18/B/C/S-4/4/E

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033/231, 035/233, 041/234

PAPER-II
ELECTRICIAN, ELECTROPLATER, LIFT MECHANIC/ LIFT & ESCALATOR MECHANIC
(WORKSHOP CALCULATION & SCIENCE)
SEMESTER-IV

TIME: 3 HRS. **MARKS: 75**

Note: Attempt All the questions.
All questions carry equal marks.

Choose the correct answers:

1. The cost price of an inverter is Rs.10, 800.00 and the profit on selling price is 10%. What is the selling price of the inverter?
   (a) Rs. 11,880.00 (b) Rs. 13,200.00
   (c) Rs. 12,000.00 (d) Rs. 10,000.00

2. If the manufacturer gains 10%, the whole-seller gains 15% and the retailer gains 25% on an article, then find the cost of production of the article whose retail price is Rs.1265.00.
   (a) Rs. 725.00 (b) Rs. 800.00
   (c) Rs. 965.00 (d) Rs. 1012.00

3. At a certain rate of compound interest, Rs. 15320.00 becomes Rs. 30,640.00 in 6 years. What is the rate of interest?
   (a) 12% (b) 13% (c) 11% (d) 14%

4. A sum amounts to Rs. 3584.00 in 219 days at 4% per annum simple interest. The sum is.....
   (a) Rs. 3400.00 (b) Rs. 3260.00
   (c) Rs. 3150.00 (d) Rs. 3500.00

5. What will be the cost of electrical wire used for single phase wiring (live, neutral & earth) along the boundary wall of the circular stadium of diameter 98m? The rate of single core cable for live & neutral is Rs. 15.00 per meter and the rate of earth wire is Rs. 5.00 per meter.
   (a) Rs. 13,240.00 (b) Rs. 10,780.00
   (c) Rs. 12,560.00 (d) Rs. 11,333.00

6. The points (-5, 2) and (2,-5) lie on the.....
   (a) Same quadrant (b) II & III quadrant respectively
   (c) II & IV quadrant respectively (d) IV & II quadrant respectively

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7. On plotting the A(1,0) , B(3,0) , C(3,4) , D(1,4) and joining AB, BC, CD and DA which of the following figure is obtained?
(a) Square (b) Rectangle
(c) Trapezium (d) Rhombus

8. From the point P (-6, 2), the perpendiculars drawn meet the x-axis and y-axis at points M and N respectively. The coordinates of the points M and N are.....
(a) (-6, 0) and (0, 2) (b) (-6, 0) and (2, 0)
(c) (0, -6) and (0, 2) (d) (0, -6) and (2, 0)

9. If the radii of the ends of a bucket 45cm high are 28cm and 7cm, what is its capacity?
(a) 60.52 litre (b) 48.51 litre
(c) 43.67 litre (d) 39.61 litre

10. A frustum of a square pyramid of height 28.5cm has the base 62.5cm and top surface of 42.5cm. The volume of the frustum is.....cubic decimeter.
(a) 98.32 (b) 88.71 (c) 79.50 (d) 67.23

11. A frustum of square pyramid of volume 143 decimeter^3 has the larger surface of side 650mm and smaller surface of side 450mm. What is the height of the frustum?
(a) 467.57mm (b) 501.30mm
(c) 483.50mm (d) 439.72mm

12. Which of the following is a base 8 system of numbers?
(a) Octal system (b) Hexadecimal system
(c) Binary system (d) Decimal system

13. The binary number 10111 in decimal system is.....
(a) 23 (b) 24 (c) 31 (d) 20

14. The decimal number 18 in binary system is.....
(a) 1110 (b) 1000 (c) 10010 (d) 10011

15. The binary number 101001 in decimal system is.....
(a) 29 (b) 37 (c) 41 (d) 44

16. Hexadecimal number 16 in decimal number system is.....
(a) 61 (b) 22 (c) 29 (d) 34

17. The binary number 11100 in Hexadecimal number system is.....
(a) 1F (b) 1C (c) 19 (d) 16

Contd... 3/

18. Alphanumeric number system is the other name of.....
(a) Octal system (b) Binary system
(c) BCD code (d) Hexadecimal system

19. A rectangular, uniform box 4ft. high and 3ft. wide is placed on an inclined plane making an angle θ with the horizontal. What is the largest value of angle θ?
(a) 36.9° (b) 41.4° (c) 53.1° (d) 48.6°

20. When determining whether a rigid body is in equilibrium, the vector sum of the gravitational forces acting on the individual particles of the body can always be replaced by a single force acting at.....
(a) A point on the boundary (b) The geometrical center
(c) The center of mass (d) The center of gravity

21. A toy car released with the same initial speed at each surface one by one, will travel farthest on.....
(a) Muddy surface (b) Cemented surface
(c) Polished marble surface (d) Brick surface

22. Which of the following is not a factor affecting friction on an object in a fluid?
(a) Speed of the object with respect to the fluid (b) Shape of the object
(c) The nature of the fluid (d) Color of the fluid

23. According to law of triangle of forces.....
(a) Three forces acting at a point will be in equilibrium
(b) Three forces acting at a point can be represented by a triangle's each side being proportional to force
(c) If three forces acting upon a particle are represented in magnitude and direction by the sides of a triangle, taken in order, they will be in equilibrium
(d) If three forces acting at a point are in equilibrium, each force is proportional to the Sine of the angle between the other two

24. Center of gravity of a thin hollow cone resting on its circular base, lies on the axis at a height of.....
(a) 1/4 of the height above the base (b) 1/3 of the height above the base
(c) 1/2 of the height above the base (d) 3/8 of the height above the base

25. Which of the following statements is incorrect?
(a) The C.G. of a circle is at its center
(b) The C.G. of a triangle is at the intersection of its medians
(c) The C.G. of a rectangle is at the intersection of its diagonals
(d) The C.G. of a semi-circle is at a distance of r/2 from the center

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