No change	---
21Q61A6712	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	23	39	B+	3
21Q61A6739	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	25	30	B	3
21Q61A6744	FORMAL LANGUAGE AND AUTOMATA THEORY	154CK	25	28	B	3

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| 22Q65A0416 | ELECTRONIC CIRCUIT ANALYSIS | 154AW | 22 | 14 | No change | --- |
| 22Q65A0416 | LINEAR IC APPLICATIONS | 154BH | 21 | 16 | No change | --- |

Date: 05-12-2023

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Q6-Replacement of External Examiner for conduct of B.tech project viva voce exam- Request-Reg...

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Tue, Jun 27, 2023, 10:11 AM

With respect to the subject cited above, Dr D Srinivasa Rao who is appointed as External Examiner of conduct B.tech IV-II ECE SECTION-1 viva voce exam is not willing to conduct due to his hectic schedule, so kindly replace external examiner with Dr.N Ashok kumar, Associate Professor, KNR Inst. of Eng & Tech.

I'm attaching order copy with your reference..

Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v).
Abdullapurmet(M).
R.R.Dist.
Ph:9704755509.

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Q6_B.Tech_June_.

M

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NANDU SRIKANTH REDDY TRANSCRIPTS

Avanthi Principal <principal.avanthi@gmail.com>
to itfadmissions

Hai Good Afternoon...
please find below attachments
Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
Abdullapurmet(M).
R.R.Dist.
Ph:9704755509

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NANDU SRIKANT...

Avanthi Principal

PRINCIPAL
Avanthi

Q6-OBSERVER REPLACEMENT-REQUEST-REG

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Fri, Jan 20, 2023, 11:33 AM

Good Morning sir/madam

This is kindly brought to your notice Mrs **RAJPUROHIT SIRISHA** is suffering from viral fever so please replace observer with Mr **G Srinivas**, Assistant professor in the dept of ECE in our college.

Details of New Observer :

Name of the faculty : **G SRINIVAS**

PAN NUMBER : **BNMPG1488C**

MOBILE NUMBER : **9010214420**

MAIL ID : sri414china@gmail.com

Dr.G.RAMACHANDRA REDDY

Principal

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

Gunthapally(v),

Abdullapurmot(M)

R.R.Dist

Ph:9704755509

Avanthi Principal <principal.avanthi@gmail.com>
to a

3:15 PM (36 minutes ago)

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.... (V), Abdullapu...............

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Request letter for Students Industrial Visit.

Avanthi Principal <principal.avanthi@gmail.com>
to maxmidhar

Dear Mr.Laxmidhar Sir,

In continuation to our telephonic discussion for a visit by our Electrical & Electronics Engineering Students to your esteemed organisation ,we are here with mailing the necessary requisition letter for your kind perusal

we hope to accord your valuable permission at the earliest and your convenience.

S.Venkataramana
Ref :Mr.A.Srinivasa Rao
Controls & Schematics ,
Himayat Nagar Office.
Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
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.... (V), Abdullapu...

1/12/24, 3:57 PM

Q6-3-2 Sem registratio issing the following students hall tickets not received: 19Q6 03 - principal.avanthi@gmail.com - Gmail

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Q6-3-2 Sem registrations missing the following students hall tickets not received: 19Q61A0403   Inbox ×

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Wed, Feb 1, 2023 4:42 PM

Dear Sir/Madam

This is to bring to your kind notice that, at the time of Supply Re-Registration one of our student Registration is missing, so kindly consider our request and issue hall ticket. The details of student is as follows

Roll Number : 19Q61A0403   (3-2 Supply)

Student Name. A TEJA REDDY

Im attaching fee paid receipt please verify

Dr.G.RAMACHANDRA REDDY

Principal

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PRINCIPAL
Avanthi
(V), Abdullapu

Q6-22Q61A0592 -NOT RECEIVING HALLTICKET-REQUEST -REG..

Avanthi Principal <principal.avanthi@gmail.com>   Sun, Sep 3, 2023, 6:34 PM
to support.registrations

Good Evening sir/madam

With respect to the subject cited above, we are not receiving 1-2 Regular hall ticket of a particular number (i.e 22Q61A0592) so kindly issue hall ticket.
Here I'm attaching copy view registrations of 1-2 Regular CSE branch & student fee paid receipt at college level.

thank you...

Dr.G.RAMACHANDRA REDDY

Principal

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

Gunthapally(v).

Abdullapurmet(M).

R.R.Dist.

Ph:9704755509

PRINCIPAL
Avanthi ... of ... ch
...y (V), Abdullapu...

Q6-3-2 Sem registrations missing the following students hall tickets not received: 19Q61A05B7

Avanthi Principal <principal.avanthi@gmail.com>   Wed, Feb 1, 2023, 4:45 PM
to support.registrations

Dear Sir/Madam

This is to bring to your kind notice that, at the time of Supply Re-Registration one of our student Registration is missing, so kindly consider our request and issue hall ticket. The details of student is as follows

    Roll Number : 19Q61A0403   (3-2 Supply)

    Student Name: A TEJA REDDY

Im attaching fee paid receipt please verify

Dr.G.RAMACHANDRA REDDY

Principal

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

Gunthapally(v),

Abdullapurmet(M),

R.R.Dist.

Ph:9704755509

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Compose

Q6- PAPER NOT DECRYPTED-REQ-REG

Avanthi Principal <principal.avanthi@gmail.com>
to ceprsun

Tue, Jul 25, 2023, 10:24 AM

GOOD MORNING SIR/MADAM
Q6 COLLEGE - PAPER NOT DECRYPTED, PLEASE KINDLY RESOLVE ISSUE
Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
Abdullapurmet(M),
R.R.Dist
Ph 9704755509

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Q6 - Subject Registration mismatch

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Tue, Jul 4, 2023, 6:07 PM

Good Evening Sir/Madam,

With respect to subject cited above, for the roll number 20Q61A0539 , we uploaded attendance to the Software testing methodologies lab, but we wrongly registered as Scripting language lab. So kindly update registration as Software testing methodologies lab instead of Scripting language lab.

Thank Q sir/madam.

S support.registrations support.registrations <support.registrations@jntuh.ac.in>
to me

Wed, Jul 5, 2023, 9:58 AM

Keep the information on letterhead with the pr... ion.

S support.registratio...
support.registrations@jntuh...

Open detailed view

| Thank you. I will do that | OK, I w... |

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Q6 - Subject Registration mismatch-(20Q61A0539)

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Wed, Jul 5, 2023, 10:36 AM

Good Morning sir/madam

With respect to the subject cited above, for the roll number 20Q61A0539, we uploaded attendance to the Software testing methodologies lab(15631), but we wrongly registered as a Scripting language lab(15629). So kindly update registration as Software testing methodologies lab(15631)instead of Scripting language lab(15629).

Please find below attachments

Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
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R.R.Dist.
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-i (V), Abdullapur...

Q6 -REQUESTING FOR LATE REGISTRATION 20Q61A0583

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Sat, Jul 8, 2023, 4:59 PM

Dr G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
Abdullapurmet(M),
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Ph:9704755509
SIR/MADAM REQUESTING FOR LATE REGISTRATION 20Q61A0583 PLEASE ISSUE THE HALTIKET

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54 of 3,051

Avanthi Principal <principal.avanthi@gmail.com>
to ACE

DER. SIR/ MADEM Q6 AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY above students two members presents 16R35A0508,16R31A0585
Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
Abdullapurmet(M),
R.R.Dist.
Ph:9704755509

Mon, Jul 31, 2023, 4:45 PM

2 Attachments · Scanned by Gmail

Avanthi Principal <principal.avanthi@gmail.com>
to ACE

Mon, Jul 31, 2023, 4:55 PM

PRINCIPAL
Avanthi Institute of Engineering oh
Gunthapally (V), Abdullapurmet

Compose

107 of 3,051

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FREE REGISTRATION-- National Training Programme on Blockchain Technology Hyperledger Development" from 21-25 August 2023 at ESCI , Hyd   Inbox ×

ENGINEERING STAFF COLLEGE OF INDIA   Sun, Aug 6, 2023 1:56 PM

Dear Sir / Madam Greetings from ESCI !!! Engineering Staff College of India is Planning to Conduct the One Week Residential National Training program

Avanthi Principal principal.avanthi@gmail.com   Mon, Aug 7, 2023, 9:22 AM

to aiet.csehod, avanthiece2005, kranthi, Mechanical

Dr.G.RAMACHANDRA REDDY
Principal
AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY
Gunthapally(v),
Abdullapurmet(M),
R.R.Dist.
Ph 9704755509

Reply   Reply all   Forward   ☺

PRINCIPAL
Avanthi Institute of ...
...pally (V), Abdullapur...

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Q6-OBSERVER(CBT) REPLACEMENT-REQUEST-REG

Avanthi Principal <principal.avanthi@gmail.com>
to support.registrations

Mon, Oct 30, 2023, 10:12 AM

Good Morning sir/madam

This is kindly brought to your notice Mr **ESLAVATH RAVI** is met with an accident, so please replace the observer with Mr **ACHINI SHANKAR**,
Assistant professor in the dept of MECHANICAL in our college.

Details of New Observer :

Name of the faculty : **ACHINI SHANKAR**

PAN NUMBER : **BHIPA5509C**

MOBILE NUMBER : **8099246989**

MAIL ID : shankarshankar241@gmail.com

Dr.G.RAMACHANDRA REDDY

Principal

AVANTHI INSTITUTE OF ENGINEERING & TECHNOLOGY

Gunthapally(v),

Abdullapurmet(M)

R.R.Dist

Ph 9704755509

Avanthi Principal <principal.avanthi@gmail.com>
to a

3:06 PM (46 minutes ago)

PRINCIPAL
Avanthi Institute of
(V), Abdullapu

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85.

SUB: Gender correction in B.Tech Hall Ticket & Profile –Request –Reg

Dear Sir,

    With respect to the subject cited above name of **GADDAM SAHANA** bearing H.T.No 19Q61A0417, her gender was wrongly printed in Hall ticket as **MALE** instead of **FEMALE.**

    It is requested to correct the gender as **FEMALE.,**

Thanking you sir

Enclosure: 1) Payment Receipt   Yours Sincerely,

              2) B.Tech hall ticket

              3) SSC XEROX

                                          PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (M), R.R Dist.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S & Affiliated to JNTUH, Hyderabad)

NAAC "B++" Accredited Institute

Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512

www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85.

SUB: Gender correction in B.Tech Hall Ticket & Profile—Request—Reg

Dear Sir,

    With respect to the subject cited above name of **PINNAPU REDDY MYTHLI REDDY** bearing H.T No 19Q61A0441, her gender was wrongly printed in Hall ticket as **MALE** instead of **FEMALE.**

    It is requested to correct the gender as **FEMALE,**

Thanking you sir

Enclosure: 1) Payment Receipt   Yours Sincerely,

            2) B.Tech hall ticket

            3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Moj), R.R. Dist.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in   email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYD-85

SUB Photo updation in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

      With respect to the subject cited above name of AITHAGONI VENKATESH bearing H.T.No 19Q61A0481, His photo was not printed in Hall ticket & memo's Kindly update his photo in Hall ticket & memo's

                Thanking you sir

Enclosure 1) soft copy of photo with CD   yours faithfully,

             2) B Tech hall ticket

                                     PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Md), R.R. Dist.

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85.

SUB: Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of JANGEELI PRAVEEN KUMAR PATEL bearing H T No 19Q61A0206, is wrongly printed in Hall ticket & memo's as JANGEELA PRAVEEN KUMAR instead of JANGEELI PRAVEEN KUMAR PATEL, S/O JANGEELI RAVI KUMAR

It is requested to correct the name as JANGEELI PRAVEEN KUMAR PATEL.

S/O JANGEELI RAVI KUMAR

Thanking you sir

Enclosure   1) Payment Receipt   yours faithfully,

2) B Tech hall ticket & 4 memos

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg & Tech

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85.

SUB Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of VILAPARTHI S R S G N P PANTHESWARA SARMA bearing H.T No 20Q61A6709, is wrongly printed in Hall ticket & memo's as VILAPARTHI S R S G N P PANTHISWARA SARMA instead of VILAPARTHI S R S G N P PANTHESWARA SARMA, S/O VILAPARTHI SATISH

It is requested to correct the name as VILAPARTHI S R S G N P PANTHESWARA SARMA,

S/O VILAPARTHI SATISH.

Thanking you sir

Enclosure 1) Payment Receipt   Yours faithfully,

2) B Tech hall ticket & 1 memo

3) SSC XEROX

                                                                    PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally(V)Abdullapurmet(M) R.R Dist.

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aiets.ac.in /email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of THOTA NISHANTH bearing H T No 19Q61A05B9, is wrongly printed in Hall ticket & memo's as THOTA NISHATH instead of THOTA NISHANTH, S/O THOTA PRABHAKAR

It is requested to correct the name as THOTA NISHANTH,

S/O THOTA PRABHAKAR

Thanking you sir

Enclosure 1) Payment Receipt   Yours faithfully,

2) B Tech hall ticket & 4 memos

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg & Tech

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B Tech Marks Memos – Request –Reg

Dear Sir,

With respect to the subject cited above name of VANGALA SRINATH REDDY bearing H T No 19Q61A05E3, is wrongly printed in Marks memo's as VAGALA SRINATH REDDY instead of VANGALA SRINATH REDDY, S/O VANGALA RAVINDHAR REDDY.

It is requested to correct the name as VANGALA SRINATH REDDY.

S/O VANGALA RAVINDHAR REDDY

Thanking you sir

Enclosure 1) Demand Draft   Yours faithfully,

2) B Tech hall ticket & 2 memos

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (M), RR Dist.

Avanthi Institute of Engineering and Technology

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Father Name correction in B Tech Hall Ticket & Student profile –Request -Reg

Dear Sir,

With respect to the subject cited above name of MATTA SAI KUMAR bearing H T No 20Q65A0315, is wrongly printed in Hall ticket as MATTA SAI KUMAR instead of MATTA SAI KUMAR, S/O MATTA MALLESH.

It is requested to correct the name as MATTA SAI KUMAR.

S/O MATTA MALLESH.

Thanking you sir

Enclosure 1) Payment Receipt   yours faithfully,

2) B Tech hall ticket

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B Tech Hall Ticket –Request –Reg

Dear Sir,

With respect to the subject cited above name of JANGEELI PRAVEEN KUMAR PATEL bearing H T No 19Q61A0206, is wrongly printed in Hall ticket as JANGEELA PRAVEEN KUMAR instead of JANGEELI PRAVEEN KUMAR PATEL, S/O JANGEELI RAVI KUMAR

It is requested to correct the name as JANGEELI PRAVEEN KUMAR PATEL,

S/O JANGEELI RAVI KUMAR

Thanking you sir

Enclosure 1) Payment Receipt   yours faithfully,

2) B Tech hall ticket

3) SSC XEROX

                                                                                PRINCIPAL

PRINCIPAL

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

    With respect to the subject cited above name of RUDRAVELLY NAGASANTHOSHITHA bearing H.T No 19Q61A05B5, is wrongly printed in Hall ticket & memos as RUDRAVELLY NAGA SANTHOSHITHA instead of RUDRAVELLY NAGASANTHOSHITHA, D/O RUDRAVELLY SRINIVASULU.

    It is requested to correct the name as RUDRAVELLY NAGASANTHOSHITHA,

D/O RUDRAVELLY SRINIVASULU

            Thanking you sir

Enclosure: 1) Payment Receipt   Yours Sincerely,

          2) B Tech hall ticket & 06 memos

          3) SSC XEROX

                                          PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg & Tech
Gunthapally (v), Abdullapurmet (M), R.R. Dist.

