



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

5.1.1: Number of students benefitted by scholarships and **Freeships provided by the institution** Government and Non-Government bodies, industries, individuals, philanthropists during the **Academic year 2018-2019.**

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5	Freeship students with sanctioned Amount	66	Rs.8,52,000	69-71
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7.	Merit scholarship students list with amount	24	Rs. 96,000	94-95
Total Students Count :		276	Rs.43,51,700	


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AVIH/CIR/FREESHIP001

09-03-2018

AVANTHI FREESHIP INTERNAL POLICY

OBJECT

The goal of the scheme is to offer financial assistance to scheduled college students studying in Avanti Institute of Engineering And Technology to finish their education.

SCOPE

These ships are available for the students and are awarded based on evaluation of test result which is organized by AVANTHI EDUCATIONAL SOCIETY. This is relevant to all the students who are presently beneficiaries of the scheme as well as fresh admissions. Merit scholarship scheme is to help meritorious students to finish their B. Tech without monetary burden. Our institution committed to provide freeships to poor and economically backward students. It is applicable to the students who do not have parents or either father or mother has lost their lives they could avail the opportunity. We also offer freeships whose parental annual income less than one lakh. We ensure that this financial support will help the students to reach their goals

STUDENT FREESHIP FRAMEWORK

At Avanthi Institute of Engineering & Technology, we comply with a Unified Student Freeship Framework to ensure that the deserving candidates get the specified financial assistance. The framework is approved under the following conditions:

1. Admissions via freeship could be offered on a first-come, first-served foundation.
2. Admissions through freeships are limited up to 30% of the approved programme intake.
3. Students those who secure University ranks shall be honoured with cash prize and merit certificate
4. Students topped in their subjects/branch of engineering shall be honoured with cash prize and merit certificate.
5. The Students from rural background and economically poor shall be supported to pursue engineering course by providing tuition fee concessions
6. The employees children of the institution shall be considered for financial assistance.


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7. Financial assistance shall be provided to the needy students to take up quality project.
8. Financial assistance shall be provided to the students those are eligible for placements to attend training programs.
9. The freeships offered through AF is applicable for the First Year only. The same scholarship will be continued in the subsequent years of study based on the student performance.
10. After first year, and for the consequent years, the student must attain the attendance percentage >75 in previous academic year and maximum of 3 backlogs only considered to avail free ships further, and they must clear all subjects and should not have more than two backlogs in the previous academic year.
11. Apart from these, special requests for financial support shall be considered with Principal's/Management recommendations on valid reasons.

STUDENT MERIT SCHOLARSHIP FRAMEWORK

The merit scholarship will be provided for all First and Second TOPPERS of the students year wise and branch wise.

1. For 1st TOPPER awarded ----- 5000 /- Rs
2. For 2nd TOPPER awarded----- 3000/- Rs

The Avanathi Freeships and Merit Scholarships policy is adapted on this day the 9th of March 2018 at Avanathi Institute of Engineering and Technology, Gunthapally(Vil), Abdullapurmet (Mdl), RR Reddy 501512. According to the Merit Scholarship policy those who are academic year wise toppers the Avanathi Educational Society give merit Scholarship awards to academic toppers on Anniversary day.

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2018-19 MODEL FREESHIP QUESTION PAPER Total marks: 100

Question Paper Name: ENGINEERING Duration: 180 min

Name of the Student : _____ Free ship No: _____

1. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

(b) $\{1/2, -2\}$

(c) $[2, 12]$

(d) $(-1, 2)$

2. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2]$

(c) $(2, \infty)$

(d) $(-\infty, 2) \cup (2, \infty)$

3. For any natural number n , $2^{2n} - 1$ is divisible by

(a) 2

(b) 3

(c) 4

(d) 5

4. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2]$

(c) $(2, \infty)$

(d) $(-\infty, 2) \cup (2, \infty)$

5. The largest coefficient in the expansion of $(1+x)^{10}$ is:

a. $10! / (5!)^2$

b. $10! / 5!$

c. $10! / (5! \times 4!)^2$

d. $10! / (5! \times 4!)$

6. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

(b) $\{1/2, -2\}$

(c) $[2, 12]$

(d) 0

7. If $1 - i$ is a root of the equation $x^2 + ax + b = 0$, where a, b

$\in \mathbb{R}$, then the value of $a - b$ is

(a) -4

(b) 0

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(c) 2

(d) 1

8.If $\tan A = 1/2$ and $\tan B = 1/3$, then the value of $A + B$ is

(a) $\pi/6$

(b) π

(c) 0

(d) $\pi/4$

9.The number of squares that can be formed on a chessboard is

a. 64

b. 160

c. 204

d. 224

10.Number of solutions of the equation $z^2 + |z|^2 = 0$ is

(a) 1

(b) 2

(c) 3

(d) infinitely many

11. If $f(x) = x^2 + 2$,
x

R, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2)$

(c) $(2, 0)$

(d) $(\infty, 2)$

12.If $\sin \theta$ and $\cos \theta$ are the roots of $ax^2 - bx + c = 0$, then the relation between a, b and c will be

(a) $a^2 + b^2 + 2ac = 0$

(b) $a^2 - b^2 + 2ac = 0$

(c) $a^2 + c^2 + 2ab = 0$

(d) $a^2 - b^2 - 2ac = 0$

13.The value of $(126)^{1/3}$ up to three decimal places is

a. 5.011

b. 5.012

c. 5.013

d. 5.014

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14. If n is even in the expansion of $(a+b)^n$, the middle term is:

- a. n^{th} term
- b. $(n/2)^{\text{th}}$ term
- c. $[(n/2)-1]^{\text{th}}$ term
- d. $[(n/2)+1]^{\text{th}}$ term

15. What is the distance of (5, 12) from the origin?

- a. 5 units
- b. 8 units
- c. 12 units
- c. 13 units

16. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$

17. Two lines are said to be parallel if the difference of their slope is

- a. -1
- b. 0
- c. 1
- d. None of these

18. If ${}^n P_5 = 60 {}^{n-1} P_3$, the value of n is


- a. 6
- b. 10
- c. 12
- d. 16

19. Which of the following is not a statement?

- (a) Smoking is injurious to health.
- (b) $2 + 2 = 4$
- (c) 2 is the only even prime number.
- (d) Come here.

20. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$
- c. $x = at^2; y^2 = at^3$
- d. $x = at^2; y = 4at$


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21: Relation between mean, median and mode is given by:

- (a) Mode = 2 Median – 3 Mean
- (b) Mode = 2 Median + 3 Mean
- (c) Mode = 3 Median – 2 Mean
- (d) Mode = 3 Median + 2 Mean

22.If the variance of the data is 121, the standard deviation of the data is:

- (a) 121
- (b) 11
- (c) 12
- (d) 21

23.A bag contains 5 brown and 4 white socks. Ram pulls out two socks. What is the probability that both the socks are of the same colour?

- A. 9/20
- B. 2/9
- C. 3/20
- D. 4/9

24.The derivative of $x^2 \cos x$ is

- (a) $2x \sin x - x^2 \sin x$
- (b) $2x \cos x - x^2 \sin x$
- (c) $2x \sin x - x^2 \cos x$
- (d) $\cos x - x^2 \sin x \cos x$

25.What is the probability of getting the number 6 at least once in a regular die if it can roll it 6 times?

- A. $1 - (5/6)^6$
- B. $1 - (1/6)^6$
- C. $(5/6)^6$
- D. $(1/6)^6$

26.The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are

- (a) 1
- (b) 2
- (c) 3
- (d) 5

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27: Events A and B are said to be mutually exclusive if:

A. $P(A \cup B) = P(A) + P(B)$.

B. $P(A \cap B) = P(A) \times P(B)$.

C. $P(A \cup B) = 0$

D. None of these

28. If set A contains 5 elements and the set B contains 6 elements, then the number of one-one and onto mappings from A to B is

(a) 720

(b) 120

(c) 0

(d) none of these

29. The centre of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is

a. (-2, 3)

b. (1, -3/2)

c. (-4, 6)

d. (4, -6)

30. Which of the following is a statement?

(a) Roses are black.

(b) Mind your own business.

(c) Be punctual.

(d) Do not tell lies.

31. The negation of the statement "7 is greater than 8" is

(a) 7 is equal to 8.

(b) 7 is not greater than 8.

(c) 8 is less than 7.

(d) none of these.

32. If $x = t^2$, $y = t^3$, then $d^2y/dx^2 =$

a. $3/2$

b. $3/4t$

c. $3/2t$

d. $3t/2$

33. The area of a triangle with vertices (-3, 0), (3, 0) and (0, k) is 9 sq. units. The value of k will be

(a) 9

(b) 3

(c) -9

(d) 6


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34. If $[2p + q - 2r + 5s - 4p + 3q] = [4 - 31124]$, then the value of $p + q - r + 2s$ is

- (a) 8
- (b) 10
- (c) 4
- (d) -8

35. If A is a square matrix of order 3 and $|A| = 5$, then the value of $|2A|$ is

- (a) -10
- (b) 10
- (c) -40
- (d) 40

36. The value of c in Rolle's theorem for the function, $f(x) = \sin 2x$ in $[0, \pi/2]$ is

- a. $\pi/4$
- b. $\pi/6$
- c. $\pi/2$
- d. $\pi/3$

37. The function $f(x) = [\ln(1+ax) - \ln(1-bx)]/x$, not defined at $x=0$. The value should be assigned to f at $x=0$, so that it is continuous at $x=0$, is

- a. $a+bb$
- b. $a-b$
- c. $b-a$
- d. $\ln a + \ln b$

38. If $y = ax^2 + b$, then dy/dx at $x = 2$ is equal to

- a. $2a$
- b. $3a$
- c. $4a$
- d. None of these

39. If $x \sin(a+y) = \sin y$, then dy/dx is equal to

- a. $[\sin^2(a+y)]/\sin a$
- b. $\sin a / [\sin^2(a+y)]$
- c. $[\sin(a+y)]/\sin a$
- d. $\sin a / [\sin(a+y)]$

40. The domain of $\sin^{-1}(2x)$ is

- (a) $[0, 1]$
- (b) $[-1, 1]$
- (c) $[-1/2, 1/2]$
- (d) $[-2, 2]$

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41. If $\sin^{-1} x + \sin^{-1} y = \pi/2$, then value of $\cos^{-1} x + \cos^{-1} y$ is

- (a) $\pi/2$
- (b) π
- (c) 0
- (d) $2\pi/3$

Therefore, $\cos^{-1} x + \cos^{-1} y = \pi/2$.

42. Which of the following is the principal value branch of $\cos^{-1} x$?

- (a) $[-\pi/2, \pi/2]$
- (b) $(0, \pi)$
- (c) $[0, \pi]$
- (d) $(0, \pi) - \{\pi/2\}$

43. The value of the expression $\sin [\cot^{-1} (\cos (\tan^{-1} 1))]$ is

- (a) 0
- (b) 1
- (c) $1/\sqrt{3}$
- (d) $\sqrt{2/3}$

44. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

- (a) $m \times 3$
- (b) 3×3
- (c) $m \times n$
- (d) $3 \times n$

45) $\int (x^2 + 3) dx$ equals

- a. $24/3$
- b. $25/3$
- c. $26/3$
- d. None of the above..

46) If $\int 2^x dx = f(x) + C$, then $f(x)$ is

- a. 2^x
- b. $2^x \log_e 2$
- c. $2^x / \log_e 2$
- d. $2^{x+1} / x+1$

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47) The number of arbitrary constants in the particular solution of a differential equation of third order is:

- A. 3
- B. 2
- C. 1
- D. 0

48): What is the differential equation of the family of circles touching the y-axis at the origin?

- A. $2xyy' + x^2 = y^2$
- B. $2xyy'' + x' = y^2$
- C. $2xyy' - x^2 = y^2$
- D. $xyy' + x^2 = y^2$

49. Solution of differential equation $x.dy - y.dx = Q$ represents:

- A. a rectangular hyperbola
- B. parabola whose vertex is at the origin
- C. straight line passing through the origin
- D. a circle whose centre is at the origin

50. The distance of the point (1,2,1) from the line $(x-1)/2 = (y-2)/1 = (z-3)/2$ is

- a. $2\sqrt{3}/5$
- b. $2\sqrt{5}/3$
- c. $\sqrt{5}/3$
- d. $20/3$

PHYSICS

51. Farad is the unit of _____

- a. Luminosity
- b. Wavelength
- c. Permittivity
- d. Inertia

52. symbol to represent "Amount of Substance" is _____

- a. K
- b. A
- c. Cd
- d. Mol


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53. AU is the unit of _____
- Astronomy Unit
 - Astronomical unit
 - Astrological Unit
 - Archaeological Unit
54. Dimensions of kinetic energy is the same as that of _____
- Acceleration
 - Velocity
 - Work
 - Force.
55. among the following is the Supplementary Unit _____
- Mass
 - Time
 - Solid angle
 - Luminosity
56. Find the general solution of: ax^2+bx+c
- $\sin^{-1} y = x + c$
 - $\sin^{-1} y/2 = x + c$
 - $\sin^{-1} y^2 = x + c$
 - None of the above
57. Uniform circular motion is given by the formula _____
- a. $V=u+at$ b. $v^2-u^2=2AS$ c. $V-U=A$ d. none
58. Motion in a plane is called _____
- Motion in one dimension
 - Motion in two dimensions
 - Motion in three dimensions
 - Motion in four dimensions
59. Give an example of motion in two dimensions _____
- Motion along a straight line in any direction
 - Bird flying
 - A flying kite
 - Projectile motion.


