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Question Paper

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ID: ITISKILL0856WX

Student Name: _____ Roll No: _____

1. Which property of a substance is opposing the flow of electric current?

- A) Resistance
B) Voltage
C) EMF
D) Current

2. Which property of metal has its power of returning to its original shape after the applied force is released?

- A) Elasticity
B) Malleability
C) Tenacity
D) Plasticity

3. Which alloy steel is used to make permanent magnets?

- A) Vanadium steel
B) Silicon steel
C) Cobalt steel
D) Manganese steel

4. What is the total surface area of a cylinder having radius 2 metres and height 5 metres?

- A) 88 sq.metre
B) 92 sq.metre
C) 90 sq.metre
D) 86 sq.metre

5. Which statement is correct according to ohm's law?

- A) $I = R$
B) $I = R/V$
C) $I = V/R$
D) $I = 1/V$

6. What is the side of a square whose area is 625 mm²?

- A) 20 mm
B) 25 mm
C) 15 mm
D) 30 mm

7. What is the density of aluminium?

- A) 2.7 g/cm³
B) 4.7 g/cm³
C) 3.7 g/cm³
D) 5.7 g/cm³

8. What is the current? $R = 50 \text{ Ohms}$ $V = 220 \text{ Volts}$
 $I = \text{_____Amps}$

- A) 4.4 Amps
B) 4.3 Amps
C) 4.1 Amps
D) 4.2 Amps

9. How much power does it consumes if an electric heater draws a current of 10 amps at 200 volts?

- A) 2020 watts
B) 2010 watts
C) 2000 watts
D) 2030 watts

10. What is the specific gravity of the solid, if density of the solid is 19.5 g/cm³?

- A) 19.5
B) 18.5
C) 8
D) 19

11. What is the volume of a rectangular tank of 30 m length, 20m width and 10m height?

- A) 6200 m³
B) 5900 m³
C) 6000 m³
D) 6100 m³

12. What is the mass in gram, if a force of 15 dyres acting on a mass m producing an acceleration of 2.5 cm/sec²?

- A) 8 grams
B) 6 grams
C) 9 grams
D) 7 grams

13. Which is same in series connection of resistors in a circuit?

- A) Power
B) Voltage
C) Current
D) Resistance

14. What is the power required? $I = 0.455 \text{ Amps}$ $R = 484 \text{ Ohms}$ $P = \text{_____Watts}$

- A) 100.2 watts
B) 99.2 watts
C) 98.2 watts
D) 101.2 watts

15. How many hours will take for a 100 watts bulb to consume 1 kwh energy? $W = 1 \text{ Kwh}$ $P = 100 \text{ Watts}$ $t = \text{_____Hours}$

- A) 10 hours
B) 18 hours
C) 24 hours
D) 12 hours

16. What is the name of furnace to obtained cast iron?

- A) Mild steel - Blast furnace
B) Alloy metal - Electric furnace
C) Steel - Rever battery
D) Cupola

17. What is the total resistance if two resistances of 4 ohms and 6 ohms are connected in parallel?

- A) 4
- B) 5
- C) 2.4
- D) 10

18. Which is the example for statically induced emf?

- A) Refrigerator
- B) Motor
- C) Generator
- D) Transformer

19. What is the area of an ellipse if the major and minor axes are 5 cm and 3 cm respectively?

- A) 37 cm^2
- B) 57 cm^2
- C) 27 cm^2
- D) 47 cm^2

20. Which alloy steel is using for making precious instrument?

- A) Invar steel
- B) Vanadium
- C) Silicon steel
- D) Manganese steel

21. What is the force with which a body is attracted by the earth towards its centre?

- A) Mass
- B) Weight
- C) Volume
- D) Density

22. Which is brittle metal?

- A) Cast iron
- B) Alloy steel
- C) Steel
- D) Mild steel

23. What is the specific gravity of the metal, if the weighs 6.5 kgf in air and 3.5 kgf in water?

- A) 2.166
- B) 1.166
- C) 3.166
- D) 6.166

24. What is the rated power if an adjustable resistor bears the following label 1.5 k ohms/ 0.08A?

- A) 9.4 watts
- B) 9.8 watts
- C) 9.6 watts
- D) 9.2 watts

25. What is the power if an emf of one volt causes a current flow of 1ampere?

- A) 1 Kilowatt hour
- B) 1 HP
- C) 1 watt
- D) 1 kilowatt

26. Which is the unit electrical power?

- A) Volts
- B) Ampere
- C) Watts
- D) Ohms

27. What is the block weighs (W) in kg, if volume (V) is 320 cm³ and density 8.9 g/cm³?

- A) 2.848 kg
- B) 2.448
- C) 2.948 kg
- D) 2.648 kg

28. What is called mass per unit volume of a substances?

- A) Volume
- B) Weight
- C) Density
- D) Mass

29. What is the formual for induced emf?

- A) $BL \sin \theta$ volts
- B) $B^2 L \sin \theta$ volts
- C) $B^2 V \sin \theta$ volts
- D) $BLV \sin \theta$ volts

