

# Workshop Calculation and Science

Q. ID: ITISKILL3164YP

April 2026

Govt ITI Beerihundi

Answer Key

Duration: 30 Mins

Total Marks: 413

Q.ID: ITISKILL3164YP

1. 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) 25  
C) 6                                         D) 10

Answer: C) 6

2. How much is 8% of 40 kg?

- A) 4.2 kg                                    B) 5.2 kg  
C) 2.2 kg                                    D) 3.2 kg

Answer: D) 3.2 kg

3. What is known for the temperature at which any solid melts into liquid?

- A) Boiling point                         B) Latent heat of fusion  
C) Melting point                         D) Latent heat of vaporisation

Answer: C) Melting point

4. What is the height of the wall where the ladder touches the wall if the ladder is 2.5 m long makes an angle of 60 Degree with the ground?

- A) 4.23 m                                    B) 2.165 m  
C) 4.43 m                                    D) 4.13 m

Answer: B) 2.165 m

5. What is the youngs modulus if a wire of 2m long, 0.8 mm<sup>2</sup> in cross section increases its length by 1.6 mm on suspension of 8 kg weight from it?

- A) 1.25 kg/mm<sup>2</sup>                                B) 12500 kg/mm<sup>2</sup>  
C) 125 kg/mm<sup>2</sup>                                D) 12.5 kg/mm<sup>2</sup>

Answer: B) 12500 kg/mm<sup>2</sup>

6. How many liters of water a cylindrical tank of radius 75 cm and height 100 cm can hold?

- A) 1768.25 liters                         B) 1766.25 liters  
C) 1767.25 liters                         D) 1769.25 liters

Answer: B) 1766.25 liters

7. Which hand book referred by machine engineer?

- A) Parry's cheorikal                        B) Mark standard  
C) CRC                                         D) Oxford Dictionary

Answer: B) Mark standard

8. Which instrument is used to measure temperatures of red hot metals up to 3000 Degree C?

- A) Thermoelectric pyrometer          B) Bimetal thermometer  
C) Alcohol thermometer                D) Radiation pyrometer

Answer: D) Radiation pyrometer

9. What is the area of the circle, whose diameter is 50 cm?

- A) 1950 cm<sup>2</sup>                                 B) 1960 cm<sup>2</sup>  
C) 1900 cm<sup>2</sup>                                 D) 1962.5 cm<sup>2</sup>

Answer: D) 1962.5 cm<sup>2</sup>

10. What is the volume of sphere of radius 7 cm?

- A) 1463 cm<sup>3</sup>                                 B) 1636 cm<sup>3</sup>  
C) 1436 cm<sup>3</sup>                                 D) 1346 cm<sup>3</sup>

Answer: C) 1436 cm<sup>3</sup>

11. Which type of heat transmission takes place through physical contact?

- A) Reflection                                B) Radiation  
C) Convection                                D) Conduction

Answer: D) Conduction

12. What is the current?   
R = 50 Ohms   
220 Volts   
I = \_\_\_\_Amps

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

Answer: C) 4.4 Amps

13. What is the radius of the semicircle, if the circumference of the semicircle is 28.26 cm?

- A) 8.5 cm                                     B) 5.49 cm  
C) 6.49 cm                                    D) 8.75 cm

Answer: B) 5.49 cm

14. What is the term used for the method of calculating various quantities and expenditure on a particular job or process?

- A) Estimation                                B) Plan  
C) Specification                              D) Drawing