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60. The physical Quantity is

- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

61. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

62. The energy possessed by the body by virtue of its motion is known as?

- a. Chemical energy
- b. Thermal energy
- c. Potential energy
- d. Kinetic energy

63. Find the potential energy stored in a ball of mass 5 kg placed at a height of 3 m above the ground.

- a. 121.20 J
- b. 147.15 J
- c. 227.31 J
- d. 182.21 J

64. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

65. What is the power utilised when work of 1000 J is done in 2 seconds?

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

66. Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d. None of the options

67. What is the power utilised when work of 1000 J is done in 2 seconds?

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

68. When the charged particles move in a combined magnetic and electric field, then the force acting is known as _____.

- a. Centripetal force
- b. Centrifugal force
- c. Lorentz force
- d. Orbital force


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69. SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

70. Find the power if the work done is 20j per hour

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

71. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

72. Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d. None of the options

73. The bending of beam of light around corners of obstacles is called

- (a) Reflection
- (b) Diffraction
- (c) Refraction
- (d) Interference

74. Magnetic field at any point inside the straight solenoid is given as_____

- a. $B = \mu_0 + nI$
- b. $B = \mu_0 + nI$
- c. $B = \mu_0 / nI$
- d. $B = \mu_0 nI$

75. SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

76. The magnitudes of the gravitational force at distances r_1 and r_2

from the centre of a uniform sphere of radius R and mass M are F_1 and F_2 respectively. Then

- (a) $F_1/F_2 = r_1/r_2$ if $r_1 < R$ and $r_2 < R$
- (b) $F_1/F_2 = r_1^2/r_2^2$ if $r_1 > R$ and $r_2 > R$
- (c) $F_1/F_2 = r_1/r_2$ if $r_1 > R$ and $r_2 > R$
- (d) $F_1/F_2 = r_2^2/r_1^2$ if $r_1 < R$ and $r_2 < R$

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77.If 2.2 kilowatt power is being transmitted at 44KV on a 20 ohm line, then power loss will be

- (a) 0.1 watt (b) 1.4 watt
(c) 100 watt (d) 0.05 watt

78.Water is flowing with a velocity of 3m/s in a pipe of diameter 4 cm. This water enters another tube of diameter 2 cm. The velocity of water in this tube is

- (a) 12 m/s
(b) 6 m/s
(c) 3 m/s
(d) 1.5 m/s

79. A tuning fork is sounded with vibrating strings of lengths 0.95m and 1m. It produces 6 beats with each one. The frequency of the tuning fork will be

- (a) 150 Hz
(b) 200 Hz
(c) 225 Hz
(d) 234 Hz

80.Hydraulic brakes work on the principal of

- (a) Pascal's Law
(b) Thomson's Law
(c) Newton's Law
(d) Bernouli's Theorem

CHEMISTRY

81.If liquids A and B form an ideal solution

- (a) The entropy of mixing is zero
(b) The free energy of mixing is zero
(c) The free energy as well as the entropy of mixing
(d) The free energy mixing is maximum

82.For an ideal gas, C_V and C_P are related as :

- (a) $C_V - C_P = R$
(b) $C_V + C_P = R$
(c) $C_P - C_V = RT$
(d) $C_P - C_V = R$

83.Gases deviate from ideal behaviour because molecules—————

- (a) are colourless
(b) are spherical
(c) attract each other
(d) have high speeds

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84. Which of the following molecules have trigonal planar geometry?

- (a) BF_3
- (b) NH_3
- (c) PCl_3
- (d) IF

85. The elements with atomic numbers 9, 17, 35, 53, 85 are all _____

- (a) halogens
- (b) noble gases
- (c) alkali earth metals
- (d) transition metals

86. Isotopes of an element have _____

- (a) Different chemical and physical properties
- (b) Similar chemical and physical properties
- (c) Similar chemical but different physical properties
- (d) Similar physical but different chemical properties

87. The radius of an atomic nucleus is of the order of _____

- (a) 10^{-10} cm
- (b) 10^{-13} cm
- (c) 10^{-15} cm
- (d) 10^{-8} cm

88. The significant figures in 0.00051 are _____.

- (a) 5
- (b) 3
- (c) 2
- (d) 26

89. A pure substance which contains only one type of atom is called _____.

- (a) An element
- (b) a compound
- (c) a solid
- (d) a liquid


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90. Which of the following statements concerning transuranium elements is incorrect?

- a) Atomic number > 92
- b) Example is Thorium
- c) Decay radioactively as they are unstable
- d) Elements after Uranium

91. When copper chips are exposed to concentrated nitric acid, which gas is produced?

- a) Nitrogen (III) oxide
- b) Nitrogen (IV) oxide
- c) Nitrogen (I) oxide
- d) Nitrogen (II) oxide

92. What happens to the size of atoms in p-block elements when we move from left to right in the same period?

- a) Size does not change
- b) Size increases then decreases
- c) Size increases
- d) Size decreases

93. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

94. Only a simple homogeneous reaction requires which of the following methods?

- a) Integration method
- b) Half-life period method
- c) Graphical method
- d) Ostwald's isolation method

95. What effect does temperature have on the half-life of a first-order reaction?

- a) It increases
- b) It decreases
- c) It remains the same
- d) Both increases as well as decrease

96. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
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97.The heat of solution or mixing has a negative side.

- a) Heat of solution
- b) Heat of dissolution
- c) Heat of reaction
- d) Heat of mixing

98.When two perfect solutions with volume V each are combined, What is the volume of the solution as a result?

- a) V
- b) $2V$
- c) Greater than $2V$
- d) Less than $2V$

99.The electrons of Rutherford's model would be expected to lose energy because

- a. They jump on the nucleus
- b. They move randomly
- c. Radiate electromagnetic waves
- d. Escape from the atom

100.Electrons in the atom are held to the nucleus by

- a. Nuclear Force
- b. Coulomb's Force
- c. Gravitational Force
- d. Van Der Waal's Force


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2018-19 MODEL FREESHIP QUESTION PAPER

Total marks: 100

Question Paper Name: ENGINEERING

Duration: 180 min

Name of the Student : Mundla Anushka Free ship No: AVIH2018023
31-05-2018

1. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

~~(b) $\{1/2, -2\}$~~

(c) $[2, 12]$

d) $(-1, 2)$

2. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

~~(b) $(-\infty, 2]$~~

~~(c) $(2, \infty)$~~

~~(d) $(-\infty, 2) \cup (2, \infty)$~~

3. For any natural number n , $2^{2n} - 1$ is divisible by

(a) 2

~~(b) 3~~

(c) 4

(d) 5

4. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2]$

~~(c) $(2, \infty)$~~

(d) $(-\infty, 2) \cup (2, \infty)$

5. The largest coefficient in the expansion of $(1+x)^{10}$ is:

a. $10! / (5!)^2$

~~b. $10! / 5!$~~

c. $10! / (5! \times 4!)^2$

d. $10! / (5! \times 4!)$

6. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

~~(b) $\{1/2, -2\}$~~

(c) $[2, 12]$

d) 0

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7. If $1 - i$, is a root of the equation $x^2 + ax + b = 0$, where $a, b \in \mathbb{R}$, then the value of $a - b$ is

- (a) -4
- (b) 0
- (c) 2
- (d) 1

8. If $\tan A = 1/2$ and $\tan B = 1/3$, then the value of $A + B$ is

- (a) $\pi/6$
- (b) π
- (c) 0
- (d) $\pi/4$

9. The number of squares that can be formed on a chessboard is

- a. 64
- b. 160
- c. 204
- d. 224

10. Number of solutions of the equation $z^2 + |z|^2 = 0$ is

- (a) 1
- (b) 2
- (c) 3
- (d) infinitely many

11. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

- (a) $[2, \infty)$
- (b) $(-\infty, 2]$
- (c) $(2, 0)$
- (d) $(\infty, 2)$

12. If $\sin \theta$ and $\cos \theta$ are the roots of $ax^2 - bx + c = 0$, then the relation between a, b and c will be

- (a) $a^2 + b^2 + 2ac = 0$
- (b) $a^2 - b^2 + 2ac = 0$
- (c) $a^2 + c^2 + 2ab = 0$
- (d) $a^2 - b^2 - 2ac = 0$


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13. The value of $(126)^{1/3}$ up to three decimal places is

- a. 5.011
- b. 5.012
- c. 5.013
- d. 5.014

14. If n is even in the expansion of $(a+b)^n$, the middle term is:

- a. n^{th} term
- b. $(n/2)^{\text{th}}$ term
- c. $[(n/2)-1]^{\text{th}}$ term
- d. $[(n/2)+1]^{\text{th}}$ term

15. What is the distance of $(5, 12)$ from the origin?

- a. 5 units
- b. 8 units
- c. 12 units
- d. 13 units

16. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$

17. Two lines are said to be parallel if the difference of their slope is

- a. -1
- b. 0
- c. 1
- d. None of these

18. If ${}^n P_5 = 60^{n-1} P_3$, the value of n is

- a. 6
- b. 10
- c. 12
- d. 16


19. Which of the following is not a statement?

(a) Smoking is injurious to health.

(b) $2 + 2 = 4$

(c) 2 is the only even prime number.

(d) Come here.


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20. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$
- c. $x = at^2; y^2 = at^3$
- d. $x = at^2; y = 4at$

21: Relation between mean, median and mode is given by:

- (a) $\text{Mode} = 2 \text{ Median} - 3 \text{ Mean}$
- (b) $\text{Mode} = 2 \text{ Median} + 3 \text{ Mean}$
- (c) $\text{Mode} = 3 \text{ Median} - 2 \text{ Mean}$
- (d) $\text{Mode} = 3 \text{ Median} + 2 \text{ Mean}$

22. If the variance of the data is 121, the standard deviation of the data is:


- (a) 121
- (b) 11
- (c) 12
- (d) 21

23. A bag contains 5 brown and 4 white socks. Ram pulls out two socks. What is the probability that both the socks are of the same colour?

- A. $9/20$
- B. $2/9$
- C. $3/20$
- D. $4/9$

24. The derivative of $x^2 \cos x$ is

- (a) $2x \sin x - x^2 \sin x$
- (b) $2x \cos x - x^2 \sin x$
- (c) $2x \sin x - x^2 \cos x$
- (d) $\cos x - x^2 \sin x \cos x$


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25. What is the probability of getting the number 6 at least once in a regular die if it can roll it 6 times?

A. $1 - (5/6)^6$

B. $1 - (1/6)^6$

C. $(5/6)^6$

D. $(1/6)^6$

26. The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are

(a) 1

(b) 2

(c) 3

(d) 5

27. Events A and B are said to be mutually exclusive if:

A. $P(\bar{A} \cup \bar{B}) = P\bar{A} + P\bar{B}$

B. $P(A \cap B) = P\bar{A} \times P\bar{B}$

C. $P(A \cup B) = 0$

D. None of these

28. If set A contains 5 elements and the set B contains 6 elements, then the number of one-one and onto mappings from A to B is

(a) 720

(b) 120

(c) 0

(d) none of these

29. The centre of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is

a. (-2, 3)

b. (1, -3/2)

c. (-4, 6)

d. (4, -6)


30. Which of the following is a statement?

(a) Roses are black.

(b) Mind your own business.

(c) Be punctual.

(d) Do not tell lies.


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31. The negation of the statement "7 is greater than 8" is

- (a) 7 is equal to 8.
- (b) 7 is not greater than 8.
- (c) 8 is less than 7.
- (d) none of these.

32. If $x = t^2$, $y = t^3$, then $d^2y/dx^2 =$

- a. $3/2$
- b. $3/4t$
- c. $3/2t$
- d. $3t/2$

33. The area of a triangle with vertices $(-3, 0)$, $(3, 0)$ and $(0, k)$ is 9 sq. units. The value of k will be

- (a) 9
- (b) 3
- (c) -9
- (d) 6

34. If $[2\begin{matrix} p & q \\ r & s \end{matrix} + \begin{matrix} 2 & 5 \\ 4 & 3 \end{matrix}] = [4 - 31124]$, then the value of $p + q - r + 2s$ is

- (a) 8
- (b) 10
- (c) 4
- (d) -8

35. If A is a square matrix of order 3 and $|A| = 5$, then the value of $|2A'|$ is

- (a) -10
- (b) 10
- (c) -40
- (d) 40

36. The value of c in Rolle's theorem for the function, $f(x) = \sin 2x$ in $[0, \pi/2]$ is

- a. $\pi/4$
- b. $\pi/6$
- c. $\pi/2$
- d. $\pi/3$

37. The function $f(x) = [\ln(1+ax) - \ln(1-bx)]/x$, not defined at $x=0$. The value should be assigned to f at $x=0$, so that it is continuous at $x=0$, is

- a. $a+b$
- b. $a-b$
- c. $b-a$
- d. $\ln a + \ln b$

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38. If $y = ax^2 + b$, then dy/dx at $x = 2$ is equal to

- a. $2a$
- b. $3a$
- c. $4a$
- d. None of these

39. If $x \sin(a+y) = \sin y$, then dy/dx is equal to

- a. $[\sin^2(a+y)]/\sin a$
- b. $\sin a / [\sin^2(a+y)]$
- c. $[\sin(a+y)]/\sin a$
- d. $\sin a / [\sin(a+y)]$

40. The domain of $\sin^{-1}(2x)$ is

- (a) $[0, 1]$
- (b) $[-1, 1]$
- (c) $[-1/2, 1/2]$
- (d) $[-2, 2]$

41. If $\sin^{-1}x + \sin^{-1}y = \pi/2$, then value of $\cos^{-1}x + \cos^{-1}y$ is

- (a) $\pi/2$
- (b) π
- (c) 0
- (d) $2\pi/3$


Therefore, $\cos^{-1}x + \cos^{-1}y = \pi/2$.