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB. Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of BUSI VASUDEV YADAV bearing H T No 19Q61A0549, is wrongly printed in Hall ticket & memos as BUSI VASU DEV YADAV instead of BUSI VASUDEV YADAV, S/O BUSI SRINIVAS YADAV.

It is requested to correct the name as BUSI VASUDEV YADAV,

S/O BUSI SRINIVAS YADAV

Thanking you sir

Enclosure 1) Payment Receipt   Yours Sincerely,

2) B Tech hall ticket & 05 memos

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (M), R.R. Dist.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B.Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of KOLA ESHWAR bearing H T No 19Q61A0207, is wrongly printed in Hall ticket & memos as KOLA ESWAR instead of KOLA ESHWAR, S/O KOLA KRISHNA

It is requested to correct the name as KOLA ESHWAR,

S/O KOLA KRISHNA

Thanking you sir

Enclosure: 1) Payment Receipt

2) B Tech hall ticket & 08 memos

3) SSC XEROX

Yours Sincerely,

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aieta.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

With respect to the subject cited above name of SRIPATHI ABHIRAM REDDY bearing H T No 19Q61A05D5, is wrongly printed in Hall ticket & memos as S ABHIMRAM REDDY instead of SRIPATHI ABHIRAM REDDY, S/O S SHEKHAR REDDY

It is requested to correct the name as SRIPATHI ABHIRAM REDDY.

S/O S SHEKHAR REDDY

Thanking you sir

Enclosure 1) Payment Receipt   Yours Sincerely,

2) B Tech hall ticket & 1 memo

3) SSC XEROX

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunthapally (V, Abdullapurmet (M), R.R. Dist.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Name correction in B Tech Hall Ticket & Memos –Request –Reg

Dear Sir,

    With respect to the subject cited above name of BALUGURI PRASHANTH RAO bearing H T No 19Q61A0511, is wrongly printed in Hall ticket & memos as BALUGURI PRASANTH RAO instead of BALUGURI PRASHANTH RAO, S/O BALUGURI VENKAT RAO

    It is requested to correct the name as BALUGURI PRASHANTH RAO,

S/O BALUGURI VENKAT RAO.

               Thanking you sir

Enclosure 1) Payment Receipt   Yours Sincerely,

           2) B Tech hall ticket & 9 memo

           3) SSC XEROX

                                   PRINCIPAL

PRINCIPAL
Avanthi Institute of Engineering & Tech
Gunthapally (V), Abdullapurmet (M), R.R Dist.

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512
www.aiets.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To

The Controller of Examinations,

JNTUH,

Kukatpally,

HYDERABAD-85

SUB: Student Name & Father Name correction in B Tech Hall Ticket & Profile – Request – Reg

Dear Sir,

With respect to the subject cited above name of PINNAPUREDDY MYTHLI REDDY bearing H.T.No 19Q61A0441, is wrongly printed in Hall ticket as PINNIPUREDDY MYTHLI REDDY instead of PINNAPUREDDY MYTHLI REDDY, D/O PINNAPUREDDY JEIPAL REDDY

It is requested to correct the name as PINNAPUREDDY MYTHLI REDDY,

D/O PINNAPUREDDY JEIPAL REDDY

Thanking you sir

Enclosure: 1) Payment Receipt   yours faithfully,

2) B Tech hall ticket & 11 memos

3) SSC XEROX

PRINCIPAL

PRINCIPAL

NO BACKLOG LETTER

This is to certify that Mr./Ms. MOTAM NAVADEEP S/o MOTAM GANGAREDDY , bearing Hall Ticket No 19Q61A0436 B Tech (ELECRONICS AND COMMUNICATION ENGINEERING) Studied in Avanthi Institute of Engineering & Technology during 2019-2023 and completed all the courses without any backlogs and has met all the requirements for the award of B.Tech Degree.

His backlogs summary record is as follows.

Semester	Expected Passing year	Passing Year	No.of Re-appears	Re-appear Subjects
I year Isemester	Dec 2019	SEPT2021	3	Programming for problem solving
Iyear II semester	Nov 2020	July 2021	1	Basic electrical Engineering
	Nov 2020	June 2022	2	Chemistry
II year I semester	March 2021	Sept 2022	1	Network Analysis and Transmission lines
	March 2021	March 2022	2	Signals and Systems
II year II semester	AUG 2021	March 2022	1	Analog andDigital Communication
	AUG 2021	AUG 2022	2	Electromagnetic fields and Waves
	AUG 2021	March2022	1	Laplace Transforms, Numerical Methods and Complex Variables
III year II semester	AUG 2022	Feb 2023	1	Digital Signal Processing
	AUG 2022	Feb 2023	1	VLSI Design

EXAM BRANCH

PRINCIPAL

PRINCIPAL
Avanthi
Abdullapur

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512

www.aietg.ac.in   email principal.avanthi@gmail.com

NO BACKLOG LETTER

This is to certify that   Mr./Ms. VISLAVATH PAVAN KUMAR S/o VISLAVATH RAMULU ; bearing Hall Ticket No 20Q65A0306 B. Tech (MECHANICAL ENGINEERING) Studied in Avanthi Institute of Engineering & Technology during 2020-2023 and completed all the courses without any backlogs and has met all the requirements for the award of B.Tech Degree.

His backlogs summary record is as follows.

Semester	Expected Passing year	Passing Year	No.of Re-appears	Re-appear Subjects
II year I semester	March 2021	April 2023	3	PROBABILITY AND STATISTICS & COMPLEX VARIABLES
	March 2021	Sep 2021	1	THERMO DYNAMICS
	March 2021	March 2022	2	MECHANICS OF SOLIDS
II year II semester	AUG 2021	AUG 2021	NILL	NILL
III yearIsemester	Feb 2022	Aug2022	1	THERMAL ENGINEERING-II
III year IIsemester	Aug2022	Feb 2023	1	Unconventional Machining Processes
	Aug2022	Feb 2023	1	Finite Element Methods
IV year Isemester	JAN 2023	JULY 2023	1	REFRIGERATION AND AIR CONDITIONING
III year II semester	JULY 2023	JULY 2023	NILL	NILL

EXAM BRANCH

PRINCIPAL

PRINCIPAL
Avanthi ...
...napally (V), Abdullapur...

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Recg. By Govt. of T.S& Affiliated to JNTUH, Hyderabad)

NAAC "B++" Accredited Institute

Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512.

www.aietg.ac.in email: principal.avanthi@gmail.com

NO BACKLOG LETTER

This is to certify that   Mr./Ms. VISLAVATH PAVAN KUMAR S/o VISLAVATH RAMULU ;
bearing Hall Ticket No 20Q65A0306 B. Tech (MECHANICAL ENGINEERING) Studied in Avanthi
Institute of Engineering & Technology during 2020-2023 and completed all the courses without
any backlogs and has met all the requirements for the award of B.Tech Degree.

His backlogs summary record is as follows.

Semester	Expected Passing year	Passing Year	No.of Re-appears	Re-appear Subjects
II year I semester	March 2021	April 2023	3	PROBABILITY AND STATISTICS & COMPLEX VARIABLES
	March 2021	Sep 2021	1	THERMO DYNAMICS
	March 2021	March 2022	2	MECHANICS OF SOLIDS
II year II semester	AUG 2021	AUG 2021	NILL	NILL
III yearIsemester	Feb 2022	Aug2022	1	THERMAL ENGINEERING-II
III year IIsemester	Aug2022	Feb 2023	1	Unconventional Machining Processes
	Aug2022	Feb 2023	1	Finite Element Methods
IV year Isemester	JAN 2023	JULY 2023	1	REFRIGERATION AND AIR CONDITIONING
III year II semester	JULY 2023	JULY 2023	NILL	NILL

EXAM BRANCH

PRINCIPAL

PRINCIPAL

Avanthi Institute of Engg. & Tech

Gunthapally (V), Abdullapurmet (Mdl) R.R.Dist

Avanthi Institute of Engineering and Technology

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad

Sub: Issue of PC and CMM of K SURESH bearing roll number   18D95A0304, MECH branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of K SURESH bearing roll number 18D95A0304, MECH branch under tatkal directly to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
of Eng. & Tech
Abdullapurmet (md), RR Dist

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Recg By Govt. of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512
www.aieng.ac.in email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **M NAGESHWAR RAO** bearing roll number
19Q61E0053, MBA branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

M NAGESHWAR RAO bearing roll number **19Q61E0053**, MBA branch under tatkal directly
to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (M), R.R Dist.

Avanthi Institute of Engineering and Technology

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **NALUMASU VAISHNAVI** bearing roll number **19Q65A0407**, ECE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

NALUMASU VAISHNAVI bearing roll number **19Q65A0407**, ECE branch under tatkal directly to the candidate. She has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
in of Engg. & Tech
Abdullapurmet (mug), R.R. Dist.

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Recg By Govt of T.S & Affiliated to JNTUH, Hyderabad)
NAAC "B++" Accredited Institute
Gunthapally (V), Abdullapurmet(M), RR Dist, Near Ramoji Film City, Hyderabad -501512
www.aietg.ac.in email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **K HARIKA** bearing roll number **19Q65A0427**, ECE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

K HARIKA bearing roll number **19Q65A0427**, ECE branch under tatkal directly to the candidate. She has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
of Engg. & Tech
Abdullapurmet (Mdl), R.R Dist,

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **GYARA AVINASH,** bearing roll number **19Q65A0306,** MECH branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

GYARA AVINASH bearing roll number **19Q65A0306,** MECH branch under tatkal directly to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL.

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (mel), R.R. Dist.

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad

Sub: Issue of PC and CMM of **R VAMSHI KRISHNA**, bearing roll number **19Q65A0232**, EEE branch by tatkal.

Dear Sir,

　　　　We have no objection for the university issuing the PC and CMM of

R VAMSHI KRISHNA bearing roll number **19Q65A0232**, EEE branch under tatkal directly to the candidate. He has cleared all college dues.

　　　　　　　　Thanking You.

PRINCIPAL

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of III-II Supply and IV-I Regular memo's of **PILLI SRI SAI RASHMITHA** bearing roll number **19Q61A05B0**, CSE branch by tatkal.

Dear Sir,

We have no objection for the university issuing III-II Supply and IV-I Regular memo's of

PILLI SRI SAI RASHMITHA bearing roll number **19Q61A05B0**, CSE branch under tatkal

directly to the candidate. She has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **K SRIKANTH** bearing roll number **19Q61A0463**, ECE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

K SRIKANTH bearing roll number **19Q61A0463**, ECE branch under tatkal directly to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aietg.ac.in email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation.
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **PUNNA SAI MOUNIKA** bearing roll number **19Q61A0595**,
CSE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

PUNNA SAI MOUNIKA bearing roll number **19Q61A0595**, CSE branch under tatkal directly
to the candidate. She has cleared all college dues

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (v), Abdullapurmet (Mdl), R.R. Dist.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in email: principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **NUKAM REDDY SUNEELA** bearing roll number **19Q61A0594**, CSE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

NUKAM REDDY SUNEELA bearing roll number **19Q61A0594**, CSE branch under tatkal directly to the candidate. She has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Instit. te of Engg. & Tech
Gunthapally (V), Abdullapurmet (Md), R.R. Dist.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in email principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **SALLA SAIKIRAN REDDY** bearing roll number
19Q61A05B6, CSE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

SALLA SAIKIRAN REDDY bearing roll number **19Q61A05B6**, CSE branch under tatkal
directly to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Man), R.R. Dist.

Avanthi Institute of Engineering and Technology

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

HYDERABAD - 500 085, TELANGANA STATE, INDIA.

College: Q6 - AIET, HAYATHNAGAR

Sl. No. PC 05135290

31672000911

PROVISIONAL CERTIFICATE

21672000901

HT No: 20Q65A0315

This is to certify that Mr. MATTA SAI KUMAR

S/o MATTA MALLESH passed

B. Tech. MECHANICAL ENGINEERING

degree examination of this University, held in July, 2023 and that

he was placed in FIRST CLASS.

He has satisfied all the requirements for the award of the degree.

Hyderabad - T.S.

Controller of Examinations

REGISTRAR

Date: July 27. 2023

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
HYDERABAD - 500 085, TELANGANA STATE, INDIA.

CONSOLIDATED MEMO OF MARKS GRADES AND CREDITS

C5138293 **B.Tech. MECHANICAL ENGINEERING**

Name : MATTA SAI KUMAR

Hall Ticket No : 20Q65A0315

Serial. No. : 21672000901

Year of Admission : 2020-2021

Name of the College : Q6-AIET,HAYATHNAGAR

Month & Year of Final Exam : July,2023

Class Awarded : FIRST CLASS

S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS	S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS
	I SEMESTER			**I YEAR**		**II SEMESTER**			

DIRECT ADMISSION INTO II-YEAR UNDER LATERAL ENTRY SCHEME

S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS	S.No	SUBJECT TITLE	GRADE POINT	GRADE	CREDITS
	I SEMESTER			**II YEAR**		**II SEMESTER**			
1	PROBABILITY AND STATISTICS & COMPLEX VARIABLES	6	B	4.0	1	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	5	C	3.0
2	PRODUCTION TECHNOLOGY	5	C	3.0	2	KINEMATICS OF MACHINERY	5	C	4.0
3	MECHANICS OF SOLIDS	5	C	4.0	3	INSTRUMENTATION AND CONTROL SYSTEMS	6	B	3.0
4	MATERIAL SCIENCE AND METALLURGY	6	B	3.0	4	THERMAL ENGINEERING - I	6	B	4.0
5	THERMODYNAMICS	6	B	4.0	5	FLUID MECHANICS AND HYDRAULIC MACHINES	6	B	4.0
6	PRODUCTION TECHNOLOGY LAB	10	O	1.0	6	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING L/	10	O	1.0
7	MACHINE DRAWING PRACTICE	10	O	1.0	7	INSTRUMENTATION AND CONTROL SYSTEMS LAB	10	O	1.0
8	MATERIAL SCIENCE AND MECHANICS OF SOLIDS LAB	10	O	1.0	8	FLUID MECHANICS AND HYDRAULIC MACHINES LAB	10	O	1.0
9	CONSTITUTION OF INDIA *	-	-	0.0	9	GENDER SENSITIZATION LAB *	-	-	0.0
	I SEMESTER			**III YEAR**		**II SEMESTER**			
1	THERMAL ENGINEERING - II	5	C	3.0	1	HEAT TRANSFER	5	C	4.0
2	BUSINESS ECONOMICS & FINANCIAL ANALYSIS	5	C	3.0	2	HEAT TRANSFER LAB	7	B+	1.0
3	DESIGN OF MACHINE MEMBERS - I	5	C	3.0	3	ADVANCED COMMUNICATION SKILLS LAB	9	A+	1.0
4	METROLOGY & MACHINE TOOLS	6	B	3.0	4	DESIGN OF MACHINE MEMBERS - II	5	C	3.0
5	OPERATIONS RESEARCH	5	C	3.0	5	CAD & CAM	6	B	3.0
6	DYNAMICS OF MACHINERY	5	C	4.0	6	FINITE ELEMENT METHODS	5	C	3.0
7	THERMAL ENGINEERING LAB	9	A+	1.0	7	CAD & CAM LAB	9	A+	1.0
8	KINEMATICS & DYNAMICS LAB	9	A+	1.0	8	FUNDAMENTALS OF MANAGEMENT FOR ENGINEERS	6	B	3.0
9	METROLOGY & MACHINE TOOLS LAB	9	A+	1.0	9	UNCONVENTIONAL MACHINING PROCESSES	7	B+	3.0
10	INTELLECTUAL PROPERTY RIGHTS *	-	-	0.0	10	ENVIRONMENTAL SCIENCE *	-	-	0.0
11	CYBER SECURITY *	-	-	0.0	11	ARTIFICIAL INTELLIGENCE *	-	-	0.0
	I SEMESTER			**IV YEAR**		**II SEMESTER**			
1	INDUSTRIAL ORIENTED MINI PROJECT / SUMMER INTERNSI	9	A+	2.0	1	INDUSTRIAL MANAGEMENT	6	B	3.0
2	POWER PLANT ENGINEERING	7	B+	3.0	2	TOTAL QUALITY MANAGEMENT	7	B+	3.0
3	REFRIGERATION & AIR CONDITIONING	7	B+	3.0	3	INDUSTRIAL ROBOTICS	8	A	3.0
4	TURBO MACHINERY	5	C	3.0	4	PROJECT STAGE - II	10	O	7.0
5	PRINCIPLES OF ENTREPRENEURSHIP	7	B+	3.0					
6	ADDITIVE MANUFACTURING	8	A	3.0					
7	PROJECT STAGE - I	9	A+	3.0					
8	SEMINAR	9	A+	1.0					

Number of Credits registered and secured are: 123

Aggregate Marks/CGPA Secured : 6.57

Date of Issue : July 26, 2023

(* Mandatory course passed for award of degree)

(* Courses registered but not counted for calculation of aggregate)

PRINCIPAL

CONTROLLER OF EXAMINATIONS

Ah indicates 'ABSENT'

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email. principal.avanthi@gmail.com

COLLEGE CODE: Q6

To,
The Director of Evaluation,
JNTUH, Kukatpally,
Hyderabad.