30. Find the total surface area of cube whose side is 25 cm.

- A) 3740 cm^2
- B) 3755 cm^2
- C) 3750 cm^2
- D) 3745 cm^2

31. What is the carbon percentage in medium carbon steel?

- A) 0.5% to 1.5%
- B) 0.15% to 0.25%
- C) 0.05% to 0.15%
- D) 0.25% to 0.5%

32. What is the density (r) in g/cm³ of an iron cube, if it weighs (W) 4.8 kg and volume (V) is 640 cm³?

- A) 7.5 g/cm^3
- B) 6.6 g/cm^3
- C) 6.9 g/cm^3
- D) 7.2 g/cm^3

33. Which is mineral insulator

- A) Porcelain
- B) Mica
- C) Glass
- D) Quartz

34. What is the formula for finding volume of a hollow cylinder having outer radius 'R' inner radius 'r' and height 'h'?

- A) $\pi (R^2 - r^2)h$
- B) $\frac{\pi}{3} (R^2 - r^2)h$
- C) $\frac{2}{3} \pi (R^2 - r^2)h$
- D) $\frac{4}{3} \pi (R^2 - r^2)h$

35. Which metal contains iron as a major content?

- A) Bronze metal
- B) Zinc
- C) Brass metal
- D) Ferrous metal

36. How much voltage will be required to illuminate a 40 watts fluorescent lamp draws a current of 0.10 amperes?

- A) 390 volts
- B) 405 volts
- C) 400 volts
- D) 395 volts

37. Which insulating material is used for making switches?

- A) Porcelain
- B) Ebonite
- C) PVC
- D) Bakelite

38. What is the name of the metal which do not contain iron?

- A) Insulating metals B) Ferrous metals
C) Non-Insulating metals D) Non-ferrous metals

39. Which is the unit of current?

- A) Ampere B) Ohm
C) Volt D) Watt

40. What is the carbon percentage in low carbon steel?

- A) 0.50% to 1.50% B) 0.02% to 0.03%
C) 0.15% to 0.25% D) 0.25% to 0.50%

41. Which machine converts mechanical energy into electrical energy?

- A) Generator B) Battery
C) Heater D) Iron box

42. What is the area of a square whose side is 18 cm?

- A) 324 cm^2 B) 72 cm^2
C) 26 cm^2 D) 36 cm^2

43. Find the curved surface area of a cylinder 10 cm dia and 20 cm height?

- A) 638 cm^2 B) 620 cm^2
C) 630 cm^2 D) 628 cm^2

44. What is the area of a circle of diameter 50 cm?

- A) 1952.5 cm^2 B) 1942.5 cm^2
C) 1962.5 cm^2 D) 1932.5 cm^2

45. Which law states that at constant temperature the current passing through a closed circuit is directly proportional to the potential difference and inversely proportional to the resistance?

- A) Ohm's law B) Lenz's law
C) Hooke's law D) Newton's law

46. What is the voltage of the immersion heater? $P = 500 \text{ watts}$ $I = 2.27 \text{ Amps}$ $V = \text{ ______ Volts}$

- A) 200.3 volts B) 210.3 volts
C) 220.3 volts D) 230.3 volts

47. What is the flow of electrons in any conductor?

- A) Voltage B) Power
C) Resistance D) Current

48. What is the resistance of an electric iron if the rating of electric iron is 220 V and 500 watts?

- A) 97.8 ohms B) 95.8 ohms

C) 94.8 ohms

D) 96.8 ohms

49. What is the area of a sector of a circle of radius 5 cm and its angle is 96 Degree?

- A) 20.93 cm^2 B) 20.89 cm^2
C) 20.39 cm^2 D) 20.98 cm^2

50. What is the unit of intensity of magnetic field?

- A) wb/m B) m/wb
C) Coloumb D) Hertz

51. What metals contained in brass alloy?

- A) Copper and lead B) Copper and zinc
C) Copper and aluminium D) Copper and tin