42. Which of the following is the principal value branch of $\cos^{-1}x$?

- (a) $[-\pi/2, \pi/2]$
- (b) $(0, \pi)$
- (c) $[0, \pi]$
- (d) $(0, \pi) - \{\pi/2\}$

43. The value of the expression $\sin [\cot^{-1} (\cos (\tan^{-1} 1))]$ is

- (a) 0
- (b) 1
- (c) $1/\sqrt{3}$
- (d) $\sqrt{2/3}$


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44. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

- (a) $m \times 3$
- (b) 3×3
- (c) $m \times n$
- (d) $3 \times n$

45) $\int^2 (x^2 + 3) dx$ equals

- a. $24/3$
- b. $25/3$
- c. $26/3$
- d. None of the above..

46) If $\int 2^x dx = f(x) + C$, then $f(x)$ is

- a. 2^x
- b. $2^x \log_e 2$
- c. $2^x / \log_e 2$
- d. $2^{x+1} / x+1$

47) The number of arbitrary constants in the particular solution of a differential equation of third order is:


- A. 3
- B. 2
- C. 1
- D. 0

48): What is the differential equation of the family of circles touching the y-axis at the origin?

- A. $2xyy' + x^2 = y^2$
- B. $2xyy'' + x' = y^2$
- C. $2xyy' - x^2 = y^2$
- D. $xyy' + x^2 = y^2$

49. Solution of differential equation $x \cdot dy - y \cdot dx = Q$ represents:

- A. a rectangular hyperbola


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B. parabola whose vertex is at the origin
C. straight line passing through the origin
D. a circle whose centre is at the origin

50. The distance of the point (1,2,1) from the line $(x-1)/2 = (y-2)/1 = (z-3)/2$ is

- a. $2\sqrt{3}/5$
- b. $2\sqrt{5}/3$
- c. $\sqrt{5}/3$
- d. $20/3$

PHYSICS

51. Farad is the unit of _____

- a. Luminosity
- b. Wavelength
- c. Permittivity
- d. Inertia

52. Symbol to represent "Amount of Substance" is _____

- a. K
- b. A
- c. Cd
- d. Mol


53. AU is the unit of _____

- a. Astronomy Unit
- b. Astronomical unit
- c. Astrological Unit
- d. Archaeological Unit

54. Dimensions of kinetic energy is the same as that of _____

- a. Acceleration
- b. Velocity
- c. Work
- d. Force.

55. among the following is the Supplementary Unit _____


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- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

56. Find the general solution of: ax^2+bx+c

- A. $\sin^{-1} y = x + c$
- B. $\sin^{-1} y/2 = x + c$
- C. $\sin^{-1} y^2 = x + c$
- D. None of the above

57. Uniform circular motion is given by the formula _____

- a. $V=u+at$
- b. $v^2-u^2=2AS$
- c. $V-U=A$
- d. none

58. Motion in a plane is called _____

- a. Motion in one dimension
- b. Motion in two dimensions
- c. Motion in three dimensions
- d. Motion in four dimensions

59. Give an example of motion in two dimensions _____

- a. Motion along a straight line in any direction
- b. Bird flying
- c. A flying kite
- d. Projectile motion.

60. The physical Quantity is

- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

61. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

62. The energy possessed by the body by virtue of its motion is known as?

- a. Chemical energy
- b. Thermal energy
- c. Potential energy
- d. Kinetic energy

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63..Find the potential energy stored in a ball of mass 5 kg placed at a height of 3 m above the ground.

- a. 121.20 J
- b. 147.15 J
- c. 227.31 J
- d. 182.21 J

64.State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

65.What is the power utilised when work of 1000 J is done in 2 seconds?

- a.100 W
- b.200 W
- c.20 W
- d.500 W

66.Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d.None of the options

67.What is the power utilised when work of 1000 J is done in 2 seconds?


- a.100 W
- b.200 W
- c.20 W
- d.500 W

68.When the charged particles move in a combined magnetic and electric field, then the force acting is known as _____.

- a. Centripetal force
- b. Centrifugal force
- c. Lorentz force
- d. Orbital force

69.SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt


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70. Find the power if the work done is 20j per hour

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

71. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

72. Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d. None of the options

73. The bending of beam of light around corners of obstacles is called

- (a) Reflection
- (b) Diffraction
- (c) Refraction
- (d) Interference

74. Magnetic field at any point inside the straight solenoid is given as _____

- a. $B = \mu_0 + nI$
- b. $B = \mu_0 + n + I$
- c. $B = \mu_0 / nI$
- d. $B = \mu_0 nI$

75. SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

76. The magnitudes of the gravitational force at distances r_1 and r_2


from the centre of a uniform sphere of radius R and mass M are F_1 and F_2 respectively.

Then

- (a) $F_1/F_2 = r_1/r_2$ if $r_1 < R$ and $r_2 < R$
- (b) $F_1/F_2 = r_1^2/r_2^2$ if $r_1 > R$ and $r_2 > R$
- (c) $F_1/F_2 = r_1/r_2$ if $r_1 > R$ and $r_2 > R$
- (d) $F_1/F_2 = r_2^2/r_1^2$ if $r_1 < R$ and $r_2 < R$

77. If 2.2 kilowatt power is being transmitted at 44KV on a 20 ohm line, then power loss will be

- (a) 0.1 watt
- (b) 1.4 watt
- (c) 100 watt
- (d) 0.05 watt


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78. Water is flowing with a velocity of 3m/s in a pipe of diameter 4 cm. This water enters another tube of diameter 2 cm. The velocity of water in this tube is

- (a) 12 m/s
- (b) 6 m/s
- (c) 3 m/s
- (d) 1.5 m/s

79. A tuning fork is sounded with vibrating strings of lengths 0.95m and 1m. It produces 6 beats with each one. The frequency of the tuning fork will be

- (a) 150 Hz
- (b) 200 Hz
- (c) 225 Hz
- (d) 234 Hz

80. Hydraulic brakes work on the principal of

- (a) Pascal's Law
- (b) Thomson's Law
- (c) Newton's Law
- (d) Bernouli's Theorem

CHEMISTRY

81. If liquids A and B form an ideal solution

- (a) The entropy of mixing is zero
- (b) The free energy of mixing is zero
- (c) The free energy as well as the entropy of mixing
- (d) The free energy mixing is maximum

82. For an ideal gas, C_V and C_P are related as :

- (a) $C_V - C_P = R$
- (b) $C_V + C_P = R$
- (c) $C_P - C_V = RT$
- (d) $C_P - C_V = R$

83. Gases deviate from ideal behaviour because molecules _____

- (a) are colourless
- (b) are spherical
- (c) attract each other
- (d) have high speeds


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84. Which of the following molecules have trigonal planar geometry?

(a) BF_3

(b) NH_3

(c) PCl_3

(d) IF

85. The elements with atomic numbers 9, 17, 35, 53, 85 are all _____

(a) halogens

(b) noble gases

(c) alkali earth metals

(d) transition metals

86. Isotopes of an element have _____

(a) Different chemical and physical properties

(b) Similar chemical and physical properties

(c) Similar chemical but different physical properties

(d) Similar physical but different chemical properties

87. The radius of an atomic nucleus is of the order of _____

(a) 10^{-10} cm

(b) 10^{-13} cm

(c) 10^{-15} cm

(d) 10^{-8} cm


88. The significant figures in 0.00051 are _____.

(a) 5

(b) 3

(c) 2

(d) 26


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89. A pure substance which contains only one type of atom is called _____.

- (a) An element
- (b) a compound
- (c) a solid
- (d) a liquid

90. Which of the following statements concerning transuranium elements is incorrect?

- (a) Atomic number > 92
- (b) Example is Thorium
- (c) Decay radioactively as they are unstable
- (d) Elements after Uranium

91. When copper chips are exposed to concentrated nitric acid, which gas is produced?

- (a) Nitrogen (III) oxide
- (b) Nitrogen (IV) oxide
- (c) Nitrogen (I) oxide
- (d) Nitrogen (II) oxide

92. What happens to the size of atoms in p-block elements when we move from left to right in the same period?

- (a) Size does not change
- (b) Size increases then decreases
- (c) Size increases
- (d) Size decreases

93. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- (a) 30 minutes
- (b) 60 minutes
- (c) 90 minutes
- (d) 120 minutes

94. Only a simple homogeneous reaction requires which of the following methods?

- (a) Integration method
- (b) Half-life period method
- (c) Graphical method
- (d) Ostwald's isolation method


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95. What effect does temperature have on the half-life of a first-order reaction?

- a) It increases
- b) It decreases
- c) It remains the same
- d) Both increases as well as decrease

96. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

97. The heat of solution or mixing has a negative side.

- a) Heat of solution
- b) Heat of dissolution
- c) Heat of reaction
- d) Heat of mixing

98. When two perfect solutions with volume V each are combined, What is the volume of the solution as a result?

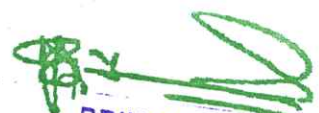
- a) V
- b) $2V$
- c) Greater than $2V$
- d) Less than $2V$

99. The electrons of Rutherford's model would be expected to lose energy because

- a. They jump on the nucleus
- b. They move randomly
- c. Radiate electromagnetic waves
- d. Escape from the atom

100. Electrons in the atom are held to the nucleus by

- a. Nuclear Force
- b. Coulomb's Force
- c. Gravitational Force
- d. Van Der Waal's Force


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2018-19 MODEL FREESHIP QUESTION PAPER

Total marks: 100

Question Paper Name: ENGINEERING

Duration: 180 min

83

Name of the Student : P. Sachin

Free ship No: AVIETG2018019

31/5/18

1. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

(b) $\{1/2, -2\}$

(c) $[2, 12]$

(d) $(-1, 2)$

2. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2]$

(c) $(2, \infty)$

(d) $(-\infty, 2) \cup (2, \infty)$

3. For any natural number n , $2^{2n} - 1$ is divisible by

(a) 2

(b) 3

(c) 4

(d) 5

4. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2]$

(c) $(2, \infty)$

(d) $(-\infty, 2) \cup (2, \infty)$

5. The largest coefficient in the expansion of $(1+x)^{10}$ is:

a. $10! / (5!)^2$

b. $10! / 5!$

c. $10! / (5! \times 4!)^2$

d. $10! / (5! \times 4!)$

6. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

(a) $\{-2, 1\}$

(b) $\{1/2, -2\}$

(c) $[2, 12]$

(d) 0

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7. If $1 - i$, is a root of the equation $x^2 + ax + b = 0$, where $a, b \in \mathbb{R}$, then the value of $a - b$ is

(a) -4

(b) 0

(c) 2

(d) 1

8. If $\tan A = 1/2$ and $\tan B = 1/3$, then the value of $A + B$ is

(a) $\pi/6$

(b) π

(c) 0

(d) $\pi/4$

9. The number of squares that can be formed on a chessboard is

a. 64

b. 160

c. 204

d. 224

10. Number of solutions of the equation $z^2 + |z|^2 = 0$ is

(a) 1

(b) 2

(c) 3

(d) infinitely many

11. If $f(x) = x^2 + 2$,
 $x \in \mathbb{R}$

then the range of $f(x)$ is

(a) $[2, \infty)$

(b) $(-\infty, 2)$

(c) $(2, 0)$

(d) $(\infty, 2)$

12. If $\sin \theta$ and $\cos \theta$ are the roots of $ax^2 - bx + c = 0$, then the relation between a , b and c will be

(a) $a^2 + b^2 + 2ac = 0$

(b) $a^2 - b^2 + 2ac = 0$

(c) $a^2 + c^2 + 2ab = 0$

(d) $a^2 - b^2 - 2ac = 0$

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13. The value of $(126)^{1/3}$ up to three decimal places is

- a. 5.011
- b. 5.012
- c. 5.013
- d. 5.014

14. If n is even in the expansion of $(a+b)^n$, the middle term is:

- a. n^{th} term
- b. $(n/2)^{\text{th}}$ term
- c. $[(n/2)-1]^{\text{th}}$ term
- d. $[(n/2)+1]^{\text{th}}$ term

15. What is the distance of $(5, 12)$ from the origin?

- a. 5 units
- b. 8 units
- c. 12 units
- d. 13 units

16. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$

17. Two lines are said to be parallel if the difference of their slope is

- a. -1
- b. 0
- c. 1
- d. None of these

18. If ${}^n P_5 = 60 {}^{n-1} P_3$, the value of n is

- a. 6
- b. 10
- c. 12
- d. 16

19. Which of the following is not a statement?

- (a) Smoking is injurious to health.
- (b) $2 + 2 = 4$
- (c) 2 is the only even prime number.
- (d) Come here.