Sub: Issue of PC and CMM of **GUDURI PRASHANTH KUMAR** bearing roll number **19Q61A0461**, ECE branch by tatkal.

Dear Sir,

We have no objection for the university issuing the PC and CMM of

GUDURI PRASHANTH KUMAR bearing roll number **19Q61A0461**, ECE branch under tatkal directly to the candidate. He has cleared all college dues.

Thanking You.

PRINCIPAL

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl), R.R. Dist.

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List of Internal Grievances

S. No	Academic Year	Nature of Issue/Grievance	Date of Issue Raised	Date of Issue solved
1	2023-24	Seeking Permission for Transport	19-08-2024	19-08-2024
2	2023-24	Seeking permission for Exam	20-08-2024	20-08-2024
3	2023-24	Seeking permission for Exam	28-08-2023	28-08-2023
4	2023-24	Seeking permission for Exam	14-04-2023	14-04-2023
5	2023-24	Seeking permission for Exam	13-07-2023	13-07-2023
6	2023-24	Seeking permission for ID card	08-08-2024	08-08-2024
7	2023-24	Seeking permission for ID card	08-08-2024	08-08-2024
8	2023-24	Seeking permission for formal dress	23-08-2024	23-08-2024
9	2023-24	Seeking permission for duplicate Hall ticket	25-09-2023	25-09-2023
10	2023-24	Seeking permission for formal dress	16-07-2023	16-07-2023

PRINCIPAL

Avanthi Institute of Engg. & Tech

Gunthapally (V), Abdullapurmet (Mdl) R.R.Dist

Avanthi Institute of Engineering and Technology

Date: 19-08-2024

To,

The respected principle sir,

AVIH,

Gurthapally.

        Sub: Seeking permission to travel through

        college bus

I am V.Jaya shankar holding hallticket number 2286SA0305. Sir, I was suffering with health issue (Backbone pain) so, I cant travel through my own transport so, please grant me permission to travel travel through college bus.

        Thanking you sir.

                V.Jaya shankar

                2286SA0305

                AVIH, mechanical.

Date: 20-08-2024

TO
The Principal,
AVIH,
Gunthapally.

SUB :- Requesting Permission To Conduct exam

Respected Sir,

I am D. Vijender from mechanical Department with Roll No:- 22Q65A0309. Writing This Letter as a Request To grant me Conduct exam Because I was Late By 30 minutes Due To Some Unfavourable Conditions. So here You Understand and Grant me Permission.

Thanking You Sir,

Your Obidrently

D. Vijender
MECH-(III-II)

22Q65A0301

PRINCIPAL
Avanthi Institute of Engineering & Technology
Gunthapally.

Date:
23-08-2024

TO
The principal,
Avanthi college (AVIH),
Gunthapally

(SUB: Requesting permission to enter class)

Respected sir,

I am V.Ajay kumar from mechanical department with roll no. 21Q6IA030H. writing this letter as a request to grant me permission to class because I am not in college uniform due to some unfavourable situation. so, hope you understand and grant me permission.

Thanking you sir.

your obidiently
V Ajay kumar
MECH
III $\underline{v}$
21Q6IA030H.

19-07-2024

To,

The Principal,

Avanthi college (AVHT)

Gurllapally.

sub Request for allowing to class without
college uniform.

Respected sir,

I am R. Premsai from mechanical department
with Roll No. 32965A0306, requesting letter as a
to grant me permission to class because I am
not in college uniform due to some situation
so. hope you understand and give me the

permission.

Thanking you sir,

Your faithfully

R. Premsai

Mechanical

22965A0306

PRINCIPAL
Avanthi Institute of Engineering & Technology

To the principle
Avanthi College engineering
Gunthapally

    Subjected request for a new id card

Sir my name is Saurabh singh for IIIrd year
mechanical student I miss the id card so i want
the new id card because on next month the
external exam please issue the new id
card

Your sincerely
Saurabh singh
mechanical engineering
2106L40309

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aictg.ac.in email: principal.avanthi@gmail.com

Cir./Exam Section/001   Date: 27-10-2023

CIRCULAR

The undersigned is organizing a meeting for all the members of Examinations and Evaluation Committee on 23 February at 2.30 pm in the college Conference hall to discuss the following points mentioned in the agenda.

Agenda:

- Discussion on conduction of II-II, III-II, IV-II internal and external examinations.
- Examination Circulars issued by JNTU-H.
- Consideration of late comers for Internal Examination.
- Re-Conducting Mid Examination.
- Issue of duplicate Hall ticket for External Examination.
- Any other points with the permission of the chairman.

PRINCIPAL
Avanthi Institute of Engg. & Tec
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dis.

Copy to:

1. Principal office
2. All the members of Examinations and Evaluation Committee.
3. Office

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

Minutes of Meeting

Examinations and Evaluation Committee meeting is conducted for the Academic year 2023-24 on 22 February at 2:30 p.m. in the Conference Hall to look into the complaints lodged by the students and to resolve such issues in the college.

Review of Action Taken:

Committee issued instructions to the concerned departments.

- **Item 1**-Discussion on conduction of II-II, III-II, IV-II internal and external examinations.

  Resolution-In the wake of examinations, it was informed to all the faculty members to ensure that the students are completely prepared with their laboratory records, assignment books in time and to make students thorough to write their exams well.

- **Item 2**- Examination Circulars issued by JNTU-H.

  Resolution-All the faculty members are informed to display on the notice board the timetables and the notifications issued by the university from time to time. The faculty members were also informed to take necessary steps for the smooth conduct of the examinations.

- **Item 3**- Re-Conducting of Mid Examination.

  Resolution-Resolution As per the instructions given by the university, the members of the committee were against the violation of University norms and strictly informed the faculty members not to re-conduct the Internal Exams under any circumstances.

- **Item 4**-Consideration of late comers for Internal Examination.

  Resolution-The College adheres to the university guidelines regarding the conduct of examinations. No late comer will be allowed to appear for the Internal examinations.

  Item 5-Issue of duplicate Hall ticket for External Examination.

- **Resolution**-It was decided by the committee members and the same was conveyed to the examination cell to issue duplicate hall tickets to the needed student(s).

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (M) R.R.Dist.

Avanthi Institute of Engineering and Technology

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www.aietg.ac.in email: principal.avanthi@gmail.com

CONSTITUTION OF EXAMINATION COMMITTEE

Avanthi Institute of Engineering and Technology has constituted an examination committee to conduct examinations. The committee focuses on making policy decisions in regard to organizing and holding examinations, improving systems of examinations, moderations etc. and also preparing a schedule of internal examinations.

The examination committee deals with all the issues in relation to examinations and hears the complaints received pertaining to any subject arising out of the conduct of examinations and decides the course of action.

Examination committee has been constituted for the academic years 2023-24 as follows:

S.NO	FACULTY NAME	DESIGNATION	RESPONSIBILITY
1	Dr.G.Rama Chandra Reedy	Principal	Chair Person
2	M. Satishkumar	Controller of Examinations	Convener
3	M. Venkateshwarlu	Deputy controller of Examinations	Member
4	Dr.Kotteshailaja	Associate Professor	Member
5	Dr.N.Ramana Reddy	Associate Professor	Member
6	Dr. S. Kishore Reddy	Associate Professor	Member
7	Dr.T.Kranthi Kumar	Associate Professor	Member
8	Dr.Y.RameshBabu	Associate Professor	Member

PRINCIPAL

Avanthi Institute of Engg. & Tech

Gunthapally (V), Abdullapurmet (Mdl) R.R.Dist

Avanthi Institute of Engineering and Technology

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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www.aietg.ac.in email: principal.avanthi@gmail.com

Functions of the Committee:

1. Collecting question banks for all the subjects within 2 weeks from the commencement of semester.
2. Computation of total requirement of invigilators for each examination.
3. Seating arrangements for internal and external examinations.
4. Conduct of external examinations (theory and practical)
5. Arranging dispatch of Answer Scripts bundles to JNTUH University.
6. Arranging required number of subject experts for evaluation at JNTUH University.
7. Downloading of question papers from university /external experts and printing, ensuring confidentiality.
8. Preparation of Result Analysis.
9. To interact with University for exam related works.
10. Preparation of remuneration bills of invigilators, examiners (Internals as well as External).
11. To review from time to time, the results of end semester examinations and forward reports thereon to the Principal.

PRINCIPAL.

Avanthi Institute of Engg. & Tech

Gurtihapally (V), Abdullapurmet (Mdl) R.R.Dis.

Copy to:

COE for kind information

All HOD, s

All the committee members

AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

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www.aietg.ac.in email: principal.avanthi@gmail.com

Functions of the Committee:

1. Collecting question banks for all the subjects within 2 weeks from the commencement of semester.
2. Computation of total requirement of invigilators for each examination.
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10. Preparation of remuneration bills of invigilators, examiners (Internals as well as External).
11. To review from time to time, the results of end semester examinations and forward reports thereon to the Principal.

PRINCIPAL

Copy to:
COE for kind information
All HOD, s
All the committee members

Avanthi Institute of Engg. & Tech
Gurtihapally (V), Abdullapurmet (Mdl) R R.Dis.

Avanthi Institute of Engineering and Technology

Examination
Reform
Policy

November 2018

[signature]

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurtihapally (V), Abdullapurnet (Mdl) R.R.Dis

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070

Examination Reform Policy

November 2018

[signature]

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gunthapally (V), Abdullapurmet (Mdl) R.R.Dis.

MESSAGE

AICTE is taking a multi-pronged approach to recalibrate the technical education in the country, to provide competent professionals. Challenged by keeping the pace of education with the advancements in the technology and industry needs, AICTE has pushed reforms by way of a model curriculum for various engineering disciplines, providing good quality self-learning content through MOOCs, framing a policy for the training of technical teachers 3-week student induction program and enunciating guidelines for the mandatory internship for student among others. Continuing with the streak, AICTE has now come out with an Examination Reform Policy, which would not only improve the quality of technical education in general but also examine the effectiveness of earlier initiatives of AICTE and also those on the anvil.

Evaluation, grading and certification in our system rest on examinations which play an important role in the progression of a learner on the learning path. The examinations not only indicate whether the desired learning outcomes have been achieved but also assess the level of achievements against benchmarks. Thus, examinations serve as checkpoints for both the learner and the external world, allowing appropriate certification to be issued reflecting the proficiency of an individual operating in socio-economic spheres.

This policy comes at a time when knowledge is freely available for creating resources, opportunities for more knowledge, which requires skill of higher order beyond remembering and comprehension. This policy intends to push the evaluation notches up on the Bloom's taxonomy and examine the learner for higher order cognitive skills to drive critical thinking, creativity and problem solving which have to be the attributes of any technical professional. It is hoped that this will also force necessary alignment in the teaching-learning processes on one hand to the bridging of the gap between theory and practicals on the other and prepare students for innovation and creativity.

We request the technical institutions and universities in the country to adopt this examination reform policy. To facilitate this, model question papers and question banks will be developed/ shared through AICTE website. With a view to impart momentum to this much-awaited reform, AICTE shall be conducting a series of training workshops for faculty, across the country.

We thank members of the committee led by Prof. Shettar, Vice-Chancellor, KLE University for developing the policy which will go a long way to enhance the employability ratio and also enable youngsters to become problem-solvers, innovators and job creators. We especially thank MHRD for providing guidance and support throughout the process of creation of this Policy.

(Prof. Anil D. Sahasrabudhe)

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PREFACE

Globalisation of the world economy and higher education are driving profound changes in engineering education system. Worldwide adaptation of Outcome-Based Education (OBE) framework and enhanced focus on higher-order learning and professional skills necessitates paradigm shift in traditional practices of curriculum design, education delivery and assessment. In recent years, worldwide sweeping reforms are being undertaken to bring about essential changes in engineering education in terms of what to teach (content) and how to teach (knowledge delivery) and how to assess (student learning).

Examinations/student assessments play a very important role in deciding the quality of education. The academic quality of examinations (question papers) in Indian engineering education system has been a matter of concern from a long time. This report attempts to bring out recommendations for reforms in examination system to meet challenges of emerging engineering education landscape.

The recommendations are presented in four sections. Beginning in Section-1, the most important drivers for examination reforms in Indian engineering education system are discussed. Section-2 brings out strategies to be adopted to align assessment with the desired student learning outcomes. A two-step method is proposed for mapping the examination questions with course outcomes. Section-3 highlights the necessity of designing question papers to test higher order abilities and skills. Application of blooms taxonomy framework to create an optimal structure of examination papers to test the different cognitive skills is discussed in detail. Challenge of assessing higher order abilities and professional skills through traditional examination system is brought out in Section-4. Several educational experiences and assessment opportunities are identified to overcome the challenges. Appendices contain the supplement material that is helpful for Universities/ Colleges to implement recommendations.

At this juncture, reforms in examinations are critical for the improvement of the quality and relevance of Indian engineering education. It is hoped that the Report will be of use to Universities and Colleges to bring out the much-needed change. The cooperation received from AICTE officials in bringing out the Report is gratefully acknowledged.

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Prof. Rama Krishna Challa

Prof. Sanjay Agarwal

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ACKNOWLEDGEMENT

The development of an outcome based Examination Reform Policy for technical education is a result of thoughtful deliberations, involving dedicated and specialized experts. This Policy has been framed to meet the expectations of an academically challenging environment, develop problem-solving skills by students, aligning with current global standards and to enrich the students learning to make them self-enablers and/or match job requirements on successful completion of their degree.