Answer: A) Estimation

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

- A) Hardness                                 B) Ductility

C) Malleability

D) Toughness

**Answer: A) Hardness**

16. What is the interest earned, if the principal is for Rs.12500/- maturity becomes to a amount of Rs.17500/-?

A) Rs.25000

B) Rs.30000

C) Rs.5500

D) Rs.5000

**Answer: D) Rs.5000**

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

A) 2020 watts

B) 2030 watts

C) 2000 watts

D) 2010 watts

**Answer: C) 2000 watts**

18. What is the formula for  $a^m \times a^n$ ?

A)  $a^{mn}$

B)  $n \cdot a^m$

C)  $a^{m-n}$

D)  $a^{m+n}$

**Answer: D)  $a^{m+n}$**

19. Which is elastic material?

A) Polycarbonates

B) Nylon

C) Polystyrenes

D) Celluloid

**Answer: B) Nylon**

20. What is the name of heat treatment process done to relieve strain and stress?

A) Annealing

B) Hardening

C) Tempering

D) Normalising

**Answer: A) Annealing**

21. Which is the expansion of  $a^3 + b^3$ ?

A)  $a^3 - b^3 + 3ab$

B)  $(a+b)(a^2 + b^2 - ab)$

C)  $a^3 + b^3 + 3ab(a+b)$

D)  $(a-b)(a^2 + b^2 - ab)$

**Answer: B)  $(a+b)(a^2 + b^2 - ab)$**

22. What is the resistance?  $I = 11.5$  Amps  $V = 380$  Volts  $R = \underline{\hspace{2cm}}$  Ohms

A) 13 ohms

B) 33 ohms

C) 43 ohms

D) 23 ohms

**Answer: B) 33 ohms**

23. Which process steel is heated in a carbonaceous atmosphere for the penetration of carbon?

A) Carburising

B) Case hardening

C) Nitriding

D) Induction hardening

**Answer: A) Carburising**

24. What is the boiling point of water?

A) 32 Degree C

B) 0 Degree C

C) 212 Degree C

D) 100 Degree C

**Answer: D) 100 Degree C**

25. What is the potential energy in a body of mass 10 kg kept on the top of a pole 20 metres height?

A) 1962 Joules

B) 1952 Joules

C) 1972 Joules

D) 1942 Joules

**Answer: A) 1962 Joules**

26. 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) Hooke's law

B) Newton's law

C) Lenz's law

D) Ohm's law

**Answer: D) Ohm's law**

27. What is the mass in gram, if a force of 15 dyres acting on a mass m producing an acceleration of 2.5  $\text{cm/sec}^2$ ?

A) 6 grams

B) 9 grams

C) 7 grams

D) 8 grams

**Answer: A) 6 grams**

28. What is the value for specific heat of water

A) 2

B) 4

C) 1

D) 3

**Answer: C) 1**

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

A) Specific gravity

B) Density

C) Mass

D) Volume

**Answer: C) Mass**

30. How much time is allowed normally in soaking zone for a 10mm thick metal piece while hardening?

A) 5 minutes

B) 10 minutes

C) 15 minutes

D) 20 minutes

**Answer: A) 5 minutes**

31. What is the purpose of tempering a steel?

A) To reduce the brittleness

B) To increase the brittleness

C) To remove the ductility

D) To increase the hardness

**Answer: A) To reduce the brittleness**

32. Who prepares the cost of estimation?

A) Operator

B) Quality Inspector

C) Estimator D) Draughts man

**Answer: C) Estimator**

33. Which force acts on rivets?

A) Tensile force B) Bending force  
C) Shear force D) Compressive force

**Answer: C) Shear force**

34. What is the velocity ratio of a wheel and axle if the radii of wheel and axle are 375 mm and 75 mm respectively?

A) 4 B) 5  
C) 3 D) 6

**Answer: B) 5**

35. What is the ratio between the distance moved by the effort to the distance moved by the load?

A) Efficiency B) Fulcrum  
C) Mechanical advantage D) Velocity ratio

**Answer: D) Velocity ratio**

36. How many watts for 1 horse power in metric system?

A) 745.5 watts B) 725.5 watts  
C) 735.5 watts D) 755.5 watts

**Answer: C) 735.5 watts**

37. What is the value of  $a^2 + b^2$  if  $a + b = 9$  and  $ab = 20$ ?

A) 121 B) (-121)  
C) (-41) D) 41

**Answer: D) 41**

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

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

**Answer: D) Di-electric strength**

39. What is the unit of acceleration of an object?

A) Metre/second<sup>2</sup> B) Metre/second  
C) Metre/minutes D) Metre/minutes<sup>2</sup>

**Answer: A) Metre/second<sup>2</sup>**

40. Which is mineral insulator

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

**Answer: C) Mica**

41. What is the voltage of the immersion heater?  $P =$

500 watts  $I = 2.27$  Amps  $V =$  \_\_\_\_\_Volts

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

**Answer: D) 220.3 volts**

42. What is the capacity of a conical tank of radius 2 m and height 5m?

A)  $41 \text{ m}^3$  B)  $21 \text{ m}^3$   
C)  $11 \text{ m}^3$  D)  $31 \text{ m}^3$

**Answer: B)  $21 \text{ m}^3$**

43. How much work done in one hour, if a pump can raise 100 liters of water through a height of 200 meters in one minutes?