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20. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$
- c. $x = at^2; y^2 = at^3$
- d. $x = at^2; y = 4at$

21: Relation between mean, median and mode is given by:

- (a) Mode = 2 Median – 3 Mean
- (b) Mode = 2 Median + 3 Mean
- (c) Mode = 3 Median – 2 Mean
- (d) Mode = 3 Median + 2 Mean

22. If the variance of the data is 121, the standard deviation of the data is:

- (a) 121
- (b) 11
- (c) 12
- (d) 21

23. A bag contains 5 brown and 4 white socks. Ram pulls out two socks. What is the probability that both the socks are of the same colour?

- A. 9/20
- B. 2/9
- C. 3/20
- D. 4/9

24. The derivative of $x^2 \cos x$ is

- (a) $2x \sin x - x^2 \sin x$
- (b) $2x \cos x - x^2 \sin x$
- (c) $2x \sin x - x^2 \cos x$
- (d) $\cos x - x^2 \sin x \cos x$


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25. What is the probability of getting the number 6 at least once in a regular die if it can roll it 6 times?

- A. $1 - (5/6)^6$
- B. $1 - (1/6)^6$
- C. $(5/6)^6$
- D. $(1/6)^6$

26. The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are

- (a) 1
- (b) 2
- (c) 3
- (d) 5

27. Events A and B are said to be mutually exclusive if:

- A. $P(A \cup B) = P(A) + P(B)$
- B. $P(A \cap B) = P(A) \times P(B)$
- C. $P(A \cup B) = 0$
- D. None of these

28. If set A contains 5 elements and the set B contains 6 elements, then the number of one-one and onto mappings from A to B is

- (a) 720
- (b) 120
- (c) 0
- (d) none of these

29. The centre of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is

- a. (-2, 3)
- b. $(1, -3/2)$
- c. (-4, 6)
- d. (4, -6)

30. Which of the following is a statement?

- (a) Roses are black.
- (b) Mind your own business.
- (c) Be punctual.
- (d) Do not tell lies.


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31. The negation of the statement "7 is greater than 8" is

- (a) 7 is equal to 8.
- (b) 7 is not greater than 8.
- (c) 8 is less than 7.
- (d) none of these.

32. If $x = t^2$, $y = t^3$, then $d^2y/dx^2 =$

- a. $3/2$
- b. $3/4t$
- c. $3/2t$
- d. $3t/2$

33. The area of a triangle with vertices $(-3, 0)$, $(3, 0)$ and $(0, k)$ is 9 sq. units. The value of k will be

- (a) 9
- (b) 3
- (c) -9
- (d) 6

34. If $[2p + q - 2r + 5s - 4t + 3u] = [4 - 31124]$, then the value of $p + q - r + 2s$ is

- (a) 8
- (b) 10
- (c) 4
- (d) -8

35. If A is a square matrix of order 3 and $|A| = 5$, then the value of $|2A|$ is

- (a) -10
- (b) 10
- (c) -40
- (d) 40

36. The value of c in Rolle's theorem for the function, $f(x) = \sin 2x$ in $[0, \pi/2]$ is

- a. $\pi/4$
- b. $\pi/6$
- c. $\pi/2$
- d. $\pi/3$

37. The function $f(x) = [\ln(1+ax) - \ln(1-bx)]/x$, not defined at $x=0$. The value should be assigned to f at $x=0$, so that it is continuous at $x=0$, is

- a. $a+b$
- b. $a-b$
- c. $b-a$
- d. $\ln a + \ln b$

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38. If $y = ax^2 + b$, then dy/dx at $x = 2$ is equal to

- a. $2a$
- b. $3a$
- c. $4a$
- d. None of these

39. If $x \sin(a+y) = \sin y$, then dy/dx is equal to

- a. $[\sin^2(a+y)]/\sin a$
- b. $\sin a / [\sin^2(a+y)]$
- c. $[\sin(a+y)]/\sin a$
- d. $\sin a / [\sin(a+y)]$

40. The domain of $\sin^{-1}(2x)$ is

- (a) $[0, 1]$
- (b) $[-1, 1]$
- (c) $[-1/2, 1/2]$
- (d) $[-2, 2]$

41. If $\sin^{-1}x + \sin^{-1}y = \pi/2$, then value of $\cos^{-1}x + \cos^{-1}y$ is

- (a) $\pi/2$
- (b) π
- (c) 0
- (d) $2\pi/3$

Therefore, $\cos^{-1}x + \cos^{-1}y = \pi/2$.

42. Which of the following is the principal value branch of $\cos^{-1}x$?

- (a) $[-\pi/2, \pi/2]$
- (b) $(0, \pi)$
- (c) $[0, \pi]$
- (d) $(0, \pi) - \{\pi/2\}$

43. The value of the expression $\sin [\cot^{-1} (\cos (\tan^{-1} 1))]$ is

- (a) 0
- (b) 1
- (c) $1/\sqrt{3}$
- (d) $\sqrt{2/3}$

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44. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

- (a) $m \times 3$
- (b) 3×3
- (c) $m \times n$
- (d) $3 \times n$

45) $\int (x^2 + 3) dx$ equals

- a. $24/3$
- b. $25/3$
- (c) $26/3$
- d. None of the above..

46) If $\int 2^x dx = f(x) + C$, then $f(x)$ is

- a. 2^x
- b. $2^x \log_e 2$
- (c) $2^x / \log_e 2$
- d. $2^{x+1}/x+1$

47) The number of arbitrary constants in the particular solution of a differential equation of third order is:

- A. 3
- B. 2
- C. 1
- (D) 0

48) What is the differential equation of the family of circles touching the y-axis at the origin?

- (A) $2xyy' + x^2 = y^2$
- B. $2xyy'' + x' = y^2$
- C. $2xyy' - x^2 = y^2$
- D. $xyy' + x^2 = y^2$

49. Solution of differential equation $x \cdot dy - y \cdot dx = Q$ represents:

- A. a rectangular hyperbola

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B. parabola whose vertex is at the origin
C. straight line passing through the origin
D. a circle whose centre is at the origin

50. The distance of the point (1,2,1) from the line $(x-1)/2 = (y-2)/1 = (z-3)/2$ is

- a. $2\sqrt{3}/5$
- b. $2\sqrt{5}/3$
- c. $\sqrt{5}/3$
- d. $20/3$

PHYSICS

51. Farad is the unit of _____

- a. Luminosity
- b. Wavelength
- c. Permittivity
- d. Inertia

52. symbol to represent "Amount of Substance" is _____

- a. K
- b. A
- c. Cd
- d. Mol

53. AU is the unit of _____

- a. Astronomy Unit
- b. Astronomical unit
- c. Astrological Unit
- d. Archaeological Unit

54. Dimensions of kinetic energy is the same as that of _____

- a. Acceleration
- b. Velocity
- c. Work
- d. Force.

55. among the following is the Supplementary Unit _____

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- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

56. Find the general solution of: ax^2+bx+c

- A. $\sin^{-1} y = x + c$
- B. $\sin^{-1} y/2 = x + c$
- C. $\sin^{-1} y^2 = x + c$
- D. None of the above

57. Uniform circular motion is given by the formula _____

- a. $V=u+at$
- b. $v^2-u^2=2AS$
- c. $V-U=A$
- d. none

58. Motion in a plane is called _____

- a. Motion in one dimension
- b. Motion in two dimensions
- c. Motion in three dimensions
- d. Motion in four dimensions

59. Give an example of motion in two dimensions _____

- a. Motion along a straight line in any direction
- b. Bird flying
- c. A flying kite
- d. Projectile motion.

60. The physical Quantity is

- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

61. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

62. The energy possessed by the body by virtue of its motion is known as?

- a. Chemical energy
- b. Thermal energy
- c. Potential energy
- d. Kinetic energy

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63. Find the potential energy stored in a ball of mass 5 kg placed at a height of 3 m above the ground.

- a. 121.20 J
- b. 147.15 J
- c. 227.31 J
- d. 182.21 J

64. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

65. What is the power utilised when work of 1000 J is done in 2 seconds?

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

66. Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d. None of the options

67. What is the power utilised when work of 1000 J is done in 2 seconds?

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

68. When the charged particles move in a combined magnetic and electric field, then the force acting is known as _____

- a. Centripetal force
- b. Centrifugal force
- c. Lorentz force
- d. Orbital force

69. SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

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70. Find the power if the work done is 20j per hour

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

71.State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

72.Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a.Heavy body
- b. Light body
- c. Both
- d. None of the options

73. The bending of beam of light around corners of obstacles is called

- (a) Reflection
- (b) Diffraction
- (c) Refraction
- (d) Interference

74.Magnetic field at any point inside the straight solenoid is given as——

- a. $B = \mu_0 + nI$
- b. $B = \mu_0 + n + I$
- c. $B = \mu_0 / nI$
- d. $B = \mu_0 nI$

75.SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

76.The magnitudes of the gravitational force at distances r_1 and r_2


from the centre of a uniform sphere of radius R and mass M are F_1 and F_2 respectively.

Then

- (a) $F_1/F_2 = r_1/r_2$ if $r_1 < R$ and $r_2 < R$
- (b) $F_1/F_2 = r_1^2/r_2^2$ if $r_1 > R$ and $r_2 > R$
- (c) $F_1/F_2 = r_1/r_2$ if $r_1 > R$ and $r_2 > R$
- (d) $F_1/F_2 = r_2^2/r_1^2$ if $r_1 < R$ and $r_2 < R$

77.If 2.2 kilowatt power is being transmitted at 44KV on a 20 ohm line, then power loss will be

- (a) 0.1 watt
- (b) 1.4 watt
- (c) 100 watt
- (d) 0.05 watt


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78. Water is flowing with a velocity of 3m/s in a pipe of diameter 4 cm. This water enters another tube of diameter 2 cm. The velocity of water in this tube is

- (a) 12 m/s
- (b) 6 m/s
- (c) 3 m/s
- (d) 1.5 m/s

79. A tuning fork is sounded with vibrating strings of lengths 0.95m and 1m. It produces 6 beats with each one. The frequency of the tuning fork will be

- (a) 150 Hz
- (b) 200 Hz
- (c) 225 Hz
- (d) 234 Hz

80. Hydraulic brakes work on the principal of

- (a) Pascal's Law
- (b) Thomson's Law
- (c) Newton's Law
- (d) Bernouli's Theorem

CHEMISTRY

81. If liquids A and B form an ideal solution

- (a) The entropy of mixing is zero
- (b) The free energy of mixing is zero
- (c) The free energy as well as the entropy of mixing
- (d) The free energy mixing is maximum

82. For an ideal gas, C_V and C_p are related as :

- (a) $C_V - C_p = R$
- (b) $C_V + C_p = R$
- (c) $C_p - C_V = RT$
- (d) $C_p - C_V = R$

83. Gases deviate from ideal behaviour because molecules _____

- (a) are colourless
- (b) are spherical
- (c) attract each other
- (d) have high speeds


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84. Which of the following molecules have trigonal planar geometry?

(a) BF_3

(b) NH_3

(c) PCl_3

(d) IF

85. The elements with atomic numbers 9, 17, 35, 53, 85 are all _____

(a) halogens

(b) noble gases

(c) alkali earth metals

(d) transition metals

86. Isotopes of an element have _____

(a) Different chemical and physical properties

(b) Similar chemical and physical properties

(c) Similar chemical but different physical properties

(d) Similar physical but different chemical properties

87. The radius of an atomic nucleus is of the order of _____

(a) 10^{-10} cm

(b) 10^{-13} cm

(c) 10^{-15} cm

(d) 10^{-8} cm

88. The significant figures in 0.00051 are _____.

(a) 5

(b) 3

(c) 2

(d) 26


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89. A pure substance which contains only one type of atom is called _____.

- (a) An element
- (b) a compound
- (c) a solid
- (d) a liquid

90. Which of the following statements concerning transuranium elements is incorrect?

- a) Atomic number > 92
- b) Example is Thorium
- c) Decay radioactively as they are unstable
- d) Elements after Uranium

91. When copper chips are exposed to concentrated nitric acid, which gas is produced?

- a) Nitrogen (III) oxide
- b) Nitrogen (IV) oxide
- c) Nitrogen (I) oxide
- d) Nitrogen (II) oxide

92. What happens to the size of atoms in p-block elements when we move from left to right in the same period?

- a) Size does not change
- b) Size increases then decreases
- c) Size increases
- d) Size decreases

93. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

94. Only a simple homogeneous reaction requires which of the following methods?

- a) Integration method
- b) Half-life period method
- c) Graphical method
- d) Ostwald's isolation method


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95. What effect does temperature have on the half-life of a first-order reaction?