52. Which is the example for dynamically induced Emf?

- A) Motor bike B) Motor
C) Car D) Generator

53. What is the perimeter of a rectangle whose length and breadth are 20 cm and 18 cm?

- A) 56 cm B) 86 mm
C) 76 cm D) 66 cm

54. What is the area of a rectangle, whose length and breadth are 10cm and 8cm respectively?

- A) 75 cm^2 B) 90 cm^2
C) 80 cm^2 D) 85 cm^2

55. Which insulator is used in over head lines?

- A) Porcelain B) P.V.C
C) Rubber D) Mica

56. Which one is non-metal?

- A) Graphite B) Brass
C) Mercury D) Iron

57. What is termed as the quantity of matter contained in a body?

- A) Volume B) Specific gravity
C) Mass D) Density

58. How much watt second in 1 watt hour?

- A) 1000 watt sec B) 3600 watt sec
C) 4000 watt sec D) 2000 watt sec

59. What is the formula for speed?

- A) Distance in definite direction /Time B) Change in velocity/Time

C) Change in momentum/Time	D) Distance covered/Time
60. Which is equal to electric power?	
A) $I^2 R$ watts	B) IR
C) $R^2 I$ watts	D) RI
61. Which property of material enables to formation of permanent deformation without fracture?	
A) Plasticity	B) Ductility
C) Elasticity	D) Brittleness
62. Which furnace is used to get pig iron from iron ore?	
A) Mild steel - Rever battery	B) Cupola
C) Blast furnace	D) Electric furnace
63. Which law states about electromagnetic induction?	
A) Ohm's law	B) Faraday's law
C) Lenz's law	D) Hooke's law
64. What is the diagonal of a square plate whose side is 28 cm?	
A) 39.39 cm	B) 39.29 cm
C) 39.59 cm	D) 39.49 cm
65. What is the capacity of a conical tank of radius 2 m and height 5m?	
A) 41 m^3	B) 21 m^3
C) 31 m^3	D) 11 m^3
66. Which rubber is used as insulator for power cables and control wires?	
A) Silicon	B) Butyl
C) Nitrite butadiene	D) Hypalone
67. How many liters of water a cylindrical tank of radius 75 cm and height 100 cm can hold?	
A) 1769.25 liters	B) 1768.25 liters
C) 1767.25 liters	D) 1766.25 liters
68. What is the specific gravity of the metal, if the piece of metal weighs 150 grams in air and 125 grams in water?	
A) 15	B) 6
C) 10	D) 25
69. What is the volume (V) of mercury in cm^3 , if mass (m) of mercury is 1 kg and density (r) is 13.6 g/cm^3 ?	
A) 73.23 cm^3	B) 73.33 cm^3
C) 73.53 cm^3	D) 73.43 cm^3

70. What is the total resistance if three resistances of 3 ohms, 9 ohms and 5 ohms are connected in series?	
A) $1/17$ ohms	B) 11 ohms
C) 7 ohm	D) 17 ohms
71. What is the area of an equilateral triangle of side 450 mm?	
A) 876.82 cm^2	B) 866.82 cm^2
C) 886.82 cm^2	D) 856.82 cm^2
72. What is the ore of aluminium?	
A) Hematite	B) Mallatite
C) Lemonite	D) Bauxite
73. Which is very good conductor?	
A) Cast iron	B) Steel
C) Wrought iron	D) Copper
74. What is the area of a right angled triangle having a base 10 cm and height 5 cm?	
A) 25 sq.cm	B) 30 sq.cm
C) 20 sq.cm	D) 35 sq.cm
75. Which property of a metal possessed by it melts when heat is applied?	
A) Conductivity	B) Fusibility
C) Tenacity	D) Malleability
76. What is the cross sectional area of a circular ring of $D = 38 \text{ mm}$ $d = 32 \text{ mm}$?	
A) 350 mm^2	B) 330 mm^2
C) 320 mm^2	D) 340 mm^2
77. Which cast iron cannot be welded?	
A) Nodular cast iron	B) White cast iron
C) Grey cast iron	D) Malleable cast iron
78. What is the resistance? $I = 11.5 \text{ Amps}$ $V = 380 \text{ Volts}$ $R = \text{_____ Ohms}$	
A) 43 ohms	B) 33 ohms
C) 23 ohms	D) 13 ohms
79. What is the other name of low carbon steel?	
A) High alloy steel	B) High speed steel
C) Low alloy steel	D) Mild steel
80. What is the volume of sphere of radius 7 cm?	
A) 1636 cm^3	B) 1346 cm^3
C) 1436 cm^3	D) 1463 cm^3