The performance-based new-age reforms in the examination will benefit each student for preparing him/her for success in the knowledge society. This will create proper mapping between program outcomes and assessment tools that lead to the accurate and reliable measurement of attainment of outcomes of the students. In short, the Policy focuses on providing the ability of student to understand the subject and apply the knowledge to real world problems.

We are thankful to the members of the committee Prof. Ashok S. Shettar, Prof. Rama Krishna Challa, Prof. Sanjay Agarwal and Prof. Upendra Pandel who were devotedly committed towards framing this Policy. We thank them for identifying Competencies and Performance Indicators (PIs) with Program Outcomes (POs); Sample Questions for all six levels of Bloom's Taxonomy; Model Question Papers for end semester examinations based on Bloom's Taxonomy; and Sample Scoring Rubrics for communication (written & oral), and assessment of design projects and semester mini projects.

Special thanks and gratitude to Prof. Anil D. Sahasrabdhe, Chairman; Prof M.P. Poonia, Vice Chairman and Prof. A.P. Mittal, Member Secretary, AICTE who have been pivotal in developing this Policy and encouraging throughout the process.

I appreciate the officers and officials of Policy & Academic Planning Bureau for their contribution and support in the exercise that has led to this Policy.

I also sincerely thank all officers and officials of AICTE, who have contributed in one way or other for the development of this Policy.

Thanking all once again and seeking continued support and also feedback on the Policy.

(Prof. Rajive Kumar)
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PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurtihapally (V). Abdullapurmet (Mdl) R.R.Dis.

TABLE OF CONTENTS

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurthapally (V), Abdullapurmet (Mdl) R.R.Dis

INTRODUCTION

Globalisation of the world economy and higher education are driving profound changes in engineering education system. There is a continuing need to dynamically adapt to these changes, to ensure that we remain competitive and can respond effectively to the challenges of globalisation. Future engineering graduates not only need to be knowledgeable in his/her discipline but also needs a new set of soft, professional skills and competencies [1].

In recent years, there have been essential changes in engineering education in terms of what to teach (content) and how to teach (knowledge delivery) and how to assess (student learning).

AICTE has already taken initiation to come out with model curriculum for engineering programs. The digital initiatives of MHRD and AICTE have made available very large number of MOOC courses through SWAYAM, that can help the colleges and teachers to adopt innovative methodologies in the delivery of course.

The present report focusses on the recommendations for reforms in examinations (assessment of student) in the context of emerging landscape of engineering education.

Examinations/student assessments play a very important role in deciding the quality of education. They must not only assess student's achievements (and grades) but also measure whether the desired learning outcomes have been achieved. The achievement of objectives and program outcomes are crucial and needs to be proven through accurate and reliable assessments.

The academic quality of examinations (question papers) in Indian engineering education system has been a matter of concern from a long time. It is widely acknowledged that "assessment drives learning", what and how students learn depends to a major extent on how they think they will be assessed [2]. The question papers that require simple memory recall will not ensure deep, meaningful learning. High expectations for learning motivate the students to rise to the occasion. The assessment (examination) must embed those high expectations to ensure that the learner is motivated to attain them.

Considering the above imperatives, it is clear that reforms in Examinations are critical for improvement of the quality of Indian engineering education. The most important drivers for reforms in examination system of Indian engineering education are:

PRINCIPAL
Avanthi Institute of Engg. & Tech
Guntihapally (V), Abdullapurmet (Mdl) R.R.Dist.

1. Adaptation of Outcome-Based Education Framework

Outcome-based education (OBE)- a performance-based approach has emerged as a major reform model in the global engineering education scenario [3]. The country that wants to be a signatory member of a multinational agreement for the mutual recognition of engineering degrees, i.e. the Washington Accord (WA) must implement OBE. This will be an endorsement that the engineering education system has demonstrated a strong, long-term commitment to quality assurance in producing engineers ready for industry practice in the international scene. Being signatory to the Washington Accord, Indian accreditation agency 'National Board of Accreditation (NBA)' has made it mandatory for engineering institutions to adapt OBE framework for their curriculum design, delivery and assessment. In OBE framework, the educational outcomes of a program are clearly and unambiguously specified. These determine the curriculum content and its organization, the teaching methods and strategies and the assessment process.

Though Indian Universities and Colleges have started adapting OBE framework for their engineering programs, the focus is limited to the curriculum design part, i.e. connecting curriculum components to the program outcomes. Very little attention is being given for connecting examination questions/assessment tools to the program outcomes. The absence of proper mapping between program outcomes and assessment tools lead to the inaccurate and unreliable measurement of attainment of outcomes by the students. This missing connect creates a big gap in the effective adaptation of OBE framework, making the whole exercise futile.

2. Importance of Higher-order Abilities and Professional Skills

In the present examination system, memorization occupies a dominant place. The recall of factual knowledge, though essential to any examination, is only one of several major abilities to be demonstrated by the graduates. The assessment process must also test higher level skills viz. ability to apply knowledge, solve complex problems, analyse, synthesise and design. Further, professional skills like the ability to communicate, work in teams, lifelong learning have become important elements for employability of the graduates [4]. It is important that the examinations also give appropriate weightage to the assessment of these higher-level skills and professional competencies.

Keeping in view of the above challenges and looking at some of the worldwide best practices in assessment, the present report comes up with several recommendations that can be used by Universities/ Colleges to design their assessment strategies.

PRINCIPAL
Avanthi Institute of Engg. & Tech
Gurimapally (V), Abdullapurmet (Mdl) R.R.Dist.

ASSESSMENT STRATEGY
FOR OUTCOME-BASED EDUCATION

1. Mapping Program Outcomes to Assessment (Examinations)

Graduate attributes (GAs) articulate the generic abilities to be looked for in a graduate of any undergraduate degree program. They form the Program Outcomes (POs) that reflect the skills, knowledge and abilities of graduates regardless of the field of study. This does not mean that POs are necessarily independent of disciplinary knowledge --rather, these qualities may be developed in various disciplinary contexts.

In outcome-based education, a "design down" process is employed which moves from POs to Course Outcomes (COs) and outcomes for individual learning experiences. Outcomes at each successive level need to be aligned with, and contribute to, the program outcomes.

Courses are the building blocks of a program. Teaching strategies, learning activities, assessments and resources should all be designed and organized to help students achieve the learning outcomes at the course level. In the assessment activities, students demonstrate their level of achievement of the course learning outcomes. In a constructively aligned program, the courses are carefully coordinated to ensure steady development or scaffolding from the introduction to mastery of the learning outcomes, leading to achievement of the intended POs. For the effectiveness of the program, the achievement of POs is crucial which needs to be proven through accurate and reliable assessments.

2. Two-step Process for Bringing Clarity to POs

POs give useful guidance at the program level for the curriculum design, delivery and assessment of student learning. However, they represent fairly high-level generic goals that are not directly measurable. Real observability and measurability of the POs at course level is very difficult. To connect high-level learning outcomes (POs) with course content, course outcomes and assessment, there is a necessity to bring further clarity and specificity to the program outcomes [5]. This can be achieved through the following two-step process of identifying Competencies and Performance Indicators (PI).

(1) Identify Competencies to be attained: For each PO define competencies --different abilities implied by program outcome statement that would generally require different assessment measures. This helps us to create a shared understanding of the competencies we want students to achieve. They serve as an intermediate step to the creation of measurable indicators.

Example:
Program Outcome (Attribute 3)

Design:
PO3: Design/Development of Solutions: Design solutions for complex engineering problems and

13

design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

Competencies

1. Demonstrate an ability to define a complex, open-ended problem in engineering terms.

2. Demonstrate an ability to generate a diverse set of alternative design solutions.

3. Demonstrate an ability to select the optimal design scheme for further development.

4. Demonstrate an ability to advance an engineering design to the defined end state.

(2) Define Performance Indicators: For each of the competencies identified, define performance Indicators (PIs) that are explicit statements of expectations of the student learning. They can act as measuring tools in assessment to understand the extent of attainment of outcomes. They can also be designed to determine the appropriate achievement level or competency of each indicator so that instructors can target and students can achieve the acceptable level of proficiency.

Example:

For the Competency -2

Demonstrate an ability to generate a diverse set of alternative design solutions

Performance Indicators:

1. Apply formal idea generation tools to develop multiple engineering design solutions

2. Build models, prototypes, algorithms to develop a diverse set of design solutions

3. Identify the functional and non-functional criteria for evaluation of alternate design solutions.

It should be noted that, when we consider the program outcome, it looks like, it can be achieved only in the Capstone project. But if we consider the competencies and performance indicators, we start seeing the opportunities of addressing them (and hence PO) in various courses of the program.

Once the above process is completed for the program, the assessment of COs for all the courses is designed by connecting assessment questions (used in various assessment tools) to the PIs. By following this process, where examination questions map with PIs, we get clarity and better resolution for the assessment of COs and POs. The pictorial representation of the process is given in Fig. 1
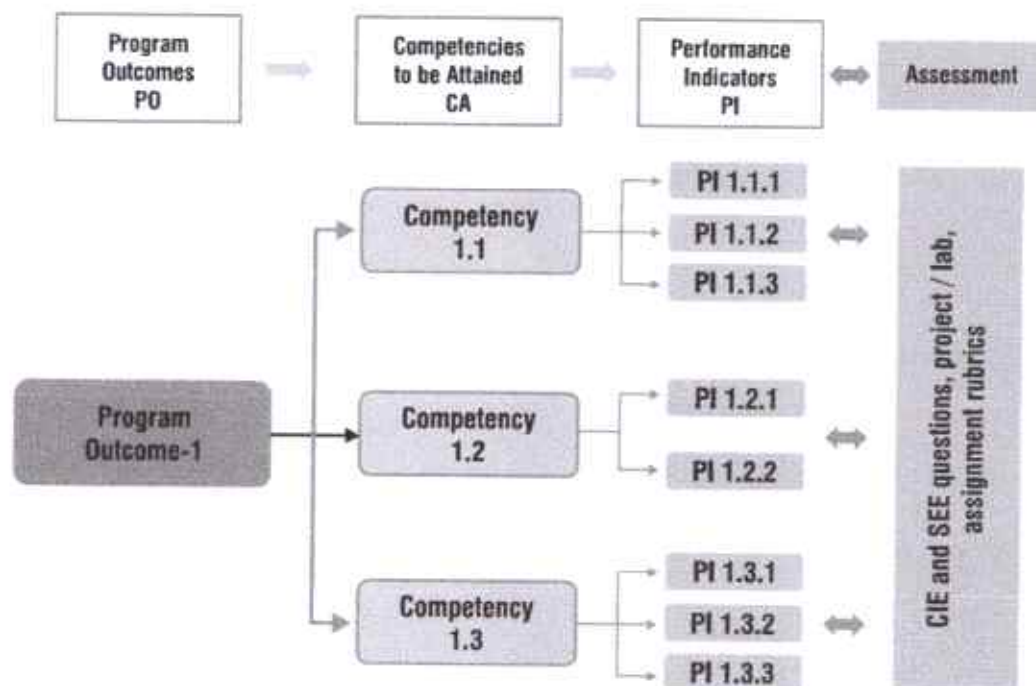
Fig. 1: Connecting POs to Assessment

3. Program Outcomes – Competencies – Performance Indicators

Following table gives the suggestive list of competencies and associated performance indicators for each of the PO in Mechanical Engineering Program.

PO 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation for the solution of complex engineering problems.

	Competency		Indicators
1.1	Demonstrate competence in mathematical modelling	1.1.1	Apply mathematical techniques such as calculus, linear algebra, and statistics to solve problems
		1.1.2	Apply advanced mathematical techniques to model and solve mechanical engineering problems
1.2	Demonstrate competence in basic sciences	1.2.1	Apply laws of natural science to an engineering problem
1.3	Demonstrate competence in engineering fundamentals	1.3.1	Apply fundamental engineering concepts to solve engineering problems
1.4	Demonstrate competence in specialized engineering knowledge to the program	1.4.1	Apply Mechanical engineering concepts to solve engineering problems.

PO 2: Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

	Competency		Indicators
2.1	Demonstrate an ability to identify and formulate complex engineering problem	2.1.1	Articulate problem statements and identify objectives
		2.1.2	Identify engineering systems, variables, and parameters to solve the problems
		2.1.3	Identify the mathematical, engineering and other relevant knowledge that applies to a given problem

PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gurtihapally (V), Abdullapurmet (Mdl) R R.Dis.

2.2	Demonstrate an ability to formulate a solution plan and methodology for an engineering problem	2.2.1	Reframe complex problems into interconnected sub-problems
		2.2.2	Identify, assemble and evaluate information and resources.
		2.2.3	Identify existing processes/solution methods for solving the problem, including forming justified approximations and assumptions
		2.2.4	Compare and contrast alternative solution processes to select the best process.
2.3	Demonstrate an ability to formulate and interpret a model	2.3.1	Combine scientific principles and engineering concepts to formulate model/s (mathematical or otherwise) of a system or process that is appropriate in terms of applicability and required accuracy.
		2.3.2	Identify assumptions (mathematical and physical) necessary to allow modeling of a system at the level of accuracy required.
2.4	Demonstrate an ability to execute a solution process and analyze results	2.4.1	Apply engineering mathematics and computations to solve mathematical models
		2.4.2	Produce and validate results through skilful use of contemporary engineering tools and models
		2.4.3	Identify sources of error in the solution process, and limitations of the solution.
		2.4.4	Extract desired understanding and conclusions consistent with objectives and limitations of the analysis

PO 3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

	Competency		Indicators
3.1	Demonstrate an ability to define a complex/ open-ended problem in engineering terms	3.1.1	Recognize that need analysis is key to good problem definition
		3.1.2	Elicit and document, engineering requirements from stakeholders
		3.1.3	Synthesize engineering requirements from a review of the state-of-the-art
		3.1.4	Extract engineering requirements from relevant engineering Codes and Standards such as ASME, ASTM, BIS, ISO and ASHRAE.
		3.1.5	Explore and synthesize engineering requirements considering health, safety risks, environmental, cultural and societal issues
		3.1.6	Determine design objectives, functional requirements and arrive at specifications
3.2	Demonstrate an ability to generate a diverse set of alternative design solutions	3.2.1	Apply formal idea generation tools to develop multiple engineering design solutions
		3.2.2	Build models/prototypes to develop a diverse set of design solutions
		3.2.3	Identify suitable criteria for the evaluation of alternate design solutions
3.3	Demonstrate an ability to select an optimal design scheme for further development	3.3.1	Apply formal decision-making tools to select optimal engineering design solutions for further development
		3.3.2	Consult with domain experts and stakeholders to select candidate engineering design solution for further development
3.4	Demonstrate an ability to advance an engineering design to defined end state	3.4.1	Refine a conceptual design into a detailed design within the existing constraints (of the resources)
		3.4.2	Generate information through appropriate tests to improve or revise the design

PO 4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

	Competency		Indicators
4.1	Demonstrate an ability to conduct investigations of technical issues consistent with their level of knowledge and understanding	4.1.1	Define a problem, its scope and importance for purposes of investigation
		4.1.2	Examine the relevant methods, tools and techniques of experiment design, system calibration, data acquisition, analysis and presentation
		4.1.3	Apply appropriate instrumentation and/or software tools to make measurements of physical quantities
		4.1.4	Establish a relationship between measured data and underlying physical principles.