- a) It increases
- b) It decreases
- c) It remains the same
- d) Both increases as well as decrease

96. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

97. The heat of solution or mixing has a negative side.

- a) Heat of solution
- b) Heat of dissolution
- c) Heat of reaction
- d) Heat of mixing

98. When two perfect solutions with volume V each are combined, What is the volume of the solution as a result?


- a) V
- b) $2V$
- c) Greater than $2V$
- d) Less than $2V$

99. The electrons of Rutherford's model would be expected to lose energy because

- a. They jump on the nucleus
- b. They move randomly
- c. Radiate electromagnetic waves
- d. Escape from the atom

100. Electrons in the atom are held to the nucleus by

- a. Nuclear Force
- b. Coulomb's Force
- c. Gravitational Force
- d. Van Der Waal's Force


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2018-19 MODEL FREESHIP QUESTION PAPER Total marks: 100

Question Paper Name: ENGINEERING Duration: 180 min

72

Name of the Student : Anthandaakupender Reddy Free ship No: AVIH2018063
31-05-2019

1. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

- (a) $\{-2, 1\}$ (b) $\{1/2, -2\}$
(c) $[2, 12]$ (d) $(-1, 2)$

2. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is

- (a) $[2, \infty)$ (b) $(-\infty, 2]$
(c) $(2, \infty)$ (d) $(-\infty, 2) \cup (2, \infty)$

3. For any natural number n , $2^{2n} - 1$ is divisible by

- (a) 2
(b) 3
(c) 4
(d) 5

4. If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is


- (a) $[2, \infty)$
(b) $(-\infty, 2]$
(c) $(2, \infty)$
(d) $(-\infty, 2) \cup (2, \infty)$

5. The largest coefficient in the expansion of $(1+x)^{10}$ is:

- a. $10! / (5!)^2$
b. $10! / 5!$
c. $10! / (5! \times 4!)^2$
d. $10! / (5! \times 4!)$

6. What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?

- (a) $\{-2, 1\}$ (b) $\{1/2, -2\}$
(c) $[2, 12]$ (d) 0


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7. If $1 - i$, is a root of the equation $x^2 + ax + b = 0$, where $a, b \in \mathbb{R}$, then the value of $a - b$ is

- (a) -4
- (b) 0
- (c) 2
- (d) 1

8. If $\tan A = 1/2$ and $\tan B = 1/3$, then the value of $A + B$ is

- (a) $\pi/6$
- (b) π
- (c) 0
- (d) $\pi/4$

9. The number of squares that can be formed on a chessboard is

- a. 64
- b. 160
- c. 204
- d. 224

10. Number of solutions of the equation $z^2 + |z|^2 = 0$ is

- (a) 1
- (b) 2
- (c) 3
- (d) infinitely many

11. If $f(x) = x^2 + 2/x$, $x \in \mathbb{R}$, then the range of $f(x)$ is

- (a) $[2, \infty)$
- (b) $(-\infty, 2)$
- (c) $(2, 0)$
- (d) $(\infty, 2)$

12. If $\sin \theta$ and $\cos \theta$ are the roots of $ax^2 - bx + c = 0$, then the relation between a, b and c will be

- (a) $a^2 + b^2 + 2ac = 0$
- (b) $a^2 - b^2 + 2ac = 0$
- (c) $a^2 + c^2 + 2ab = 0$
- (d) $a^2 - b^2 - 2ac = 0$


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13. The value of $(126)^{1/3}$ up to three decimal places is

- a. 5.011
- b. 5.012
- c. 5.013
- d. 5.014

14. If n is even in the expansion of $(a+b)^n$, the middle term is:

- a. n^{th} term
- b. $(n/2)^{\text{th}}$ term
- c. $[(n/2)-1]^{\text{th}}$ term
- d. $[(n/2)+1]^{\text{th}}$ term

15. What is the distance of (5, 12) from the origin?

- a. 5 units
- b. 8 units
- c. 12 units
- d. 13 units

16. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$

17. Two lines are said to be parallel if the difference of their slope is

- a. -1
- b. 0
- c. 1
- d. None of these

18. If ${}^n P_5 = 60 {}^{n-1} P_3$, the value of n is

- a. 6
- b. 10
- c. 12
- d. 16

19. Which of the following is not a statement?

- (a) Smoking is injurious to health.
- (b) $2 + 2 = 4$
- (c) 2 is the only even prime number.
- (d) Come here.


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20. The parametric equation of the parabola $y^2 = 4ax$ is

- a. $x = at; y = 2at$
- b. $x = at^2; y = 2at$
- c. $x = at^2; y^2 = at$
- d. $x = at^2; y = 4at$

21: Relation between mean, median and mode is given by:

- (a) Mode = 2 Median – 3 Mean
- (b) Mode = 2 Median + 3 Mean
- (c) Mode = 3 Median – 2 Mean
- (d) Mode = 3 Median + 2 Mean

22. If the variance of the data is 121, the standard deviation of the data is:

- (a) 121
- (b) 11
- (c) 12
- (d) 21

23. A bag contains 5 brown and 4 white socks. Ram pulls out two socks. What is the probability that both the socks are of the same colour?

- A. 9/20
- B. 2/9
- C. 3/20
- D. 4/9

24. The derivative of $x^2 \cos x$ is

- (a) $2x \sin x - x^2 \sin x$
- (b) $2x \cos x - x^2 \sin x$
- (c) $2x \sin x - x^2 \cos x$
- (d) $\cos x - x^2 \sin x \cos x$


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25. What is the probability of getting the number 6 at least once in a regular die if it can roll it 6 times?

- A. $1 - (5/6)^6$
- B. $1 - (1/6)^6$
- C. $(5/6)^6$
- D. $(1/6)^6$

26. The maximum number of equivalence relations on the set $A = \{1, 2, 3\}$ are

- (a) 1
- (b) 2
- (c) 3
- (d) 5

27. Events A and B are said to be mutually exclusive if:

- A. $P(A \cup B) = P(A) + P(B)$
- B. $P(A \cap B) = P(A) \times P(B)$
- C. $P(A \cup B) = 0$
- D. None of these

28. If set A contains 5 elements and the set B contains 6 elements, then the number of one-one and onto mappings from A to B is

- (a) 720
- (b) 120
- (c) 0
- (d) none of these

29. The centre of the circle $4x^2 + 4y^2 - 8x + 12y - 25 = 0$ is

- a. (-2, 3)
- b. (1, -3/2)
- c. (-4, 6)
- d. (4, -6)

30. Which of the following is a statement?

- (a) Roses are black.
- (b) Mind your own business.
- (c) Be punctual.
- (d) Do not tell lies.


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31. The negation of the statement "7 is greater than 8" is

- (a) 7 is equal to 8.
- (b) 7 is not greater than 8.
- (c) 8 is less than 7.
- (d) none of these.

32. If $x = t^2$, $y = t^3$, then $d^2y/dx^2 =$

- a. $3/2$
- b. $3/4t$
- c. $3/2t$
- d. $3t/2$

33. The area of a triangle with vertices $(-3, 0)$, $(3, 0)$ and $(0, k)$ is 9 sq. units. The value of k will be

- (a) 9
- (b) 3
- (c) -9
- (d) 6

34. If $[2p + q - 2r + 5s - 4t + 3u] = [4 - 31124]$, then the value of $p + q - r + 2s$ is

- (a) 8
- (b) 10
- (c) 4
- (d) -8

35. If A is a square matrix of order 3 and $|A| = 5$, then the value of $|2A'|$ is

- (a) -10
- (b) 10
- (c) -40
- (d) 40

36. The value of c in Rolle's theorem for the function, $f(x) = \sin 2x$ in $[0, \pi/2]$ is

- a. $\pi/4$
- b. $\pi/6$
- c. $\pi/2$
- d. $\pi/3$

37. The function $f(x) = [\ln(1+ax) - \ln(1-bx)]/x$, not defined at $x=0$. The value should be assigned to f at $x=0$, so that it is continuous at $x=0$, is

- a. $a+bb$. $a-b$
- c. $b-a$
- d. $\ln a + \ln b$

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38. If $y = ax^2 + b$, then dy/dx at $x = 2$ is equal to

- a. $2a$
- b. $3a$
- c. $4a$
- d. None of these

39. If $x \sin(a+y) = \sin y$, then dy/dx is equal to

- a. $[\sin^2(a+y)]/\sin a$
- b. $\sin a / [\sin^2(a+y)]$
- c. $[\sin(a+y)]/\sin a$
- d. $\sin a / [\sin(a+y)]$

40. The domain of $\sin^{-1}(2x)$ is

- (a) $[0, 1]$
- (b) $[-1, 1]$
- (c) $[-1/2, 1/2]$
- (d) $[-2, 2]$

41. If $\sin^{-1}x + \sin^{-1}y = \pi/2$, then value of $\cos^{-1}x + \cos^{-1}y$ is

- (a) $\pi/2$
- (b) π
- (c) 0
- (d) $2\pi/3$

Therefore, $\cos^{-1}x + \cos^{-1}y = \pi/2$.

42. Which of the following is the principal value branch of $\cos^{-1}x$?

- (a) $[-\pi/2, \pi/2]$
- (b) $(0, \pi)$
- (c) $[0, \pi]$
- (d) $(0, \pi) - \{\pi/2\}$

43. The value of the expression $\sin[\cot^{-1}(\cos(\tan^{-1}1))]$ is

- (a) 0
- (b) 1
- (c) $1/\sqrt{3}$
- (d) $\sqrt{2/3}$


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44. If A and B are two matrices of the order $3 \times m$ and $3 \times n$, respectively, and $m = n$, then the order of matrix $(5A - 2B)$ is

- (a) $m \times 3$
- (b) 3×3
- (c) $m \times n$
- (d) $3 \times n$

45) $\int (x^2 + 3) dx$ equals

- a. $24/3$
- b. $25/3$
- c. $26/3$
- d. None of the above..

46) If $\int 2^x dx = f(x) + C$, then $f(x)$ is

- a. 2^x
- b. $2^x \log_e 2$
- c. $2^x / \log_e 2$
- d. $2^{x+1} / x+1$

47) The number of arbitrary constants in the particular solution of a differential equation of third order is:

- A. 3
- B. 2
- C. 1
- D. 0

48): What is the differential equation of the family of circles touching the y-axis at the origin?

- A. $2xyy' + x^2 = y^2$
- B. $2xyy'' + x' = y^2$
- C. $2xyy' - x^2 = y^2$
- D. $xyy' + x^2 = y^2$

49. Solution of differential equation $x.dy - y.dx = Q$ represents:

- A. a rectangular hyperbola


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B. parabola whose vertex is at the origin
C. straight line passing through the origin
D. a circle whose centre is at the origin

50. The distance of the point (1,2,1) from the line $(x-1)/2 = (y-2)/1 = (z-3)/2$ is

- a. $2\sqrt{3}/5$
- b. $2\sqrt{5}/3$
- c. $\sqrt{5}/3$
- d. $20/3$

PHYSICS

51. Farad is the unit of _____

- a. Luminosity
- b. Wavelength
- c. Permittivity
- d. Inertia

52. symbol to represent "Amount of Substance" is _____

- a. K
- b. A
- c. Cd
- d. Mol

53. AU is the unit of _____

- a. Astronomy Unit
- b. Astronomical unit
- c. Astrological Unit
- d. Archaeological Unit

54. Dimensions of kinetic energy is the same as that of _____

- a. Acceleration
- b. Velocity
- c. Work
- d. Force.

55. among the following is the Supplementary Unit _____


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- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

56. Find the general solution of: $ax^2 + bx + c$

A. $\sin^{-1} y = x + c$

B. $\sin^{-1} y/2 = x + c$

C. $\sin^{-1} y^2 = x + c$

D. None of the above

57. Uniform circular motion is given by the formula _____

- a. $V = u + at$ b. $v^2 - u^2 = 2AS$ c. $V - U = A$ d. none

58. Motion in a plane is called _____

- a. Motion in one dimension
- b. Motion in two dimensions
- c. Motion in three dimensions
- d. Motion in four dimensions

59. Give an example of motion in two dimensions _____

- a. Motion along a straight line in any direction
- b. Bird flying
- c. A flying kite
- d. Projectile motion.

60. The physical Quantity is

- a. Mass
- b. Time
- c. Solid angle
- d. Luminosity

61. State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

62. The energy possessed by the body by virtue of its motion is known as?

- a. Chemical energy
- b. Thermal energy
- c. Potential energy
- d. Kinetic energy


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63..Find the potential energy stored in a ball of mass 5 kg placed at a height of 3 m above the ground.

- a. 121.20 J
- b. 147.15 J
- c. 227.31 J
- d. 182.21 J

64.State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

65.What is the power utilised when work of 1000 J is done in 2 seconds?

- a.100 W
- b.200 W
- c.20 W
- d.500 W

66. Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a. Heavy body
- b. Light body
- c. Both
- d. None of the options

67.What is the power utilised when work of 1000 J is done in 2 seconds?

- a.100 W
- b.200 W
- c.20 W
- d.500 W

68. When the charged particles move in a combined magnetic and electric field, then the force acting is known as _____.

- a. Centripetal force
- b. Centrifugal force
- c. Lorentz force
- d. Orbital force

69.SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt


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70. Find the power if the work done is 20j per hour

- a. 100 W
- b. 200 W
- c. 20 W
- d. 500 W

71.State true or false: According to Equivalence of Mass and Energy, it states that mass and energy are NOT interconvertible.

- a. True
- b. False

72.Which one has higher kinetic energy? Both light and heavy bodies have equal momenta.

- a.Heavy body
- b. Light body
- c. Both
- d. None of the options

73. The bending of beam of light around corners of obstacles is called

- (a) Reflection
- (b) Diffraction
- (c) Refraction
- (d) Interference

74.Magnetic field at any point inside the straight solenoid is given as——

- a. $B = \mu_0 + nI$
- b. $B = \mu_0 + n \cdot I$
- c. $B = \mu_0 / nI$
- d. $B = \mu_0 nI$

75.SI unit of the magnetic field is _____.