81. What is called the ratio between the density of a substance density of water at 4 Degree Centigrade?

- A) Weight
- B) Density
- C) Mass
- D) Specific gravity

82. What is volume of the cylinder whose radius is 7 cm and height 12 cm?

- A) 1842 c.c
- B) 1844 c.c
- C) 1846 c.c
- D) 1847 c.c

83. What is the current Flow in the bulb? $P = 550$ watts
 $R = 22$ Ohms $I =$ ____Amps

- A) 4 Amps
- B) 2 Amps
- C) 5 Amps
- D) 3 Amps

84. What is the weight force of a car has a mass of 800 kg?(Take $g = 9.81$ m/sec)

- A) 7847 Newton
- B) 7748 Newton
- C) 7848 Newton
- D) 7487 Newton

85. Which metal is widely used for making casting of machinery parts?

- A) White cast iron
- B) Grey cast iron
- C) Malleable cast iron
- D) Wrought iron

86. Which steel is used for making files and cold chisel?

- A) Stainless steel
- B) Low carbon steel
- C) Midium carbon steel
- D) High carbon steel

87. What is the filament resistance if a 6 volt bulb draws a current of 0.5 Amps?

- A) 10 W
- B) 3 W
- C) 1.2 W
- D) 12 W

88. Which alloy used in electric lamp as filament?

- A) Tungsten
- B) Cobalt
- C) Silicon
- D) Vanadium

89. Which among the following is an insulator?

- A) Mica
- B) Silver
- C) Aluminium
- D) Copper

90. What does EMF stands for?

- A) Electro Magnetic Force
- B) Electronic Magnetic Force
- C) Electromated Force
- D) Electro Motive Force

91. Which one of the following properties is the mechanical properties of metal?

- A) Ductility
- B) Structure

- C) Corrosion
- D) Fusibility

92. Which metal cannot be forged?

- A) Mild steel
- B) Alloy steel
- C) Steel
- D) Cast iron

93. Which property of a metal enables it by which it can be drawn out into wires under tension without rupture?

- A) Hardness
- B) Malleability
- C) Ductility
- D) Brittleness

94. What is the primeter of scalene. Triangle having sides of 40mm, 20mm and 28mm?

- A) 68 mm
- B) 78 mm
- C) 98 mm
- D) 88 mm

95. What is the voltage? $R = 250$ Ohms $I = 0.44$ Amps $V =$ ____Volts

- A) 105 Volts
- B) 110 Volts
- C) 100 Volts
- D) 108 Volts

96. What is the carbon percentage in high carbon steel?

- A) 0.25% to 0.50%
- B) 0.50% to 1.50%
- C) 0.15% to 0.25%
- D) 0.02% to 0.03%

97. What is the formula for total surface area of a cylinder?

- A) $\pi r h$
- B) $2 \pi r (h + r)$
- C) $\pi r (h + r)$
- D) $2 \pi r h$

98. Wha is the mass if the density of a body is 7.6 g/cm^3 and its volume is 25 cm^3 ?

- A) 200 grams
- B) 220 grams
- C) 190 grams
- D) 210 grams

99. Which is the unit of resistance?

- A) Ohm
- B) Volt
- C) Watt
- D) Ampere

100. Which mechanical property of a metal offers resistance to elastic deformation in a cutting tool?

- A) Hardness
- B) Toughness
- C) Ductility
- D) Malleability

101. Find the total surface area of a cast iron bar whose length, width and height are 20m, 15m and 12m.

- A) 1540 m^2
- B) 1440 m^2
- C) 1340 m^2
- D) 1640 m^2

102. What is the volume of mercury in cm^3 , if the mass (m) of

mercury is 136 grams (g) and density (r) of mercury is 13.6 g/cm³?

- A) 13.6 cm³ B) 10.6 cm³
C) 136 cm³ D) 10.0 cm³

103. What is the area of a (A) semicircle whose dia is 20 cm (d)?

- A) 177.1 cm² B) 157.1 cm²

- C) 167.1 cm² D) 147.1 cm²

104. What is the name of the property of an insulation that should brake down or puncture on application of high voltage?

- A) Mechanical strenth B) Specific resistance
C) Di-electric strength D) Non absorption