A)  $12 \times 106$  kg meter B)  $12 \times 104$  kg meter  
C)  $12 \times 105$  kg meter D)  $12 \times 107$  kg meter

**Answer: C)  $12 \times 105$  kg meter**

44. Which furnace is used to get pig iron from iron ore?

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

**Answer: D) Blast furnace**

45. Which is expanded form of  $a^3 - b^3$ ?

A)  $(a-b)(a^2 - b^2 - ab)$  B)  $(a-b)(a^2 + b^2 + ab)$   
C)  $(a-b)(a^2 - b^2 + ab)$  D)  $(a+b)(a^2 - b^2 - ab)$

**Answer: B)  $(a-b)(a^2 + b^2 + ab)$**

46. What is the subtracted value of  $3x - 4x^2 + 2y^2$  from  $4y^2 - 2x + 8x^2$ ?

A)  $2y^2 + 5x - 12x^2$  B)  $2y^2 - 5x - 12x^2$   
C)  $(-2y^2 - 5x + 12x^2)$  D)  $2y^2 - 5x + 12x^2$

**Answer: D)  $2y^2 - 5x + 12x^2$**

47. Which is equal to  $\sin \theta$ ?

A) Adjacent Side/Hypotenuse B) Opposite Side/Hypotenuse  
C) Hypotenuse/Adjacent side D) Hypotenuse/Opposite side

**Answer: B) Opposite Side/Hypotenuse**

48. Which is the unit electrical power?

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

**Answer: A) Watts**

49. What is the total construction cost of a house construction area of 3000 sq.ft. (cost of construction Rs.2000/- per sq.ft including material and labour)?

- A) Rs.30,000,000                      B) Rs.6,000,000  
C) Rs.6,00,000                        D) Rs.60,00,000

**Answer: D) Rs.60,00,000**

50. What is the area of the circle, if the circumference of the circle is 44cm?

- A)  $154 \text{ cm}^2$                       B)  $129 \text{ cm}^2$   
C)  $130 \text{ cm}^2$                       D)  $128 \text{ cm}^2$

**Answer: A)  $154 \text{ cm}^2$**

51. What is called if a body posses only magnitude or size alone?

- A) Vector quantity                      B) Speed  
C) Scalar quantity                      D) Velocity

**Answer: C) Scalar quantity**

52. What is the diagonal of a square plate whose side is 28 cm?

- A) 39.39 cm                              B) 39.29 cm  
C) 39.49 cm                              D) 39.59 cm

**Answer: D) 39.59 cm**

53. What is the velocity ratio of a simple machine of a mass 120 kg is lifted to a height of 5 metres by a force of 60 kg moving 15 metre. Calculate velocity ratio?

- A) 1    B) 3  
C) 4    D) 2

**Answer: B) 3**

54. What is called for the amount of heat required to raise the temperature of unit mass of a substance through 1 Degree C?

- A) Latent heat                              B) Specific heat  
C) Mixing of heat                        D) Sensible heat

**Answer: B) Specific heat**

55. What is the expansion of  $(a+b+c)^2$ ?

- A)  $a^2 + b^2 + c^2 - 2ab + 2bc + 2ca$                       B)  $a^2 + b^2 + c^2 + 2ab - 2bc + 2ca$   
C)  $a^2 - b^2 - c^2 + 2ab + 2bc + 2ca$                       D)  $a^2 + b^2 + c^2 + 2(ab + bc + ca)$