4.2	Demonstrate an ability to design experiments to solve open-ended problems	4.2.1	Design and develop an experimental approach, specify appropriate equipment and procedures
		4.2.2	Understand the importance of the statistical design of experiments and choose an appropriate experimental design plan based on the study objectives
4.3	Demonstrate an ability to analyze data and reach a valid conclusion	4.3.1	Use appropriate procedures, tools and techniques to conduct experiments and collect data
		4.3.2	Analyze data for trends and correlations, stating possible errors and limitations
		4.3.3	Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
		4.3.4	Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

	Competency		Indicators
5.1	Demonstrate an ability to identify/ create modern engineering tools, techniques and resources	5.1.1	Identify modern engineering tools such as computer-aided drafting, modeling and analysis; techniques and resources for engineering activities
		5.1.2	Create/adapt/modify/extend tools and techniques to solve engineering problems
5.2	Demonstrate an ability to select and apply discipline-specific tools, techniques and resources	5.2.1	Identify the strengths and limitations of tools for (i) acquiring information, (ii) modeling and simulating, (iii) monitoring system performance, and (iv) creating engineering designs.
		5.2.2	Demonstrate proficiency in using discipline-specific tools
5.3	Demonstrate an ability to evaluate the suitability and limitations of tools used to solve an engineering problem	5.3.1	Discuss limitations and validate tools, techniques and resources
		5.3.2	Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use.

PO 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

	Competency		Indicators
6.1	Demonstrate an ability to describe engineering roles in a broader context, e.g. pertaining to the environment, health, safety, legal and public welfare	6.1.1	Identify and describe various engineering roles; particularly as pertains to protection of the public and public interest at the global, regional and local level
6.2	Demonstrate an understanding of professional engineering regulations, legislation and standards	6.2.1	Interpret legislation, regulations, codes, and standards relevant to your discipline and explain its contribution to the protection of the public

PO 7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and the need for sustainable development.

	Competency		Indicators
7.1	Demonstrate an understanding of the impact of engineering and industrial practices on social, environmental and in economic contexts	7.1.1	Identify risks/impacts in the life-cycle of an engineering product or activity
		7.1.2	Understand the relationship between the technical, socio-economic and environmental dimensions of sustainability

| 7.2 | Demonstrate an ability to apply principles of sustainable design and development | 7.2.1 | Describe management techniques for sustainable development |
| | | 7.2.2 | Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline |

PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice:

	Competency		Indicators
8.1	Demonstrate an ability to recognize ethical dilemmas	8.1.1	Identify situations of unethical professional conduct and propose ethical alternatives
8.2	Demonstrate an ability to apply the Code of Ethics	8.2.1	Identify tenets of the ASME professional code of ethics
		8.2.2	Examine and apply moral & ethical principles to known case studies

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

	Competency		Indicators
9.1	Demonstrate an ability to form a team and define a role for each member	9.1.1	Recognize a variety of working and learning preferences; appreciate the value of diversity on a team
		9.1.2	Implement the norms of practice (e.g. rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal.
9.2	Demonstrate effective individual and team operations– communication, problem-solving, conflict resolution and leadership skills	9.2.1	Demonstrate effective communication, problem-solving, conflict resolution and leadership skills
		9.2.2	Treat other team members respectfully
		9.2.3	Listen to other members
		9.2.4	Maintain composure in difficult situations
9.3	Demonstrate success in a team-based project	9.3.1	Present results as a team, with smooth integration of contributions from all individual efforts

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

	Competency		Indicators
10.1	Demonstrate an ability to comprehend technical literature and document project work	10.1.1	Read, understand and interpret technical and non-technical information
		10.1.2	Produce clear, well-constructed, and well-supported written engineering documents
		10.1.3	Create flow in a document or presentation - a logical progression of ideas so that the main point is clear
10.2	Demonstrate competence in listening, speaking, and presentation	10.2.1	Listen to and comprehend information, instructions, and viewpoints of others
		10.2.2	Deliver effective oral presentations to technical and non-technical audiences
10.3	Demonstrate the ability to integrate different modes of communication	10.3.1	Create engineering-standard figures, reports and drawings to complement writing and presentations
		10.3.2	Use a variety of media effectively to convey a message in a document or a presentation

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Gunthapally (V), Abdullapurmet (Mdl) R R.Dis,

PO 11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

	Competency	Indicators
11.1	Demonstrate an ability to evaluate the economic and financial performance of an engineering activity	11.1.1 Describe various economic and financial costs/benefits of an engineering activity 11.1.2 Analyze different forms of financial statements to evaluate the financial status of an engineering project
11.2	Demonstrate an ability to compare and contrast the costs/benefits of alternate proposals for an engineering activity	11.2.1 Analyze and select the most appropriate proposal based on economic and financial considerations.
11.3	Demonstrate an ability to plan/manage an engineering activity within time and budget constraints	11.3.1 Identify the tasks required to complete an engineering activity, and the resources required to complete the tasks. 11.3.2 Use project management tools to schedule an engineering project, so it is completed on time and on budget.

PO 12: Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

	Competency	Indicators
12.1	Demonstrate an ability to identify gaps in knowledge and a strategy to close these gaps	12.1.1 Describe the rationale for the requirement for continuing professional development 12.1.2 Identify deficiencies or gaps in knowledge and demonstrate an ability to source information to close this gap
12.2	Demonstrate an ability to identify changing trends in engineering knowledge and practice	12.2.1 Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current 12.2.2 Recognize the need and be able to clearly explain why it is vitally important to keep current regarding new developments in your field
12.3	Demonstrate an ability to identify and access sources for new information	12.3.1 Source and comprehend technical literature and other credible sources of information 12.3.2 Analyze sourced technical and popular information for feasibility, viability, sustainability, etc.

The above table can be used for most of the engineering programs. However, for Computer Science & Engineering/ Information Technology programs it requires some modifications.

A suggestive list of competencies and associated performance indicators for Computer Science & Engineering/ Information Technology **Programs is given in Appendix- A.**

PRINCIPAL
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Gurtihaoally (V). Abdullapurmet (Mdl) R.R.Dis.

For improving the structure and quality of assessment in various engineering programs following points need to be remembered:

1. In Indian engineering education system, written examinations play a major role in assessing the learning and awarding of grades to the student. Universities and colleges give highest weightage to the outcomes of the written examinations in overall grading. Questions raised in the examination/test papers play an important role in defining the level of learning the student is expected to achieve in the courses and hence in the program. Since assessment drives learning, the design of question papers needs to go beyond the mere test of memory recall. They also need to test higher-order abilities and skills.

2. Written examinations assess a very limited range of outcomes and cognitive levels. Particularly in the courses, where course outcomes (COs) cover a broad range of expectations, written examinations alone will not be sufficient to make valid judgements about student learning. A wide range of assessment methods (e.g., term papers, open-ended problem-solving assignments, course/lab project rubrics, portfolios etc.) need to be employed to ensure that assessment methods match with learning outcomes.

3. It is advisable to formulate assessment plans for each of the course in the program that brings clarity to the following:

   a. Alignment of assessment with learning outcome of the course

   b. Level of learning (cognitive) student is expected to achieve

   c. Assessment method to be adapted

The method to align examination questions/assessment to COs and hence POs was discussed in the section-1. The following sections discuss the application of Bloom's taxonomy framework to create the optimal structure of examination papers to test the different cognitive skills.

1. Bloom's Taxonomy for Assessment Design

Bloom's Taxonomy provides an important framework to not only design curriculum and teaching methodologies but also to design appropriate examination questions belonging to various cognitive levels. Bloom's Taxonomy of Educational Objectives developed in 1956 by Benjamin Bloom [6] was widely accepted by educators for curriculum design and assessment. In 2001, Anderson and Krathwohl modified Bloom's taxonomy [7] to make it relevant to the present-day requirements. It attempts to divide learning into three types of domains (cognitive, affective, and behavioural) and then defines the level of performance for each domain. Conscious efforts to map the curriculum and assessment to these levels can help the programs to aim for higher-level abilities which go beyond remembering or understanding, and require application, analysis, evaluation or creation.

Revised Bloom's taxonomy in the cognitive domain includes thinking, knowledge, and application of knowledge. It is a popular framework in engineering education to structure the assessment as it characterizes complexity and higher-order abilities. It identifies six levels of competencies within the cognitive domain (Fig. 2) which are appropriate for the purposes of engineering educators.

According to revised Bloom's taxonomy, the levels in the cognitive domain are as follows:

Level	Descriptor	Level of attainment
1	Remembering	Recalling from the memory of the previously learned material
2	Understanding	Explaining ideas or concepts
3	Applying	Using the information in another familiar situation
4	Analysing	Breaking information into the part to explore understandings and relationships
5	Evaluating	Justifying a decision or course of action
6	Creating	Generating new ideas, products or new ways of viewing things
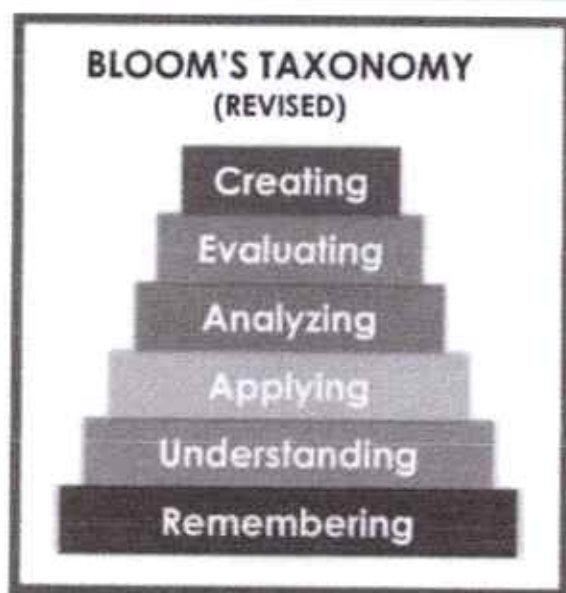
Fig. 2: Revised Bloom's Taxonomy

Bloom's taxonomy is hierarchical, meaning that learning at the higher level requires that skills at a lower level are attained.

2. Action Verbs for Assessment

Choice of action verbs in constructing assessment questions is important to consider. Quite often, the action verbs are indicators of the complexity (level) of the question. Over time, educators have come up with a taxonomy of measurable verbs corresponding to each of the Bloom's cognitive levels [8]. These verbs help us not only to describe and classify observable knowledge, skills and abilities but also to frame the examination or assignment questions that are appropriate to the level we are trying to assess.

Suggestive list of skills/ competencies to be demonstrated at each of the Bloom's level and corresponding cues/ verbs for the examination/ test questions is given below:

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Level	Skill Demonstrated	Question cues / Verbs for tests
1. Remember	• Ability to recall of information like facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria • ability to recall methodology and procedures, abstractions, principles, and theories in the field • knowledge of dates, events, places • mastery of subject matter	list, define, tell, describe, recite, recall, identify, show, label, tabulate, quote, name, who, when, where
2. Understand	• understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss
3. Apply	• use information • use methods, concepts, laws, theories in new situations • solve problems using required skills or knowledge • Demonstrating correct usage of a method or procedure	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify
4. Analyse	• break down a complex problem into parts • Identify the relationships and interaction between the different parts of a complex problem • identify the missing information, sometimes the redundant information and the contradictory information, if any	classify, outline, break down, categorize, analyze, diagram, illustrate, infer, select
5. Evaluate	• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • use of definite criteria for judgments	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate
6. Create	• use old ideas to create new ones • Combine parts to make (new) whole, • generalize from given facts • relate knowledge from several areas • predict, draw conclusions	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate

It may be noted that some of the verbs in the above table are associated with multiple Bloom's Taxonomy levels. These verbs are actions that could apply to different activities. We need to keep in mind that it's the skill, action or activity we need students to demonstrate that will determine the contextual meaning of the verb used in the assessment question.

3. Assessment Planning

While using Bloom's taxonomy framework in planning and designing of assessment of student learning, following points need to be considered:

1. Normally the first three learning levels; remembering, understanding and applying and to some extent fourth level analysing are assessed in the Continuous Internal Evaluation (CIE) and Semester End

Examinations (SEE), where students are given a limited amount of time. And abilities; analysis, evaluation and creation can be assessed in extended course works or in a variety of student works like course projects, mini/ minor projects, internship experience and final year projects.
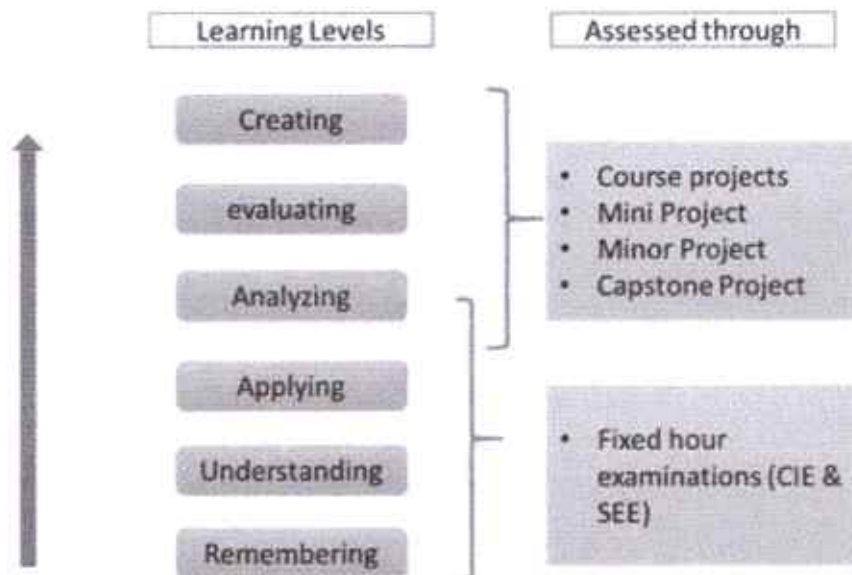
Fig. 3: Assessment methods for different Bloom's cognitive levels

2. Before adopting this framework for reforms in examination system of a University/Institution, it is worthwhile to study the present pattern of assessment in each of the course in the program to gain insight about:

    a) Alignment of assessment questions with course learning outcomes

    b) Whether all the learning outcomes are tested; sometimes some learning outcomes are over tested at the expense of others which may be not tested at all.

    c) Overall weightage in the assessment, to each of Bloom's learning levels

    d) Assessment methods used to adequately assess the content and desired learning outcomes

    Based on the study, improvement priorities for each of the above factors need to be arrived at. The reform process needs to be well planned and implemented through institutional strategy and communicated to all stakeholders particularly to the students.

3. A good and reasonable examination paper must consist of various difficulty levels to accommodate the different capabilities of students. Bloom's taxonomy framework helps the faculty to set examination papers that are well balanced, testing the different cognitive skills without a tilt towards a tough or easy paper perception. If the present examination questions are more focused towards lower cognitive skills, conscious efforts need to be made to bring in application skills or higher cognitive skills in the assessment. It is recommended that at institution/ University level, upper limit need to be arrived for lower order skills (for example, no more than 40% weightage for knowledge-oriented questions). It is important to note that, as nature of every course is different, the weightage for different cognitive levels in the question papers can also vary from course to course.

    • Examples of typical questions for each of Bloom's cognitive level are given in Appendix-B

    • Model Question Papers are given in Appendix- C

ASSESSING HIGHER-ORDER ABILITIES & PROFESSIONAL SKILLS

In the 21st century, professional skills (also known as soft skills, generic skills or transferable skills) have emerged as important attributes of a graduate engineer. Studies show that Industry/ employers around the world value these abilities more than the disciplinary knowledge. This is also reflected in the NBA graduate attributes wherein six out of twelve attributes belong to this category, viz. (1) communication, (2) teamwork, (3) understanding ethics and professionalism, (4) understanding global and societal contexts, (5) lifelong learning, and (6) knowledge of contemporary issues. Further, higher-order cognitive abilities like critical thinking, problem-solving and making informed decisions are also crucial for a graduate to succeed in the emerging world. Though the employers consider these professional skills and higher abilities as important, students are weak in them. The main challenge surrounding them is that they are difficult to assess through existing conventional examination system.