- a. Dyne
- b. Ohm
- c. Tesla
- d. Volt

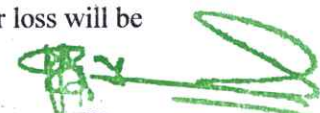
76.The magnitudes of the gravitational force at distances r_1 and r_2 from the centre of a uniform sphere of radius R and mass M are F_1 and F_2 respectively.

Then

- (a) $F_1/F_2 = r_1/r_2$ if $r_1 < R$ and $r_2 < R$
- (b) $F_1/F_2 = r_1^2/r_2^2$ if $r_1 > R$ and $r_2 > R$
- (c) $F_1/F_2 = r_1/r_2$ if $r_1 > R$ and $r_2 > R$
- (d) $F_1/F_2 = r_2^2/r_1^2$ if $r_1 < R$ and $r_2 < R$

77.If 2.2 kilowatt power is being transmitted at 44KV on a 20 ohm line, then power loss will be

- (a) 0.1 watt
- (b) 1.4 watt
- (c) 100 watt
- (d) 0.05 watt


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78. Water is flowing with a velocity of 3m/s in a pipe of diameter 4 cm. This water enters another tube of diameter 2 cm. The velocity of water in this tube is

- (a) 12 m/s
- (b) 6 m/s
- (c) 3 m/s
- (d) 1.5 m/s

79. A tuning fork is sounded with vibrating strings of lengths 0.95m and 1m. It produces 6 beats with each one. The frequency of the tuning fork will be

- (a) 150 Hz
- (b) 200 Hz
- (c) 225 Hz
- (d) 234 Hz

80. Hydraulic brakes work on the principal of

- (a) Pascal's Law
- (b) Thomson's Law
- (c) Newton's Law
- (d) Bernouli's Theorem

CHEMISTRY

81. If liquids A and B form an ideal solution


- (a) The entropy of mixing is zero
- (b) The free energy of mixing is zero
- (c) The free energy as well as the entropy of mixing
- (d) The free energy mixing is maximum

82. For an ideal gas, C_V and C_P are related as :

- (a) $C_V - C_P = R$
- (b) $C_V + C_P = R$
- (c) $C_P - C_V = RT$
- (d) $C_P - C_V = R$

83. Gases deviate from ideal behaviour because molecules _____

- (a) are colourless
- (b) are spherical
- (c) attract each other
- (d) have high speeds


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84. Which of the following molecules have trigonal planar geometry?

(a) BF_3

(b) NH_3

(c) PCl_3

(d) IF_3

85. The elements with atomic numbers 9, 17, 35, 53, 85 are all _____

(a) halogens

(b) noble gases

(c) alkali earth metals

(d) transition metals

86. Isotopes of an element have _____

(a) Different chemical and physical properties

(b) Similar chemical and physical properties

(c) Similar chemical but different physical properties

(d) Similar physical but different chemical properties

87. The radius of an atomic nucleus is of the order of _____

(a) 10^{-10} cm

(b) 10^{-13} cm

(c) 10^{-15} cm

(d) 10^{-8} cm

88. The significant figures in 0.00051 are _____.

(a) 5

(b) 3

(c) 2

(d) 26


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89. A pure substance which contains only one type of atom is called _____.

- (a) An element
- (b) a compound
- (c) a solid
- (d) a liquid

90. Which of the following statements concerning transuranium elements is incorrect?

- a) Atomic number > 92
- b) Example is Thorium
- c) Decay radioactively as they are unstable
- d) Elements after Uranium

91. When copper chips are exposed to concentrated nitric acid, which gas is produced?

- a) Nitrogen (III) oxide
- b) Nitrogen (IV) oxide
- c) Nitrogen (I) oxide
- d) Nitrogen (II) oxide

92. What happens to the size of atoms in p-block elements when we move from left to right in the same period?

- a) Size does not change
- b) Size increases then decreases
- c) Size increases
- d) Size decreases

93. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

94. Only a simple homogeneous reaction requires which of the following methods?

- a) Integration method
- b) Half-life period method
- c) Graphical method
- d) Ostwald's isolation method


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95. What effect does temperature have on the half-life of a first-order reaction?

- a) It increases
- b) It decreases
- c) It remains the same
- d) Both increases as well as decrease

96. In 30 minutes, a first-order reaction is 50% complete. Calculate the amount of time it took to complete 87.5 percent of the reaction.

- a) 30 minutes
- b) 60 minutes
- c) 90 minutes
- d) 120 minutes

97. The heat of solution or mixing has a negative side.

- a) Heat of solution
- b) Heat of dissolution
- c) Heat of reaction
- d) Heat of mixing

98. When two perfect solutions with volume V each are combined, What is the volume of the solution as a result?

- a) V
- b) $2V$
- c) Greater than $2V$
- d) Less than $2V$

99. The electrons of Rutherford's model would be expected to lose energy because

- a. They jump on the nucleus
- b. They move randomly
- c. Radiate electromagnetic waves
- d. Escape from the atom

100. Electrons in the atom are held to the nucleus by

- a. Nuclear Force
- b. Coulomb's Force
- c. Gravitational Force
- d. Van Der Waal's Force

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AVANTHI FREESHIP STUDENTS ACADEMIC YEAR 2018-2019:

The following is the list of students 66 are selected from AvanathiFreeship Policy test conducted on 31-05-2018 and 20-06-2018. Based on the merit of the test results the fee concessions is given to the below students.

Freeship Test Marks:

S.No	Freship No	Name	Marks
1	AVIH2018026	BOMMMOJU RANJITH	85
2	AVIH2018011	DEGALA ASHA	85
3	AVIH2018023	MUNDLA ANUSHA	84
4	AVIH2018041	VORUGANTI SHRAVANI	83
5	AVIH2018019	R SACHIN	83
6	AVIH2018035	K SANDEEP	81
7	AVIH2018007	K BHARATH KUMAR REDDY	80
8	AVIH2018003	VADLURI SUMANTH	79
9	AVIH2018014	JOSHI ANIRUDH CHARY	79
10	AVIH2018059	NAVEEN KUMAR	79
11	AVIH2018065	GANDHE PRAVIN	74
12	AVIH2018062	PALLERLA GOPI REDDY	74
13	AVIH2018063	ANTHANOLLA KUPENDER REDDY	72
14	AVIH2018001	SAMA SAIREDDY	72
15	AVIH2018004	KARANAM DIVYA BHANU	71
16	AVIH2018010	BHUPANI VENKATA SAI KRISHNA	70
17	AVIH2018020	BADDULA SAI KRISHNA	69
18	AVIH2018005	BARLA SOUMY	68
19	AVIH2018022	CHALLAGUNDLA SRAVYA	68
20	AVIH2018008	KOLANU AJAYKUMAR	67
21	AVIH2018012	PIDUGU VIVEK	67
22	AVIH2018002	NAGATI LIKHITH KUMAR	67
23	AVIH2018024	SATTU SAIKIRAN	67
24	AVIH2018025	DASARI VIVEK	67
25	AVIH2018009	BOMMIREDDY NIKHIL VARDHAN REDDY	67
26	AVIH2018029	CHELLINGI DURGA SAITEJA	67
27	AVIH2018030	CHINTAPALLI RAMYASRI	67
28	AVIH2018027	GOPAGONI BHARATH	67
29	AVIH2018036	MAINAMPATI MEGHANA REDDY	67

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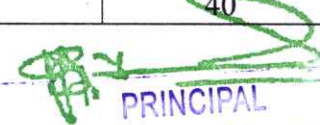
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30	AVIH2018028	POLOJU SHIVA KUMAR	67
31	AVIH2018013	KUNCHALA NAVYA	65
32	AVIH2018039	NIMMALA ROHITH REDDY	65
33	AVIH2018040	KANDE AKHIL SAI	62
34	AVIH2018042	ARIKATLA SRAVANI	61
35	AVIH2018038	DINDU SIDDHARTHA GOUD	61
36	AVIH2018043	GANJI RAHUL	60
37	AVIH2018044	KANDIMALLA KIRAN KUMAR REDDY	60
38	AVIH2018021	MARAM NAGARJUNA REDDY	60
39	AVIH2018037	PARSHAPAG KEVINMATTHEW	60
40	AVIH2018052	SEERVI SUNIL	60
41	AVIH2018033	CHALLA NITHISH REDDY	60
42	AVIH2018045	CHOLLOTI AKANKSHA	60
43	AVIH2018046	JINKALA ANIL KUMAR REDDY	59
44	AVIH2018053	SANGARS SWETHA SRI	59
45	AVIH2018031	DASARI SAI KAVYA	50
46	AVIH2018047	CHENNU PAVANI	45
47	AVIH2018048	JALAGIRI RAHULMUDIRAJ	45
48	AVIH2018034	PALANATI SAI VAMSHI	45
49	AVIH2018051	GUNAMONI VINAY	45
50	AVIH2018049	MOHAMMED FARHAN	45
51	AVIH2018050	PULIPATI SHYAMSUNDER	45
52	AVIH2018015	R SURESH REDDY	45
53	AVIH2018054	BOYA MOHIT	45
54	AVIH2018055	GURIJALA KEERHI SAGAR	45
55	AVIH2018018	KONDRAJU GOPI RAJU	45
56	AVIH2018032	POLEPALLY NAGARAJU	45
57	AVIH2018016	SURKANTI NAVJEEVAN REDDY	45
58	AVIH2018017	CHERUKUMALLI VASU BABU	45
59	AVIH2018056	SARIKONDA DORYA SHIVANANDI RAJU	45
60	AVIH2018057	R PRAVEEN	45
61	AVIH2018060	D SAI RAJ	44
62	AVIH2018061	RACHURI AISHWARYA	44
63	AVIH2018066	VALAVALA VENKATA SANTOSH	44
64	AVIH2018006	NAMBI NANDINI	42
65	AVIH2018064	NIKHIL	42
66	AVIH2018058	BOPPA MADHU	40


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Gunthapally,

Date: 01-08-2018.

From

The Principal,
Avanthi Institute of Engineering & Technology,
Gunthapally.

To

Chairperson,
Governing Body (GB),
Avanthi Institute of Engineering & Technology,
Gunthapally.

Dear Sir/Madam

Sub: Request to sanction of Freeship Amount.

Reference: 1. AvanthiFreeshipInternal Policy.

This is to inform you that Avanthi Institute of Engineering & Technology conducted an exam "AvanthiFreeship Policy Test" on 31-05-2018 and 20-06-2018 to the students who are willing to join in B category seats of first year B.Tech program for the academic year 2018-2019. Based on their performance in the test, they were awarded marks and eligibility for Freeships in accordance with the rules and regulations of Freeship Internal Policy. I enclose the list of 66 students who are qualified in the test for your reference. In this regard, I request you to please forward this students list to the Governing Body for sanctioning the freeships amount for further proceedings.

The details are also enclosed for your consideration

Thanking you sir

Yours faithfully,



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The following is the list of students 66 are selected from AvanthiFreeshippolicy test. Based on the merit of the results the fee concession is given to the below students.

S.No	HALL TICKET NO	STUDENT NAME	AMOUNT
1	18Q61A0465	SAMA SAIREDDY	20000
2	18Q61A0558	NAGATI LIKHITH KUMAR	15000
3	18Q61A0225	VADLURI SUMANTH	25000
4	18Q61A0458	KARANAM DIVYA BHANU	19000
5	18Q61A0536	BARLA SOUMY	16500
6	18Q61A0553	NAMBI NANDINI	2000
7	18Q61A05A3	K BHARATH KUMAR REDDY	26000
8	18Q61A0460	KOLANU AJAYKUMAR	15500
9	18Q61A0447	BOMMIREDDY NIKHIL VARDHAN REDDY	15000
10	18Q61A0446	BHUPANI VENKATA SAI KRISHNA	18000
11	18Q61A0222	DEGALA ASHA	30000
12	18Q61A0463	PIDUGU VIVEK	15500
13	18Q61A0540	KUNCHALA NAVYA	14000
14	18Q61A0306	JOSHI ANIRUDH CHARY	25000
15	18Q61A0560	R SURESH REDDY	5000
16	18Q61A05A7	SURKANTI NAVJEEVAN REDDY	5000
17	18Q61A05B3	CHERUKUMALLI VASU BABU	5000
18	18Q61A0599	KONDRAJU GOPI RAJU	5000
19	18Q61A0307	R SACHIN	28000
20	18Q61A0544	BADDULA SAI KRISHNA	17000
21	18Q61A0551	MARAM NAGARJUNA REDDY	10000
22	18Q61A0449	CHALLAGUNDLA SRAVYA	16500
23	18Q61A0224	MUNDLA ANUSHA	29000
24	18Q61A05A6	SATTU SAIKIRAN	15000
25	18Q61A05B0	DASARI VIVEK	15000
26	18Q61A0221	BOMMMOJU RANJITH	30000
27	18Q61A0454	GOPAGONI BHARATH	15000
28	18Q61A0464	POLOJU SHIVA KUMAR	15000
29	18Q61A0450	CHELLINGI DURGA SAITEJA	15000
30	18Q61A0452	CHINTAPALLI RAMYASRI	15000
31	18Q61A0537	DASARI SAI KAVYA	6000
32	18Q61A05A1	POLEPALLY NAGARAJU	15000

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



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33	18Q61A05B2	CHALLA NITHISH REDDY	10000
34	18Q61A0541	PALANATI SAI VAMSHI	5000
35	18Q61A0223	K SANDEEP	27500
36	18Q61A0461	MAINAMPATI MEGHANA REDDY	15000
37	18Q61A0555	PARSHAPAG KEVINMATTHEW	10000
38	18Q61A0597	DINDU SIDDHARTHA GOUD	11000
39	18Q61A0462	NIMMALA ROHITH REDDY	13000
40	18Q61A0457	KANDE AKHIL SAI	12000
41	18Q61A0459	VORUGANTI SHRAVANI	28000
42	18Q61A0543	ARIKATLA SRAVANI	11000
43	18Q61A0538	GANJI RAHUL	10000
44	18Q61A0539	KANDIMALLA KIRAN KUMAR REDDY	10000
45	18Q61A0453	CHOLLOTI AKANKSHA	10000
46	18Q61A0456	JINKALA ANIL KUMAR REDDY	9500
47	18Q61A0451	CHENNU PAVANI	6000
48	18Q61A0549	JALAGIRI RAHULMUDIRAJ	5500
49	18Q61A0552	MOHAMMED FARHAN	5000
50	18Q61A0557	PULIPATI SHYAMSUNDER	5000
51	18Q61A0548	GUNAMONI VINAY	5000
52	18Q61A05B1	SEERVI SUNIL	10000
53	18Q61A0542	SANGARS SWETHA SRI	9000
54	18Q61A0596	BOYA MOHIT	5000
55	18Q61A0598	GURIJALA KEERHI SAGAR	5000
56	18Q61A05A2	SARIKONDA DORYA SHIVANANDI RAJU	4000
57	18Q61A05A4	R PRAVEEN	3500
58	18Q61A0448	BOPPA MADHU	1000
59	18Q61A0308	NAVEEN KUMAR	25000
60	18Q61A0546	D SAI RAJ	3000
61	18Q61A05A5	RACHURI AISHWARYA	3000
62	18Q61A0554	PALLERLA GOPI REDDY	21000
63	18Q61A0444	ANTHANOLLA KUPENDER REDDY	20000
64	18Q61A05B5	NIKHIL	2000
65	18Q61A0455	GANDHE PRAVIN	21500
66	18Q61A05A8	VALAVALA VENKATA SANTOSH	2500

Total 66 Students

Amount :8,52,000


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Our institution committed to provide freeships to poor and economically backward students. It is applicable to the students who do not have parents or either father or mother has lost their lives they could avail the opportunity. We also offer freeships whose parental annual income less than one lakh. We ensure that this financial support will help the students to reach their goals. Here we are providing the list of students to whom we have provided freeship from college along with their requested letters.

S.No	Name of the student	Rool No	Amount
1	GURRALA SRI KANYA	17Q61A0514	60000
2	DEVI REDDY POOJA	17Q61A0567	2000
3	MYGAPU VENKATA SAI PRADEEPTHI	17Q61A0574	12000
4	VADAKATTU VIBHAVI	17Q61A0575	1000
5	VISHNUBHOTLA DURGA SRI VALLI	17Q61A0580	5000
6	ARRA ANOOP REDDY	17Q61A0404	1500
7	CHERUKU PRUDHVI	17Q61A0470	25000
8	DHARMA UDHAY KUMAR REDDY	17Q61A0472	15000
9	GANJI VINAY	17Q61A0473	15000
10	GURRAM SOWMYA	17Q61A0474	10000
11	K NIKHIL REDDY	17Q61A0475	5000
12	KADARI VINAY	17Q61A0476	20000
13	KOTLA HARSHAVARDHAN	17Q61A0477	12000
14	LASKARI VISHAL	17Q61A0478	15000
15	RUDRARAM KEERTHI	17Q61A0483	10000
16	DHONDI AKHIL	18Q65A0425	35000
17	KUMARI MEGHA	17Q61A0207	2000
18	PRITI KUMARI	17Q61A0214	2000
19	SILVERU RAVI KUMAR	17Q61A0217	15000
20	MADIGA THARUNTEJA	17Q61A0218	25000
21	AKSHINTHALA SUPRIYA	18Q65A0213	25000
22	BADIGICHALA RAGHAVENDRA	18Q65A0214	20000
23	BANOTH PREMKUMAR	18Q65A0215	30000

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24	BONTHA SRIKANTH	18Q65A0216	32000
25	DESHAMONI SHIVA	18Q65A0217	35000
26	DEVARAKONDA RAJITHA	18Q65A0218	30000
27	ERABATHULA JAGADHISHKUMAR	18Q65A0219	30000
28	GUGULOTH BINDU	18Q65A0220	30000
29	KONDIVALASA SURENDRA	18Q65A0221	30000
30	M D AMEER SOHAIL	18Q65A0222	30000
31	MADDULA RANJITH	18Q65A0223	30000
32	MAIDAM SHYALAJA	18Q65A0224	30000
33	MD AHIMADH	18Q65A0225	25000
34	MOGILIPAKA VAMSHI	18Q65A0226	25000
35	NADIKUDI YASHWANTH	18Q65A0227	26000
36	PAYYAVULA PAVANKUMAR	18Q65A0228	30000
37	RAIKINDI SAI KUMAR	18Q65A0229	25000
38	SATHYAMOLLA HARISH GOUD	18Q65A0230	30000
39	SIRRA PRUTHVI GOUD	18Q65A0231	30000
40	SUDINI KARTHIK REDDY	18Q65A0232	28000
41	T HEMANTH KUMAR	18Q65A0233	30000
42	VAKITI SRIKANTH REDDY	18Q65A0234	20000
43	SANIKOMMU RAJESH	17Q61A0326	18000
44	DESHAGONI RAKESH	17Q61A0327	20000
45	BADISHA VAMSHI	18Q65A0325	30000
46	CHILUKURI SHIVA	18Q65A0326	25000
47	DYAGALA AJAY KUMAR	18Q65A0327	30000
48	GADU RAHUL	18Q65A0328	20000
49	JANAPATI SANDEEP	18Q65A0329	25000
50	KADERAM MANIKANTA	18Q65A0330	30000
51	MADGANI SRINATH	18Q65A0331	30000
52	P SAI SRAVAN GOUD	18Q65A0332	25000
53	PONNALA SRIKANTH	18Q65A0333	30000
54	RAMAVATH RAVI KUMAR	18Q65A0334	30000

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55	RAVVA SHASHIDHAR	18Q65A0335	30000
56	SYED YAKUB PASHA	18Q65A0336	30000
57	VADTHYAVATH CHANDRASHEKHAR	18Q65A0337	30000
58	AMIREDDY MANOJ KUMAR REDDY	16Q61A0226	20000
59	PELURI VANAJAKSHI	16Q61A0227	13000
60	A SHIVA KUMAR YADAV	17Q65A0213	30000
61	B SUMANTH	17Q65A0214	25000
62	BATHULA RAJKUMAR	17Q65A0215	32000
63	BOTTUMINCHI DEVENDEER RAO	17Q65A0216	30000
64	CHILVERU VINAY KUMAR	17Q65A0217	25000
65	K JAGADEESH KUAMR	17Q65A0218	25000
66	K RAJU	17Q65A0219	25000
67	KETHAVATH RAVINAIK	17Q65A0220	30000
68	M SATYANARAYANA	17Q65A0221	25000
69	MALLEPOOLA SRAVAN KUMAR	17Q65A0222	30000
70	MUCHAKURTHI SRAVAN KUMAR	17Q65A0223	35000
71	NAKKA ROHITH	17Q65A0224	25000
72	P VINEETH	17Q65A0225	30000
73	PASHAM MADHUSUDHAN	17Q65A0226	35000
74	PUTNURI ROHITH	17Q65A0227	25000
75	PUNNA SAMPATH KUMAR	17Q65A0228	35000
76	ENUKONDA HARIKRISHAN	16Q61A0339	20000
77	AGNIHOTRI GOVARDHAN	17Q65A0335	30000
78	BHARATHAPU SAI KUMAR	17Q65A0336	30000
79	BHEEMIDI SUKHENDER REDDY	17Q65A0337	30000
80	KETHAVATH JAGAN BABU	17Q65A0339	35000
81	KUMAVATH MAHENDHAR	17Q65A0340	30000
82	V AVINASH	17Q65A0341	30000
83	VALLALA VISHNU KUMAR	17Q65A0342	30000
84	VEERAMANENI PAVAN	17Q65A0343	25000
85	VEMULA PRASHANTHI	17Q65A0344	30000

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86	DANGETI MOHITH BABU	16Q61A0566	5700
87	V MANASA	16Q61A0574	27000
88	VENNA NAGA SAI REDDY	16Q61A0592	10000
89	JAMMICHEDU SONALI	16Q61A0433	2000
90	KUSHANENI SAKSHI	16Q61A0451	20000
91	SIMHADRI KRISHNASAI	16Q61A0488	2000
92	B OMPRAKASH REDDY	16Q61A04A5	15000
93	DAVALAKUNDA GOUTHAM SHETTY	16Q61A04A7	10000
94	P AKHILA	16Q61A04B1	9500
95	BONAGIRI RAMYA	16Q61A04B7	15000
96	MANDAPALLY SAILAXMI	16Q61A04B8	10000
97	ROY PRANAB HARIDAS	16Q61A04B9	15000
98	V TEJASWI	16Q61A04C0	10000
99	BAIRI RACHANA	17Q65A0431	25000
100	LAKKAM RAKESHKUMARREDDY	15Q61A0423	6300
101	NAGARAJU VENKATA LAKSHMI SRAVANI	15Q61A0428	2000
102	ARUDRA LAKSHMAN TEJA	15Q61A0443	20000
103	CHERUPALLI RANJITH KUMAR	15Q61A0445	20000
104	P RAJESWARI DEVI	15Q61A0446	20000
105	GUDIPATI SAHITHYA	15Q61A0447	12500
106	GUNDAVARAPU ANURADHA	15Q61A0448	21500
107	GUNDEBOINA SANTHOSHINI	15Q61A0449	10000
108	KESHETTY RAMYA	15Q61A0450	12000
109	M BHAVANA	15Q61A0451	18300
110	MOVVA VIJAY SRIRAM	15Q61A0453	6300
111	P VIJAY	15Q61A0454	21300
112	POREDDY MAHESH KUMAR	15Q61A0457	10000
113	SRILEKHA VEDANTAM	15Q61A0458	19500
114	V V S S SPANDANA	15Q61A04A1	6300
115	GORANTALA MANOHAR	16Q65A0410	20000
116	PINTHEPU ACHYUT SAI	15Q61A0531	5400

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117	SRIRAM PRIYANKA	15Q61A0537	7400
118	VISHNUBHOTLA GNANA PRATYUSHA	15Q61A0541	2000
119	AAVULA MAHESH	15Q61A0543	5000
120	D LAKSHMAN-	15Q61A0547	20000
121	GOPAGONI ASHWINI	15Q61A0548	20000
122	KAUP ANIL KUMAR	15Q61A0550	15000
123	N SWETH	15Q61A0551	20000
124	KUCHIBOTLA SESHULATHA	15Q61A0552	8000
125	MULUKUTLA KASI USHA	15Q61A0555	10100
126	P SAI ANUSHA	15Q61A0556	22000
127	RAAVI MADHAVI	15Q61A0557	6300
128	VALLA BOJU SAI CHANDU	15Q61A0559	23000
129	VENNA VASANTHA LAXMI	15Q61A0560	2500
130	KANNA MOUNIKA	15Q61A0569	7000
131	B DEEPAKPRASAD	15Q61A0583	20000
132	D DHEERAJ	15Q61A0584	55000
133	KANITI GAYATRI	15Q61A0589	11000
134	KOLAN ARCHANA REDDY	15Q61A0590	25700
135	D SAMYUKTHA	15Q61A0592	20000
136	BIKKINENI KAVYA	15Q61A0593	5000
137	K SAI KUMAR	15Q61A0594	10000
138	P SANDEEP	15Q61A0595	20000
139	PISATI VINAY KUMAR REDDY	15D91A05A8	9800
140	ANDOJU SAI SHIVA	15Q61A0348	20000
141	KARNATI SRIKAR VARDHAN	15Q61A0351	20000
142	KONDU PRASHANTH	15Q61A0352	20000
143	PEDAKANTI CHAMUNDESHWARI	15Q61A0353	15000
144	SRIKANTH MOTARGE	15Q61A0354	20000
145	VEMISHETTI KRISHNASAI	15Q61A0355	15000
146	M NIKHIL	14Q61A0355	25000
147	JOGU SHIVA SAI	14Q61A3051	25000

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148	R KRUPAKARAN	15Q61A0216	6300
149	D NAVEEN	15Q61A0219	20000
150	G SRIKANTH	15Q61A0220	15000
151	M.SRI SATYA	16Q65A0205	20000
152	G SACHIN	16Q65A0213	10000
153	P RAKESH REDDY	16Q65A0214	35000
154	NEPURI MALLESHWARI	18Q61E0043	1000
155	SAMA VANDANA REDDY	18Q61E0044	7000
156	KADUKUNTALA NARENDER REDDY	18Q61E0045	3500
157	TAMVADA PRADHYUMNA	18Q61E0047	2000
158	SAKALA SUCHITRA	18Q61E0048	7000
159	TATI VENKATADRI NAIDU	18Q61E0049	7000
160	THATTI ANIKETH	18Q61E0050	2000
161	K VINAY KUMAR	18Q61E0053	4500
162	ENUGANTI PRAVEENKUMAR	17Q61E0007	17000
163	M SHIVA KUMAR	17Q61E0013	17500
164	CHAKKERLA JHANSI RANI	17Q61E0033	2000
165	KOMPALLY JALENDERDHER	17Q61E0036	4500
166	SHANKAR SHETTI RAMYA	17Q61E0038	5000
167	ADUSUMALLI SRIVIDYA	17Q61E0043	2000
168	ATTAPURAM SRINIVAS REDDY	17Q61E0045	4500
169	YESUMANI GURALA	17Q61E0046	27000
170	NANDAM LAVANYA	17Q61E0047	2000
171	MANAVALLA VENKATA SHOBA	17Q61E0048	12000
172	D SURYA PRAKASH	18Q61D5712	17000
173	D S CHANDANA	18Q61D5716	7000
174	ANITHA THORRA	18Q61D5808	7000
175	ANUMANDLA NAVYA	17Q61D5809	22000
176	SABINENI SAGAR	17Q61D5706	27000
177	D ANUSHA	17Q61D5707	7000
178	BUYYA DEEPA	17Q61D5708	27000

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179	BODANAPU KALPANA	17Q61D5709	2000
180	RESHMA	17Q61D0717	7000
181	YALDANDI GIRIJA	17Q61D0718	1000
182	MACHA RAMYA	17Q61D0719	9000
183	MOGILIPAKA KRANTHI	17Q61D0721	7000
184	AMPALLA SARITHA	17Q61D0722	7000
185	SRIRAMOJI SAIRAM	17Q61D0723	13000
186	AMBALA ANIL KUMAR	17Q61D0724	1000

Total Students Count: 186

Total Amount: Rs 34,03,700


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

Date:-08-02-2019

To,
The principal,
Avanthi Institute of Technology,
Gunthapally.