1. Innovative Educational Experiences to Teach and Assess

One of the main obstacles in addressing these outcomes is the limitation of educational experience we create within our engineering programs. Most of the coursework in our programs are oriented towards teaching technical knowledge and skills; hence, the assessment is limited to those abilities. However, acquiring the professional outcomes may not result simply from participation in a particular class or set of classes. Rather, these outcomes are more often acquired or influenced through sources both in and outside the classroom [4].

To address these challenges, comprehensive reforms are needed in the way we design our curriculum, student learning experiences and assessment of the outcomes. Worldwide several attempts are being made to address these challenges. Following are the few educational experiences that are recommended to teach and assess professional outcomes and higher-order cognitive abilities:

- Course projects
- Open-ended experiments in laboratories
- Project-based learning modules
- MOOCs
- Co-Curricular experiences
- Mini / Minor projects
- Final year projects
- Internship experiences
- E-portfolios of student works

2. Using Scoring Rubrics as Assessment Tool

To evaluate the above, student works for attainment of course outcomes and hence POs, it is of

utmost importance to have reliable methods / proper assessment tools. Rubrics provide a powerful tool for assessment and grading of student work. They can also serve as a transparent and inspiring guide to learning. Rubrics are scoring, or grading tool used to measure a students' performance and learning across a set of criteria and objectives. Rubrics communicate to students (and to other markers) your expectations in the assessment, and what you consider important.

There are three components within rubrics namely (i) criteria / performance Indicator: the aspects of performance that will be assessed, (ii) descriptors: characteristics that are associated with each dimension, and (iii) scale/level of performance: a rating scale that defines students' level of mastery within each criterion.

Fig. 4: Examples of Rubrics (Accessed from Rogers 2010)

3. Open-Book Examinations

In the earlier sections it was noted that the traditional written examinations have a significant weakness that they tend to encourage rote learning and more superficial application of knowledge. This deficiency can be overcome by "open-book examination". Open-book examination is similar to time constrained written examinations but designed in a way that allows students to refer to either class notes, textbooks, or other approved material while answering questions. They are particularly useful if you want to test skills in application, analysis and evaluation, i.e. higher levels of Bloom's taxonomy. However, in a program, the courses or the curriculum areas that are best suited to an open-book exam are to be carefully chosen.

Advantages of open-book examinations
1. Less demanding on memory and hence less stressful
2. Questions can emphasise more on problem-solving, application of knowledge and higher-order thinking rather than simple recall of facts.
3. Assessment questions can reflect real-life situations that require comprehension, information retrieval and synthesising skills of the students to solve.

Designing a good open-book examination
- Set questions that require students to do things with the information available to them, rather than to merely locate the correct information and then summarize or rewrite it.
- The questions in open-book exam must take advantage of the format, and give more weightage

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to the application of knowledge, critical thinking and use of resources for solving real complex engineering problems.

- As the nature of questions is complex, it is to be ensured that the students get enough time. Open book test questions typically take longer time compared to traditional examinations. It is advisable either to set less number of questions that encompass 2 or 3 concepts taught or allocate longer duration of time for the examinations.

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Appendix-A

PO 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialisation for the solution of complex engineering problems.

	Competency		Indicators
1.2	Demonstrate competence in mathematical modelling	1.2.1	Apply the knowledge of discrete structures, linear algebra, statistics and numerical techniques to solve problems
		1.2.2	Apply the concepts of probability, statistics and queuing theory in modeling of computer-based system, data and network protocols.
1.5	Demonstrate competence in basic sciences	1.5.1	Apply laws of natural science to an engineering problem
1.6	Demonstrate competence in engineering fundamentals	1.6.1	Apply engineering fundamentals
1.7	Demonstrate competence in specialized engineering knowledge to the program	1.7.1	Apply theory and principles of computer science and engineering to solve an engineering problem

PO 2: Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

	Competency		Indicators
2.1	Demonstrate an ability to identify and formulate complex engineering problem	2.5.1	Evaluate problem statements and identifies objectives
		2.5.2	Identify processes/modules/algorithms of a computer-based system and parameters to solve a problem
		2.5.3	Identify mathematical algorithmic knowledge that applies to a given problem
2.6	Demonstrate an ability to formulate a solution plan and methodology for an engineering problem	2.6.1	Reframe the computer-based system into interconnected subsystems
		2.6.2	Identify functionalities and computing resources.
		2.6.3	Identify existing solution/methods to solve the problem, including forming justified approximations and assumptions
		2.6.4	Compare and contrast alternative solution/methods to select the best methods
		2.6.5	Compare and contrast alternative solution processes to select the best process.
2.7	Demonstrate an ability to formulate and interpret a model	2.7.1	Able to apply computer engineering principles to formulate modules of a system with required applicability and performance.
		2.7.2	Identify design constraints for required performance criteria.
2.8	Demonstrate an ability to execute a solution process and analyze results	2.8.1	Applies engineering mathematics to implement the solution.
		2.8.2	Analyze and interpret the results using contemporary tools.
		2.8.3	Identify the limitations of the solution and sources/causes.
		2.8.4	Arrive at conclusions with respect to the objectives.

PO 3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.

	Competency		Indicators
3.5	Demonstrate an ability to define a complex/ open-ended problem in engineering terms	3.5.1	Able to define a precise problem statement with objectives and scope.
		3.5.2	Able to identify and document system requirements from stake- holders.
		3.5.3	Able to review state-of-the-art literature to synthesize system requirements.
		3.5.4	Able to choose appropriate quality attributes as defined by ISO/IEC/IEEE standard.
		3.5.5	Explore and synthesize system requirements from larger social and professional concerns.
		3.5.6	Able to develop software requirement specifications (SRS).
3.6	Demonstrate an ability to generate a diverse set of alternative design solutions	3.6.1	Able to explore design alternatives.
		3.6.2	Able to produce a variety of potential design solutions suited to meet functional requirements.
		3.6.3	Identify suitable non-functional requirements for evaluation of alternate design solutions.
3.7	Demonstrate an ability to select optimal design scheme for further development	3.7.1	Able to perform systematic evaluation of the degree to which several design concepts meet the criteria.
		3.7.2	Consult with domain experts and stakeholders to select candidate engineering design solution for further development
3.8	Demonstrate an ability to advance an engineering design to defined end state	3.8.1	Able to refine architecture design into a detailed design within the existing constraints.
		3.8.2	Able to implement and integrate the modules.
		3.8.3	Able to verify the functionalities and validate the design.

PO 4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

	Competency		Indicators
4.4	Demonstrate an ability to conduct investigations of technical issues consistent with their level of knowledge and understanding	4.4.1	Define a problem for purposes of investigation, its scope and importance
		4.4.2	Able to choose appropriate procedure/algorithm, dataset and test cases.
		4.4.3	Able to choose appropriate hardware/software tools to conduct the experiment.
4.5	Demonstrate an ability to design experiments to solve open-ended problems	4.5.1	Design and develop appropriate procedures/methodologies based on the study objectives
4.6	Demonstrate an ability to analyze data and reach a valid conclusion	4.6.1	Use appropriate procedures, tools and techniques to collect and analyze data
		4.6.2	Critically analyze data for trends and correlations, stating possible errors and limitations
		4.6.3	Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
		4.6.4	Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions

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PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

	Competency		Indicators
5.4	Demonstrate an ability to identify/create modern engineering tools, techniques and resources	5.4.1	Identify modern engineering tools, techniques and resources for engineering activities
		5.4.2	Create/adapt/modify/extend tools and techniques to solve engineering problems
5.5	Demonstrate an ability to select and apply discipline-specific tools, techniques and resources	5.5.1	Identify the strengths and limitations of tools for (i) acquiring information, (ii) modeling and simulating, (iii) monitoring system performance, and (iv) creating engineering designs.
		5.5.2	Demonstrate proficiency in using discipline-specific tools
5.6	Demonstrate an ability to evaluate the suitability and limitations of tools used to solve an engineering problem	5.6.1	Discuss limitations and validate tools, techniques and resources
		5.6.2	Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use.

PO 6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

	Competency		Indicators
6.3	Demonstrate an ability to describe engineering roles in a broader context, e.g. pertaining to the environment, health, safety, legal and public welfare	6.3.1	Identify and describe various engineering roles; particularly as pertains to protection of the public and public interest at the global, regional and local level
6.4	Demonstrate an understanding of professional engineering regulations, legislation and standards	6.4.1	Interpret legislation, regulations, codes, and standards relevant to your discipline and explain its contribution to the protection of the public

PO 7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and the need for sustainable development.

	Competency		Indicators
7.3	Demonstrate an understanding of the impact of engineering and industrial practices on social, environmental and in economic contexts	7.3.1	Identify risks/impacts in the life-cycle of an engineering product or activity
		7.3.2	Understand the relationship between the technical, socio-economic and environmental dimensions of sustainability
7.4	Demonstrate an ability to apply principles of sustainable design and development	7.4.1	Describe management techniques for sustainable development
		7.4.2	Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline

PO 8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

	Competency		Indicators
8.3	Demonstrate an ability to recognize ethical dilemmas	8.3.1	Identify situations of unethical professional conduct and propose ethical alternatives

| 8.4 | Demonstrate an ability to apply the Code of Ethics | 8.4.1 | Identify tenets of the ASME professional code of ethics |
| | | 8.4.2 | Examine and apply moral & ethical principles to known case studies |

PO 9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Competency		Indicators
9.4	Demonstrate an ability to form a team and define a role for each member	9.4.1 Recognize a variety of working and learning preferences; appreciate the value of diversity on a team
		9.4.2 Implement the norms of practice (e.g. rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal.
9.5	Demonstrate effective individual and team operations-- communication, problem-solving, conflict resolution and leadership skills	9.5.1 Demonstrate effective communication, problem-solving, conflict resolution and leadership skills
		9.5.2 Treat other team members respectfully
		9.5.3 Listen to other members
		9.5.4 Maintain composure in difficult situations
9.6	Demonstrate success in a team-based project	9.6.1 Present results as a team, with smooth integration of contributions from all individual efforts

PO 10: Communication: Communicate effectively on complex engineering activities with the engineering community and with the society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions

Competency		Indicators
10.4	Demonstrate an ability to comprehend technical literature and document project work	10.4.1 Read, understand and interpret technical and non-technical information
		10.4.2 Produce clear, well-constructed, and well-supported written engineering documents
		10.4.3 Create flow in a document or presentation - a logical progression of ideas so that the main point is clear
10.5	Demonstrate competence in listening, speaking, and presentation	10.5.1 Listen to and comprehend information, instructions, and viewpoints of others
		10.5.2 Deliver effective oral presentations to technical and non-technical audiences
10.6	Demonstrate the ability to integrate different modes of communication	10.6.1 Create engineering-standard figures, reports and drawings to complement writing and presentations
		10.6.2 Use a variety of media effectively to convey a message in a document or a presentation

PO 11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Competency		Indicators
11.4	Demonstrate an ability to evaluate the economic and financial performance of an engineering activity	11.4.1 Describe various economic and financial costs/benefits of an engineering activity
		11.4.2 Analyze different forms of financial statements to evaluate the financial status of an engineering project
11.5	Demonstrate an ability to compare and contrast the costs/benefits of alternate proposals for an engineering activity	11.5.1 Analyze and select the most appropriate proposal based on economic and financial considerations.

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Gurthapally (V), Abdullapurmet (Mdl) R.R.Dis.

| 11.6 | Demonstrate an ability to plan/manage an engineering activity within time and budget constraints | 11.6.1 Identify the tasks required to complete an engineering activity, and the resources required to complete the tasks. |
| | | 11.6.2 Use project management tools to schedule an engineering project, so it is completed on time and on budget. |

PO 12: Life-long learning: Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Competency		Indicators
12.4	Demonstrate an ability to identify gaps in knowledge and a strategy to close these gaps	12.4.1 Describe the rationale for the requirement for continuing professional development
		12.4.2 Identify deficiencies or gaps in knowledge and demonstrate an ability to source information to close this gap
12.5	Demonstrate an ability to identify changing trends in engineering knowledge and practice	12.5.1 Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current
		12.5.2 Recognize the need and be able to clearly explain why it is vitally important to keep current regarding new developments in your field
12.6	Demonstrate an ability to identify and access sources for new information	12.6.1 Source and comprehend technical literature and other credible sources of information
		12.6.2 Analyze sourced technical and popular information for feasibility, viability, sustainability, etc.

SAMPLES QUESTIONS FOR BLOOMS TAXONOMY LEVELS:

1. REMEMBER

Skill Demonstrated	Question Ques / Verbs for tests
• Ability to recall of information like, facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria	list, define, describe, state, recite, recall, identify, show, label, tabulate, quote, name, who, when, where, etc.
• ability to recall methodology and procedures, abstractions, principles, and theories in the field	
• knowledge of dates, events, places	
• mastery of subject matter	

Sample Questions:

1. State Ohm's law
2. List the physical and chemical properties of silicon
3. List the components of A/D converter
4. List the arithmetic operators available in C in increasing order of precedence.
5. Define the purpose of a constructor.
6. Define the terms: Sensible heat, Latent heat and Total heat of evaporation
7. List the assembler directives.
8. Describe the process of galvanisation and tinning
9. Write truth table and symbol of AND, OR, NOT, XNOR gates
10. Define the terms: Stress, Working stress and Factor of safety.
11. What is the difference between declaration and definition of a variable/function?
12. List the different storage class specifiers in C.
13. What is the use of local variables?
14. What is a pointer to a pointer?
15. What are the valid places for the keyword "break" to appear?
16. What is a self-referential structure?

2. UNDERSTAND

Skill Demonstrated	Question Ques / Verbs for tests
• understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss

Sample Questions:

1. Explain the importance of sustainability in Engineering design

2. Explain the behaviour of PN junction diode under different bias conditions

3. Describe the characteristics of SCR and transistor equivalent for a SCR

4. Explain the terms: Particle, Rigid body and Deformable body giving two examples for each.

5. How many values of the variable num must be used to completely test all branches of the following code fragment?

```
if (num>0)
    if (value<25)
{
        value=10*num;
        if(num<12)
                value=value/10;
}
else
        Value=20*num;
else
        Value=30*num
```

6. Discuss the effect of Make in India initiative on the Indian manufacturing Industry.

7. Summarise the importance of ethical code of conduct for engineering professionals

8. Explain the syntax for 'for loop'.

9. What is the difference between including the header file with-in angular braces < > and double quotes " "?

10. What is the meaning of base address of the array?

11. What is the difference between actual and formal parameters?

12. Explain the different ways of passing parameters to the functions.

13. Explain the use of comma operator (,).

14. Differentiate between entry and exit controlled loops.

15. How is an array different from linked list?

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3. APPLY

Skill Demonstrated	Question Ques / Verbs for tests
• use information • use methods, concepts, laws, theories in new situations • solve problems using required skills or knowledge • Demonstrating correct usage of a method or procedure	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify

Sample Questions:

1. Model and realize the following behaviors using diodes with minimum number of digital inputs.

   (i) Turning on of a burglar alarm only during night time when the locker door is opened.

   (ii) Providing access to an account if either date of birth or registered mobile number or both are correct.

   (iii) Updating the parking slot empty light in the basement of a shopping mall.

2. One of the resource persons needs to address a huge crowd (nearly 400 members) in the auditorium. A system is to be designed in such a way that everybody attending the session should be able to hear properly and clearly without any disturbance. Identify the suitable circuit to boost the voice signal and explain its functionality in brief.

3. A ladder 5.0 m long rests on a horizontal ground & leans against a smooth vertical wall at an angle $20°$ with the vertical. The weight of the ladder is 900 N and acts at its middle. The ladder is at the point of sliding, when a man weighing 750 N stands on a rung 1.5 m from the bottom of the ladder. Calculate the coefficient of friction between the ladder & the floor.

4. A ball is dropped from 6 meters above a flat surface. Each time the ball hits the surface after falling a distance h, it rebounds a distance rh. What will be the total distance the ball travels in each of the following cases.

   (a) $r > 1$ (b) $0 < r < 1$ (c) $r = 1$
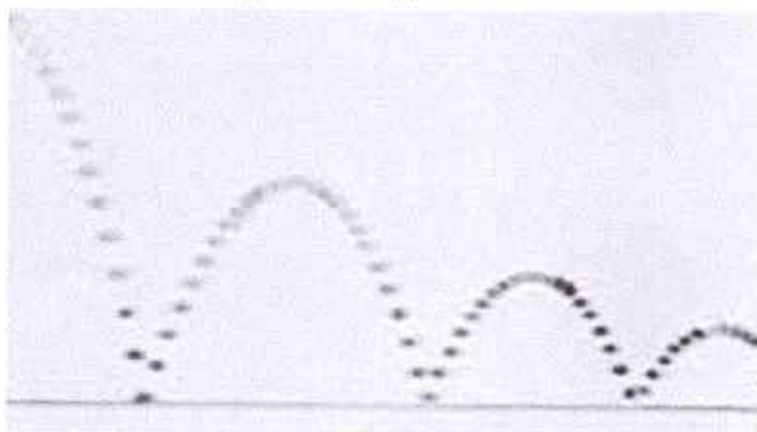
5. The region bounded by the curves $y = e^{((-1)\square x)}, y = 0, x = 1$, and $x = 5$ is rotated about the x-axis. Use Simpson's Rule with $n = 8$ to estimate the volume of the resulting solid.

6. An electric train is powered by machine which takes the supply from 220 V DC rail running above the train throughout. Machine draws current of 100 A from the DC rail to account for high torque during starting and runs at 700 r.p.m initially. Calculate the new speed of the train once it picks up the speed

where the torque output required is only 70% of starting torque. Assume the motor has a resistance of 0.1Ω across its terminals.

7. Write an algorithm to implement a stack using queue.

8. A single array A[1..MAXSIZE] is used to implement two stacks. The two stacks grow from opposite ends of the array. Variables top1 and top2 (top1< top2) point to the location of the topmost element in each of the stacks. What is the condition for "stack full", if the space is to be used efficiently.

9. Consider the following table of arrival time and burst time for three processes P0, P1 and P2.

Process	Arrival time	Burst Time
P0	0 ms	9 ms
P1	1 ms	4 ms
P2	2 ms	9 ms

The pre-emptive shortest job first scheduling algorithm is used. Scheduling is carried out only at arrival or completion of processes. What is the average waiting time for the three processes?

10. A CPU generates 32-bit virtual addresses. The page size is 4 KB. The processor has a translation look-aside buffer (TLB) which can hold a total of 128-page table entries and is 4-way set associative. What is the minimum size of the TLB tag?

4. ANALYZE

Skill Demonstrated	Question Ques / Verbs for tests
• break down a complex problem into parts. • Identify the relationships and interaction between the different parts of complex problem	classify, outline, break down, categorize, analyse, diagram, illustrate, infer, select

Sample Questions:

1. A class of 10 students consists of 5 males and 5 females. We intend to train a model based on their past scores to predict the future score. The average score of females is 60 whereas that of male is 80. The overall average of the class is 70. Give two ways of predicting the score and analyse them for fitting model.

2. Suppose that we want to select between two prediction models, M1 and M2. We have performed 10 rounds of 10-fold cross-validation on each model, whereas the same data partitioning in round one is used for both M1 and M2. The error rates obtained for M1 are 30.5, 32.2, 20.7, 20.6, 31.0, 41.0, 27.7, 26.0, 21.5, 26.0. The error rates for M2 are 22.4, 14.5, 22.4, 19.6, 20.7, 20.4, 22.1, 19.4, 16.2, 35.0. Comment on whether one model is significantly better than the other considering a significance level of 1%.

3. Return statement can only be used to return a single value. Can multiple values be returned from a function? Justify your answer.

4. Bob wrote a program using functions to find sum of two numbers whereas Alex wrote the statements to find the sum of two numbers in the main() function only. Which of the two methods is efficient in execution and why?

5. Carly wants to store the details of students studying in 1st year and later on wishes to retrieve the

information about the students who score the highest marks in each subject. Specify the scenario where the data can be organized as a single 2-D array or as multiple 1-D arrays.

6. Dave is working on a Campus Management Software but is unable to identify the maximum number of students per course. He decided to implement the same using arrays but discovered that there is memory wastage due to over-provisioning. Which method of memory storage should be used by Dave and how it can be implemented using C?

7. Albert is working on a 32-bit machine whereas Julie is working on a 64-bit machine. Both wrote the same code to find factorial of a number but Albert is unable to find factorial of a number till 9 whereas Julie is able to find the factorial of higher number. Identify the possible reason why Albert is unable to find the factorial. Suggest some changes in the code so that Albert can handle bigger inputs.

8. While writing a C code, the problem faced by the programmers is to find if the parenthesis is balanced or not. Write an algorithm to check if the parenthesis in C code are balanced. Initially your code should work for balanced { and } braces.

9. Swapping of the data in a linked list can be performed by swapping the contents in the linked list. Can the contents of a linked list be swapped without actually swapping the data?

5. EVALUATE

Skill Demonstrated	Question Ques / Verbs for tests
• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • use of definite criteria for judgments	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate

6. CREATE

Skill Demonstrated	Question Ques / Verbs for tests
• use old ideas to create new ones • Combine parts to make (new) whole, • generalize from given facts • relate knowledge from several areas • predict, draw conclusions	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate

Both higher order cognitive skills 'Evaluate' and 'Create' are difficult to assess in time-limited examinations. These need to be assessed in variety of student works like projects, open ended problem-solving exercises etc. Typical examples of problem statements or need statements which need higher order abilities to solve are given below

Sample Problem / Need statements:

1. Automatic tethering of milking machine to the udder of a cow. A milk diary wants to automate the milking process. The milking process involves attaching the milking cups to the teats. Design a system for the same.

2. An electric vehicle uses LIoN batteries. The batteries have to be charged and get discharged during use.

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Gurthapally (V), Abdullapurmet (Mdl) R.R.Dis.

39

The batteries require continuous monitoring during charging and discharging so that they remain healthy and yield a long life. Design a system to monitor and manage the health of the batteries.

3. A Biotech industry needs automation for filling its product into 20 ltr bottles. Design a system to meter the flow into the bottles so that each bottle has 20 ltr of the liquid. There will be more than one filling station and the system has to monitor all the filling stations as well as keep count of the total production on a daily basis.

4. Microwave Doppler radar with a range of 9m are available for motion detection. Design a surround view monitoring system for a 3 wheeler to detect human obstacles while the vehicle is in motion.

5. Design a system to assist the driver by using cameras to detect lane markers and pedestrians while the vehicle is in motion.

6. Develop a small size USB 2.0 / 3.0 CMOS camera system which can be used for industrial inspection, medical applications, microscopy, etc. The system should be able to capture the image quickly and be able to process the captured image and then store it also

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Appendix-C

MODEL QUESTION PAPER

Course: Programming for Problem solving (ESC 103)
Maximum Marks :100; Duration: 03 hours

Q.No	Questions	Marks	CO	BL	PI
1(a)	Explain the steps involved in solving a problem using computer.	08	CO1	L2	1.4.1
1(b)	Write an algorithm to find roots of a quadratic equation $ax2 + bx + c = 0$ reading the values of a, b and c.	12	CO2	L3	1.4.1
2(a)	Compare if-else-if and switch statement giving examples for their relevant use.	08	CO2	L2	1.4.1
2b	Write a C program that reads a given integer number and checks whether it a palindrome. A palindrome is a number that has same value even when it is reversed. Eg: 12321 is a palindrome.	12	CO3	L3	1.4.1
3a	Compare the working of three looping constructs of C language giving their syntax.	08	CO3	L2	1.4.1

3b	What does the following program do?
	`#include <stdio.h>`
	`int main()`
	`{`
	`    char ch;`
	`    int vcnt = 0, ccnt=0;`
	`    for ( ch = getchar(); ch != '\n'; ch=getchar()){`
	`    if(ch=='a' || ch=='e' || ch=='i' || ch=='o' || ch=='u' ||`
	`        ch=='A' || ch=='E' || ch=='I' || ch=='O' || ch=='U')`
	`        vcnt++;`
	`    else if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))`
	`        ccnt++;`
	`    }`
	`    printf( " %d   %d\n", vcnt, ccnt);`
	`}`
	Rewrite the above program using while and switch constructs.
		12	CO4	L4	1.4.1

4a	Compare call by value and call by reference with relevant examples.	8	CO3	L2	1.4.1
4b	Write a C function to find the largest and smallest in a given list of integers of size n using call by reference: void minmax(int list[ ], int n, int *min, int *max);	12	CO3	L3	1.4.1
5a	Explain at least four file handling operations available in C language giving their syntax.	4	CO3	L2	1.4.1
5b	Identify the bug in the following function written to return the swapped values of two integer variables given:				

	int swap(int *x, int *y)
	{
	    int *temp;
	    temp = x, x=y, y = temp;
	}
		6	CO5	L4	1.4.1

5c	Define a structure to store time with three components hours, mins and seconds. Write a modular C program to compute the time taken by an athlete to complete a marathon reading the start and end time of his run.	10	CO3	L3	1.4.1

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes

PO – Program Outcomes; PI Code – Performance Indicator Code
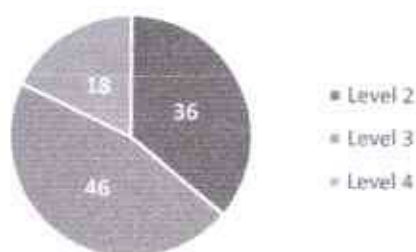
Bloom's Level wise Marks Distribution

Course Outcome wise Marks Distribution

MODEL QUESTION PAPER FOR END SEMESTER EXAMINATION

Course Name: Programming for Problem Solving
Duration: 3 hrs. ; Max. Marks: 100

Instructions:

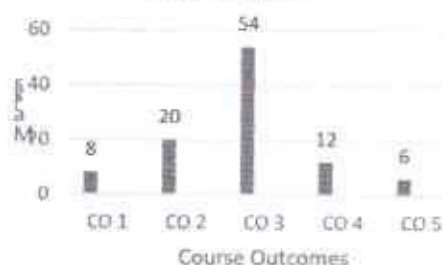   a. Attempt five questions selecting ONE from each section. Question 9 (Section E) is compulsory.

    b. All the questions carry equal marks.

    c. Draw neat diagrams wherever applicable.

Q. No	Question	Marks	BL	CO	PO	PI Code
	Section-A					
1.	a. What is an algorithm? Explain the characteristics of an algorithm.	2+6	1,2	2	1	1.4.1
	b. Write an algorithm to find angle between hour and minute hands of a clock at a given time.	7	3	3	1	1.4.1
	c. Is it mandatory to declare main() function with return type as void or int. What will be the effect if there is no return type declared for main() function?	3+2	4	3	1	1.4.1
	OR					
2.	a. What is the difference between definition and declaration in C? When a user writes "int x;" is it treated as declaration or definition in C.	3+2	2,4	3	1	1.4.1
	b. Write a program in C to find largest of 3 positive integer numbers using conditional operators.	7	3	3	1,2	1.4.1, 2.2.4
	c. What is meant by iterative statements? What are the different types of iterative statements in C?	8	1,2	3	1	1.4.1
	Section-B					
3.	a. Bob has placed N objects in a row which are marked with a number equal to their weight in Kg. He wants to check whether the objects are in increasing order of their weights or not. Write a C program to help Bob.	12	3	3,6,7	1,2	1.4.1, 2.2.4
	b. Differentiate between Big-O and Big-Omega notation.	4	2	3	1	1.4.1
	c. What is the role of index in an array? How are the elements of a 2D array accessed in C?	2+2	2	3	1	1.4.1
	OR					
4.	a. Ram is conducting a study which is based on counting the number of cars crossing the highway. Every hour he generates a random string containing sequence of characters <rbwbwr...>, where r represents red color, w denotes white color and b denotes blue color cars. The string is forwarded to Shyam for analysis who computes the number of red, blue and white color cars crossing Ram every hour. Assume that Ram works for 5 hours in a day, help Shyam generate a daily report containing the following: i. Total number of different colour cars crossing Ram in an hour. ii. Total number of different colour cars crossing Ram in a day. iii. Total number of cars crossing Ram in a day.	4+4+4	3	3,6,7	1,2	1.4.1, 2.2.4

		Marks				
	b. What is a variable? Explain the ways to declare scope of a variable.	2+6	1,2	3	1	1.4.1

Section-C

5.	a. Write a program which will read positive integer numbers from the users and compute the sum if the number can be expressed as power of 2. The test whether a number can be expressed as power of 2 will be done using a function power_of_two(int a).	12	3	3,6,7	1,2	1.4.1
	b. What is recursion? Differentiate between homogeneous and heterogeneous recursion with the help of an example.	2+3+3	2	3	1	1.4.1

OR

6.	a. What are the different ways to pass parameters to a function? Explain with the help of a suitable example.	4+4	2	3,5	1	1.4.1
	b. Is it possible to return multiple values from a function? Justify the statement with the help of an example.	4+8	3	3,6,7	1,2	1.4.1

Section-D

7.	a. What is a structure? What is the benefit offered by using a structure over multiple arrays?	2+6	2	5	1	1.4.1
	b. Ram is working on a project which requires returning multiple values from a function. He observed that a return statement can only be used to return a single value from a function. How the function should be implemented so that multiple values can be returned by Ram?	12	4	5	1	1.4.1

OR

8.	a. Write a program that reads a number as input from the user. The entered number is written to a file "even.txt" if the input is even else it is written to "odd.txt". Write a C code to perform the desired task.	12	3	5	1	1.4.1
	b. What are the different methods to open a file? Explain each with the help of a C program.	3+5	2	5	1	1.4.1

Section-E (Compulsory Question)

9.	a. What is a compiler? List names of any 2 compilers.	2½	1	1	1	1.4.1
	b. What are the benefits of designing a flowchart for solving a problem?	2½	4	2	1	1.4.1

	c. What is the output of the following code?
	int main(){
	int x=10;
	int y=sizeof(x/2);
	printf("%d",y); }
		2½	3	4	1	1.4.1

	d. What is the difference between creating constant using #define macro and const keyword?	2½	3	3	1	1.4.1
	e. What is the role of function prototype? When is it required in C?	2½	2	3	1	1.4.1
	f. Which of the following are unary operators in C? State reason for your answer. a. ! b. sizeof c. ~ d. &&	2½	2	3	1	1.4.1