Sub: Requesting for consultancy.

I am G. Sri Kanya from 2nd year. My father is working as "PRO" in this Institute. So, I kindly request you to give money consultancy, and I kindly request to give consultancy fee "6000" as soon as possible, because we are financial issues.

Accepted
on staff welfare
JD

Thanking you.

G. Sri Kanya
2nd year CSE
17Q61A0514.


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

To,
The principal,
Avanathi Institute of Engineering & Technology,
Gunthapally,

Date :- 28/03/2019

Subject :- Requesting for fee concession.

Respected Sir,

My name is D. AKhil of 2nd year ECE 'LE'.
Containing, Roll no :- 18065A0425. I am a student of AIIT.
I belong to a very poor family, in which my father's
monthly income is very low and my mother health
condition not good. Meanwhile, it becomes almost
impossible for my father to pay college fees.

Therefore, I request you to kindly grant me a 35000
fee concession. If you do this for me then my family
will be forever grateful to you.

Thanking you,

Yours Sincerely

D. AKhil

2nd year ECE (LE)

18065A0425.

Accepted
Approval [Signature]

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

Application for Fee concession.

15/03/2019,

To,
The principal,
Avanthi institute of engineering & technology,
Gunthapally,

Subject:- Application for Fee concession

Respected sir,

I am writing this letter to request a fee concession. Name:- MD. AMEER SOHAIB from IYR EEEWE, Roll No:- 18Q65A0222. Due to financial difficulties faced by our family, it has become challenging for us to pay the (Full) fees. So I humbly request you to grant me 30,000 fee concession. I shall be very thankful to you for this kindness

Thanking you,

Yours sincerely,
MD. AMEER SOHAIB,
IYR EEEWE,
18Q65A0222.

Accepted and Approved



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

17 March 2019.

To

The principle.

Avanthi Institute of Engineering & Technology

Guthapally

Sub: Requesting for the fee concession.

Respected Sir

I am N. Jagadish kumar I am a student of your college studying EEE - 2nd yr. Le. I belong to a very poor family. In which my father's monthly income is only 10 thousand rupees with this income it is hard to pay my college fee. I request to fee concession at least 3000 thousand.

Your faith fully;

N. Jagadish.

IP: Q65A0220.

Thanking You.


PRINCIPAL
Avanthi Institute of Engg. & Tech
Guthapally (M), Attilapammet (M), R.R. Dist.

Letter

To,
The principal,
"Avanathi Institute of Engineering and Technology",
Gunthapally.

Date : 23/03/2019

Subject: Application for fee concession.

Respected sir,

I am B. Rajkumar and I am a student of AVIH (B.Tech) IIIrd year branch EEE, LE. I belong to a very poor family, in which my father's monthly income is only 7 to 8 thousand rupees. With this much income, it sometimes becomes difficult to maintain the entire house. My It becomes almost impossible to pay college fee.

From the bottom of my heart, I request you to kindly grant me 30000 fee concession.

Your's sincerely

B. Rajkumar

EEE - LE

3rd year

17865A0215

Accepted Thanking you,



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

Letter:-

23 March 2019,

To,

The Director Madam,

Avanti Institute of Engineering College,
Gunthapally, Hyderabad.

[Sub; Request Regarding fee concession due to some financial
issue].

Good Afternoon Mam. Me K. Jagan babu Studying in III MEEH-1E
of HT No: 17Q5A0339. Mam I have a very kind request that
I cannot pay the tuition fee due to financial issue at my
home as my father is suffering from health issue and I'm
belongs to a village. So I request you to do concession of 35000,
of my tuition fee.

Thanking you,

your's obediently

K. Jagan babu

17Q5A0339

Jagan babu

Accepted



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

20/3/2019

TO
The Director
AVIH,
Gunthapally,
Hyderabad.

Sub : [req for fee consultation]

I am B. Raghavendra from
IInd year EEE (LE). I am unavailable to pay
fee because of some financial issues. so
please give me 20000 consultation. please
do the needfull.

Thanking you.

your's faithfully,
B. Raghavendra,
18065A0214.

Accepted
23/


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

Letter

27 April 2019,

To

Principal Sir,

Avanthi Institute and Engineering Technology.

Gunthapally, Hayath Nagar.

Respected sir.

SUB: To Reduce fee concession.

I Am M. Srikanth from II Year

MECH. Roll No: 15Q61A0354. Sir I am requesting
to reduce fee (20,000) concession. because of we
have some health issue and financial problem. So
please permission for fee concessions.

Thanking you

Your faithfully

M. Srikanth

15Q61A0354.

Accepted,
Dy



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

Letter

Gunthapally
Dt no: 22/3/2019

To Director
A.P.E.T
Gunthapally
Hyderabad

Sub: Requesting to reduce fee

Respected Sir,

I am N. Sweetha from IV year CSE-A, Roll No: 15Q61A0551. I want request to please reduce my fee i.e, 20,000 due to my family financial issues. So, kindly requesting you to reduce my fee.

Thanking you

Yours faithfully

N. Sweetha

IV year CSE-A

15Q61A0551.

Accepted




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

Date: 22/05/2019

To
The Respected principal sir,
Avanthi Gunthapally

Hyd.
Sub: Concession tuition fee - Reg

I am A. Lakshman Teja with Roll NO 15Q61A0443.
Studying B-Tech IVth year ECE-A. I was unable to
pay total tuition fee due to father medical issue.
So, please kindly grant me fee concession of rupees
20000/-.

Thank you.

Accepted
DJ

Yours faithfully
A. Lakshman Teja
15Q61A0443
IVth year
ECE


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

Date: 11/03/2019

From

Silveru Ravikumar

IIys EEE

17Q61A0217

To

The Director Sir

Sub: Need of fee Conisition in College

I am Silveru Ravikumar from IIys EEE Avanthi College. I am unable to pay college fee, due to family problems. That we had financial problem, due to the an accident my father met in the last month, Because of the accident, money were not adjusted to pay college fee. so please give me 15000 Conisition amount in college fee. To continue my study in this college

Accepted
DJ

Thank you sir

Yours faithfully

Silveru Ravikumar

IIys EEE

17Q61A0217


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

Date ÷ 08-04-2019

Day ÷ Monday

To

The Director

Avanathi Institute of Engineering college
Gunthapally

Application ÷ Application for fee concession

Good morning sir. I am BONAGIRI RAMYA
my Roll no ÷ 16R61A04B7. I am writing this letter
because fee concession due to financial problem in
my family. I need 15000 fee concession sir. You
grant my permission letter. You did very helpful
to my family. I kindly request grant my Appli-
cation letter.

Thanking You sir

Yours sincerely,

Name ÷ Bonagiri Ramya

Roll no ÷ 16R61A04B7

Branch ÷ III - Year - ECE.

Accepted
DJ



PRINCIPAL

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

13-02-2019,
Friday.


TO,
The Principal,
AVIH,
GUNTAPALLY.

I'm G. Sowmya studying 2nd year ECE. Roll no:-
17861A0474. I'm writing this letter to you to request
that I'm unable to pay fee of -10,000/- due to my father
financial issues. So, please I kindly request you to cancel to
fee of 10,000/-

Thanking you

Accepted
S/S

G. SOWMYA
IInd Year ECE
17861A0474.



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

Dt: 21/02/2019;
Day: Thursday.

To
The Director,
Avanthi College.
Gunthapally, Hyderabad
AVIH.

Respected Sir,

Sub: Application for fee concession.

I am K. Saikumar from IVYr CSE-A. H.No-15 Q61A0594.
Sir, I want to request fee concession for my fee. due to
the problem's of financial situations in my family. My
mother got recently hospitalized due to the health problem.
So, I kindly request you to accept my request for fee
concession of amount Rs. 10,000/- from my fee.

Thank you Sir

Yours Obediently
K. Saikumar,
IVYr CSE-A.
H.No-15 Q61A0594.



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

Accepted
Df

Date: 15/3/2019
Day: Friday.

To,

The Principal
Avanthi Engineering College;
Gunturpally.

Subject: Application for fee concession.

Respected Sirs

I am P. Mahesh Kumar from IV-ECE-A 15961A0457 to request a fee concession for my fee because due to financial difficulties faced by our family it has become challenging for us to pay the full fees. I humbly request you to consider my request and grant a fee concession for me 10000. I am requesting to consider my application and grant 10000 fee concession for me.

Accepted
[Signature]
"Thank you"

Yours sincerely,

P. Mahesh Kumar
15961A0457
IV-ECE-A.

[Signature]
PRINCIPAL
Avanthi Institute of Engg. & Tech.
Gunturpally (V), Abdulapamot (M.D), 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

Gunthapally,

Date: 10-07-2019.

To

The Governing Body (GB),
Avanthi Institute of Engineering & Technology,
Gunthapally.

Sub:Letter of request sanction of Merit Scholarship amount from college budget.

Reference: 1. AvanthiFreeshipInternal Policy.

Dear Sir/Madam

This is to request you please sanction amount of Rs. 96,000 for 24 students into the college budget for the academic year 2018-2019.

The details are also enclosed for your consideration

Thanking you sir

Yours faithfully,

PRINCIPAL
Avanthi Institute of Engg. & T.
Gunthapally (V), Abdullapurmet (M), R.R. Dis



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

Merit Scholarship Students List with Amount Academic Year: 2018-2019

The following is the list of students 24 are selected from Avanathi Freeship Policy. As per the merit the academic toppers are selected and given among them will receive prizes, with the first topper awarded Rs. 5000 and the second topper receiving Rs. 3000.

S.No	Branch	Year	HALL TICKET NO	STUDENT NAME	MERIT	Amount
1	CSE	II	17Q61A0521	KOMURAVELLI SRI LAXMI	I	5000
2	CSE	II	17Q61A0559	YEDLA NAVEEN KUMAR	II	3000
3	ECE	II	17Q61A0415	CHINTHAPALLY BINDU	I	5000
4	ECE	II	17Q61A0404	ARRA ANOOP REDDY	II	3000
5	EEE	II	17Q61A0201	ALE DINESH	I	5000
6	EEE	II	17Q61A0207	KUMARI MEGHA	II	3000
7	MECH	II	17Q61A0302	CHIRRA SAIKUMAR	I	5000
8	MECH	II	17Q61A0303	CHOLLETI SHASHANK	II	3000
9	CSE	III	16Q61A0556	UNNAVA SARIKA	I	5000
10	CSE	III	16Q61A0580	S VINAYA UNNITHAN	II	3000
11	ECE	III	16Q61A0416	CHERUKURI SAI PRAKASH	I	5000
12	ECE	III	16Q61A0453	M SRI LAKSHMI SOWMYA	II	3000
13	EEE	III	16Q61A0215	M.HARIPRASAD	I	5000
14	EEE	III	16Q61A0217	N.KOTESHWARRAO	II	3000
15	MECH	III	16Q61A0309	D PRASHANTH	I	5000
16	MECH	III	17Q65A0302	ALUGUVELLI SOWMYA	II	3000
17	CSE	IV	15Q61A0577	Y.MEGHANA	I	5000
18	CSE	IV	15Q61A0509	D TEJASWINI	II	3000
19	ECE	IV	15Q61A0433	PITTALA DIVYA	I	5000
20	ECE	IV	15Q61A0450	KESHETTI RAMYA	II	3000
21	EEE	IV	15Q61A0201	ARNEPALLI SOMA SHEKAR	I	5000
22	EEE	IV	15Q61A0206	DONKENA VINAY	II	3000
23	MECH	IV	15Q61A0306	BANOTH VEERENDAR	I	5000
24	MECH	IV	15Q61A0308	BHOOMANI HARISH	II	3000

Total Students Count: 24

Total Amount :Rs 96,000


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