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g. Which of the following special symbol allowed in a variable name? State reason for your answer. a. * (asterisk) b. | (pipeline) c. - (hyphen) d. _ (underscore)	2 ½	2	3	1	1.4.1
h. In which header file is the NULL macro defined? State reason for your answer. a. stdio.h b. stddef.h c. stdio.h and stddef.h d. math.h	2 ½	2	3	1	1.4.1

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)
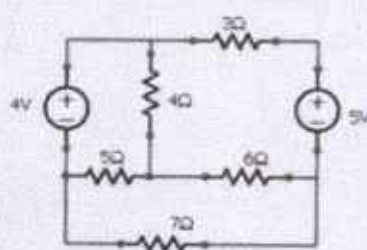
CO – Course Outcomes

PO – Program Outcomes; PI Code – Performance Indicator Code

MODEL QUESTION PAPER

Total Duration (H:M): 3:00

Course : Basic Electrical Engineering (ESC101)

Maximum Marks :100

| Q.No	Questions	Marks	CO	BL	PI
1(a)	Calculate current through 4 Ω resistor using Kirchoff's Laws? Verify the same using Superposition Theorem. 	12	CO1	L3	1.3.1
1(b)	Derive the expression for the transient current in a series 'R-L' circuit when a 'dc' voltage of V volts is applied. Sketch time variation of current in the circuit.	8	CO1	L2	1.3.1
2(a)	Two impedances $Z1 = 15+j12Ω$ and $Z2 = 8-j5$ Ω are connected in parallel. If the potential difference across one of the impedance is 250 V, calculate i) total current and branch currents ii) total power and power consumed in each branch iii) overall p.f. IV) draw the phasor diagram	12	CO2	L3	1.3.1
2b	It is desired to operate a 100 W, 120 V, electric bulb at its rated current on a 240 V, 50 Hz supply. The simplest arrangement is to use either (a) a resistor, or (b) a capacitor or (c) an inductor having 10 Ω resistance in series with the electric bulb so as to drop the excess voltage. Determine the value of the component used, the total power consumed and the power factor in each case. Giving reasons, state which alternative is the best.	8	CO2	L4	1.3.1

3a	A single phase 25 kVA 1000/2000 V, 50 Hz transformer has maximum efficiency of 98% at full load upf. Determine its efficiency at, (a) 3/4th full load, unity power factor (b) 3/4th full load 0.8 power factor	12	CO3	L3	1.3.1
3b	Explain the working of a practical transformer with relevant phasor diagram, and define voltage regulation.	8	CO3	L2	1.3.1
4a	A two pole 3 phase 50 Hz induction motor is running on load with a slip of 4%. Calculate the actual speed and the synchronous speed of the machine. Sketch the speed/ load characteristic of the machine.	8	CO4	L2	1.3.1
4b	A wireless battery powered drilling machine operates on 24 V DC with constant speed and negligible field current. Initially when the machine is powered it runs at 1200 rpm and draws 0.5 A from the battery. Further when the drill bit starts drilling the hole, the speed reduces to 1120 rpm. Determine power requirement from the battery for drilling if the resistance of the armature is 0.2Ω. What is the power drawn initially?	12	CO4	L4	1.3.1
5a	Explain the working principle of a single phase pulse width modulated voltage source inverter with relevant circuit diagram and draw the output voltage wave form.	8	CO5	L2	1.3.1
5b	To protect an expensive circuit component from being delivered too much power, you decide to incorporate a fast blowing fuse into the design. Knowing that the circuit component is connected to 12 V, its minimum power consumption is 12 watts and the maximum power it can safely dissipate is 100 watts, which of the three available fuse ratings should you select: 1A , 4A or 10 A? Give reasons.	6	CO6	L4	1.3.1
5c	Calculate the i) ampere-hour and ii) watt-hour efficiency of a secondary cell which is discharged at a uniform rate of 30 A for 6 hours at an average terminal voltage of 2 V. It is then charged at a uniform rate of 40 A for 5 hours to restore it to its original condition. The terminal voltage during charging is 2.5 V.	6	CO6	L3	1.3.1

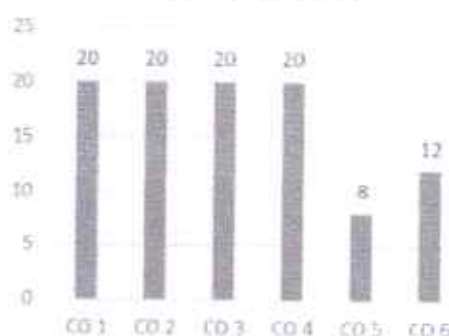BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes

PO – Program Outcomes; PI Code – Performance Indicator Code

Bloom's Level wise Marks Distribution

■ Level 2 ■ Level 3 ■ Level 4 ■
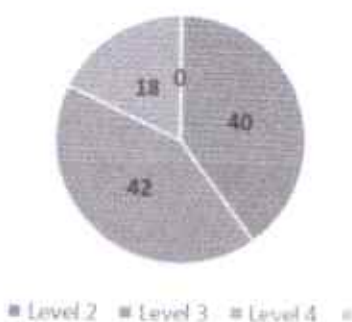
Course Outcome wise Marks Distribution

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Appendix-D

RUBRICS FOR COMMUNICATION (WRITTEN & ORAL)

Component	Proficient	Acceptable	Needs Improvements
Written Communication	Report is well organized and clearly written. The underlying logic is clearly articulated and easy to follow. Words are chosen that precisely express the intended meaning and support reader comprehension. Diagrams or analyses enhance and clarify presentation of ideas. Sentences are grammatical and free from spelling errors.	Report is organized and clearly written for the most part. In some areas the logic or flow of ideas is difficult to follow. Words are well chosen with some minor exceptions. Diagrams are consistent with the text. Sentences are mostly grammatical and only a few spelling errors are present but they do not hinder the reader.	Report lacks an overall organization. Reader has to make considerable effort to understand the underlying logic and flow of ideas. Diagrams are absent or inconsistent with the text. Grammatical and spelling errors make it difficult for the reader to interpret the text in places.
Presentation Visual Aids	Slides are error-free and logically present the main components of the process and recommendations. Material is readable and the graphics highlight and support the main ideas.	Slides are error-free and logically present the main components of the process and recommendations. Material is mostly readable and graphics reiterate the main ideas.	Slides contain errors and lack a logical progression. Major aspects of the analysis or recommendations are absent. Diagrams or graphics are absent or confuse the audience.
Oral Presentation	Speakers are audible and fluent on their topic, and do not rely on notes to present or respond. Speakers respond accurately and appropriately to audience questions and comments.	Speakers are mostly audible and fluent on their topic, and require minimal referral to notes. Speakers respond to most questions accurately and appropriately.	Speakers are often inaudible or hesitant, often speaking in incomplete sentences. Speakers rely heavily on notes. Speakers have difficulty responding clearly and accurately to audience questions.
Body Language	Body language, as indicated by appropriate and meaningful gestures (e.g., drawing hands inward to convey contraction, moving arms up to convey lift, etc.) eye contact with audience, and movement, demonstrates a high level of comfort and connection with the audience.	Body language, as indicated by a slight tendency to repetitive and distracting gestures (e.g., tapping a pen, wringing hands, waving arms, clenching fists, etc.) and breaking eye contact with audience, demonstrates a slight discomfort with the audience.	Body language, as indicated by frequent, repetitive and distracting gestures, little or no audience eye-contact, and /or stiff posture and movement, indicate a high degree of discomfort interacting with audience.

RUBRICS FOR ASSESSMENT OF DESIGN PROJECTS

Category	Needs Improvements	Acceptable	Proficient
Purpose of the Project	Does not clearly explain the intended outcome of the project or provides little information about the problem that was being solved, the need being met, or why the project was selected	Provides a description of the intended outcome of the project which includes information about the problem that was being solved or the need being met, and why the project was selected	Provides a detailed intended outcome of the project which includes information about the problem that was being solved or the need being met, and clearly articulates the reasons and decision-making process used to select the project
Research	Lacks awareness of similar work done by others in an unacceptable literary form	Reflects awareness of similar work done by others and presents it in an acceptable literary format	•Reflects thorough understanding of similar work done by others and presents it in an acceptable literary format
Choices	Lacks justification of choices with little or no references to functional, aesthetic, social, economic, or environmental considerations	Justifies choices made with reference to functional, aesthetic, social, economic, or environmental considerations	Demonstrates sophisticated justification of choices with reference to functional, aesthetic, social, economic, or environmental consideration
Alternative Designs	Only one design presented or clearly infeasible alternative given. Serious deficiencies in exploring and identifying alternative designs.	Alternative approaches identified to some degree.	Final design achieved after review of reasonable alternatives.
Application of Engineering Principles	No or erroneous application of engineering principles yielding unreasonable solution. Serious deficiencies in proper selection and use of engineering principles.	Effective application of engineering principles resulting in reasonable solution.	Critical selection and application of engineering principles ensuring reasonable results.
Final Design	Not capable of achieving desired objectives.	Design meets desired objectives.	Design meets or exceeds desired objectives.
Interpretation of Results	No or erroneous conclusions based on achieved results. Serious deficiencies in support for stated conclusions.	Sound conclusions reached based on achieved results.	Insightful, supported conclusions and recommendations.

Rubrics can also be used effectively to design the continuous assessment of the student projects. The Performance Indicators referred to in the previous sections can be used measurement criteria in the rubric. In the following example, we can see that for different phases of the students projects, we can design the rubrics keeping in mind the deliverables of the project at that particular stage.

5 - SEMESTER MINI PROJECT

RUBRICS FOR REVIEW – I

PI Code	PI	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%
2.1.1	Articulate problem statements and identify objectives - GA	02	Problem statement and objectives are not identified	Problem statement and objectives are not clear	Problem statement is clear and objectives are not in line with problem statement	Problem statement is clear and objectives are not completely defined.	Problem statement is clear and objectives are completely defined
2.1.2	Identify engineering systems, variables, and parameters to solve the problems - IA	02	Engineering systems are not identified. Variables, and parameters to solve the problems are not defined	Engineering systems are identified but not clear. Variables, and parameters to solve the problems are not defined	Engineering systems are clear. Variables, and parameters to solve the problems are not defined	Engineering systems are identified. Variables, and parameters to solve the problems are partially defined	Engineering systems are identified. Variables, and parameters to solve the problems are completely defined
2.2.3	Identify existing processes/ solution methods for solving the problem, including forming justified approximations and assumptions - GA	02	Not able to identify existing solution for solving the problem. The assumptions, approximations and justifications are also not identified.	Not able to identify existing solution for solving the problem. The assumptions, approximations and justifications are identified but not clear	Not able to identify existing solution for solving the problem. But assumptions and approximations are aligned to the objectives.	Able to identify existing solution for solving the problem. Assumptions, and approximations are clear	Able to identify existing solution for solving the problem. But assumptions, approximations and justifications are clear
2.2.4	Compare and contrast alternative solution processes to select the best process - GA	02	Not able to identify alternative solution processes	Not able to compare alternative solution processes	Able to compare alternative solution processes but could not contrast clearly	Able to compare alternative solution processes and contrast clearly but not able to select best process	Able to compare alternative solution processes, contrast it and also able to select best process
10.1.1	Read, understand and interpret technical and non-technical information - GA	02	Not able to identify technical and non-technical information	Able to identify non-technical information	Able to read technical and non-technical information, but could not understand and interpret	Able to read, understand technical and non-technical information, but could not interpret	Able to read, understand and interpret technical and non-technical information

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GA – Group Assessment   IA – Individual Assessment

PI Code	PI	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%
3.2.1	Apply formal idea generation tools to develop multiple engineering design solutions - GA	02	Not able to identify tools to develop solutions	Able to identify but not able to use it effectively	Able to use the tool but not able to generate engineering designs	Able to generate engineering designs but not able to justify	Able to generate engineering designs with justification
3.2.3	Identify suitable criteria for evaluation of alternate design solutions - GA	02	Not able to identify criteria	Able to identify criteria but not able to use them	Able to use criteria but not able to compare alternatives	Not able to justify the comparison with criteria	Able to justify the comparison with criteria
3.3.1	Apply formal decision-making tools to select optimal engineering design solutions for further development - GA	02	Not able to identify decision-making tools	Able to identify but not able to choose optimum one	Able to identify optimum one but not able to use it	Able to use optimum one but not able to justify	Able to use optimum one with justification
3.2.2	Build models/ prototypes to develop diverse set of design solutions - IA	02	Not able to identify tool to build model/ prototype	Able to choose the tool but not able to use it effectively	Able to use the tool but not able to generate alternatives	Able to generate alternatives but not able to justify the best solution	Able to generate and justify the best solution
13.1.1	Develop 2D drawings of components/ systems using modern CAD tools - IA	02	Not able to identify CAD tools	Able to identify but not able to use CAD tool	Able to use CAD tool but not able to generate drawings	Able to generate drawings but not able to follow drawing standards	Able to generate drawings with standards
13.1.2	Develop 3D models of components/systems using modern CAD tools - IA	03	Not able to identify CAD tools	Able to identify but not able to use CAD tool	Able to use CAD tool but not able to generate 3D models	Able to generate models but not able to follow standards	Able to generate models with standards
13.1.3	Apply GD&T principles as per ASME standards to manufacturing drawings, with all relevant data like material, hardness, surface finish, and tolerances - IA	02	Not able to extract GD&T principles from ASME standards	Able to extract but not able to understand them	Able to understand but not able to apply GD&T standards	Able to apply GD&T standards to drawings but not able to justify	Able to apply and justify GD&T standards to drawings

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GA – Group Assessment   IA – Individual Assessment

PI Code	PI	Marks	Very Poor Up to 20%	Poor Up to 40%	Average Up to 60%	Good Up to 80%	Very good Up to 100%
3.4.2	Generate information through appropriate tests to improve or revise design - GA	02	Not able to identify suitable tests to be done	Able to identify but not able to follow testing procedure	Able to follow testing procedures but not able to collect information	Able to collect information but not able to apply it for improvement	Able to apply information for the improvement
4.3.1	Use appropriate procedures, tools and techniques to conduct experiments and collect data - GA	04	Not able to identify tools, techniques and procedures	Able to identify but not able to conduct experiments	Able to conduct experiments but not able to follow procedure	Able to follow procedure but not able to collect data	Able to collect data as per the standards
4.3.2	Analyze data for trends and correlations, stating possible errors and limitations - GA	03	Not able to understand data	Able to understand but not able to analyze data	Able to analyze data but not able to correlate them	Able to correlate but not able to identify errors and limitations	Able to identify errors and limitations
10.2.2	Deliver effective oral presentations to technical and non-technical audiences - IA	03	Could not deliver effective presentations.	Could not deliver presentation, but presentation was prepared and attempted.	Able to deliver fair presentation but not able to answer to the audiences	Deliver effective presentations but able to answer partially to the audience queries.	Deliver effective presentation and able to answer all queries of the audience.
9.3.1	Present results as a team, with smooth integration of contributions from all individual efforts – GA + IA	03	No Contribution from an individual to a team	Contributions from an individual to a team is minimal	Contributions from an individual to a team is moderate	A contribution from an individual to a team is good but not well groomed in team.	Contribution from an individual to a team is good and results in an integrated team presentation.

GA – Group Assessment   IA – Individual Assessment

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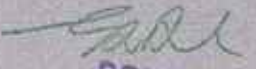   Dept. of Metallurgical & Material Engineering, MNIT, Jaipur

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