**Answer: D)  $a^2 + b^2 + c^2 + 2(ab + bc + ca)$**

56. Which one is the most reliable estimate?

- A) Cube rate estimate                      B) Detailed estimate

- C) Plinth area estimate                      D) Preliminary estimate

**Answer: B) Detailed estimate**

57. What is the value of  $5x^4 / 5x^3$  ?

- A)  $5x^2$     B)  $5x^4 / x^3$   
C)  $5x$     D)  $x$

**Answer: D)  $x$**

58. What is the profit % if the cost price of 16 bolts is equal to the selling price of 12 bolts?

- A) 33.33    B) 13.33  
C) 43.33    D) 23.33

**Answer: A) 33.33**

59. Which alloy used in electric lamp as filament?

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

**Answer: A) Tungsten**

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

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

**Answer: D) Specific gravity**

61. What is the ratio of power output to power input?

- A) Efficiency    B) Work  
C) Energy    D) Acceleration

**Answer: A) Efficiency**

62. Which is the example for statically induced emf?

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

**Answer: C) Transformer**

63. What is the mass if the density of a body is  $7.6 \text{ g/cm}^3$  and its volume is  $25 \text{ cm}^3$ ?

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

**Answer: D) 190 grams**

64. What is the height of the building if a ladder at 45 Degree touches the building placed 16 m from the base of the building?

- A) 17 m    B) 15 m  
C) 16 m    D) 18 m

**Answer: C) 16 m**

65. What is the formula for  $(a-b)^2$ ?

- A)  $a^2 + 2ab + b^2$     B)  $(-a)^2 - 2ab - b^2$   
 C)  $a^2 - 2ab - b^2$     D)  $a^2 - 2ab + b^2$

**Answer: D)  $a^2 - 2ab + b^2$**

**66.** Which one of the following properties is the mechanical properties of metal?

- A) Structure                      B) Corrosion  
 C) Fusibility                      D) Ductility

**Answer: D) Ductility**

**67.** What is the unit of speed?

- A) Metre/second<sup>2</sup>                  B) Metre/second  
 C) Metre/hour                      D) Metre/minute

**Answer: B) Metre/second**

**68.** Which one of the following is not a property of heat insulating material?

- A) Ductility                      B) Less moisture absorption  
 C) Resistance to fire              D) Low conductivity

**Answer: A) Ductility**

**69.** What is the maturity amount if Rs.20000 is deposited at 5% compound interest per annum for 2 years?

- A) Rs.22050                      B) Rs.25000  
 C) Rs.22500                      D) Rs.22000

**Answer: A) Rs.22050**

**70.** Where the centre of gravity of a circle lies?

- A) Any where on its circumference    B) Any where on its diameter  
 C) Any where on its radius              D) At its centre

**Answer: D) At its centre**

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

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

**Answer: A) High carbon steel**

**72.** What is the voltage?  $R = 250 \text{ Ohms}$   $I = 0.44 \text{ Amps}$   $V = \text{___Volts}$

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

**Answer: D) 110 Volts**

**73.** What is the minimum permissible area of conductor (U/G cable) for three and half cores cable?

- A) 50 sq.mm                      B) 5 sq.mm  
 C) 100 sq.mm                      D) 25 sq.mm

**Answer: A) 50 sq.mm**

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

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

**Answer: A) Current**

**75.** Which force acts on crank shaft?

- A) Shear stress                      B) Torsional stress  
 C) Compressive stress              D) Tensile stress

**Answer: B) Torsional stress**

**76.** What is the radius of the circle if the angle of sector is 90 Degree and the area of the circle is  $196 \text{ cm}^2$ ?

- A) 14.85 cm                      B) 15.77 cm  
 C) 14.95 cm                      D) 15 cm

**Answer: B) 15.77 cm**

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

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

**Answer: B) 100.2 watts**

**78.** What is the formula for velocity?

- A) Displacement/Time                  B) Change of momentum/Time  
 C) Change in velocity/Time              D) Distance covered/Time

**Answer: A) Displacement/Time**

**79.** What is the other name of low carbon steel?

- A) High speed steel                  B) Low alloy steel  
 C) Mild steel                          D) High alloy steel

**Answer: C) Mild steel**

**80.** Which state of equilibrium's example is, A cone resting on its base?

- A) Bothe A and B                      B) Un-stable  
 C) Neutral                          D) Stable

**Answer: D) Stable**

**81.** What are fundamental units?

- A) Length, Mass, Volume              B) Length, Mass, Time  
 C) Length, Mass, Area                  D) Length, Pressure, Volume

**Answer: B) Length, Mass, Time**

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

- A)  $1440 \text{ m}^2$                       B)  $1640 \text{ m}^2$   
 C)  $1340 \text{ m}^2$                       D)  $1540 \text{ m}^2$

**Answer: A)  $1440 \text{ m}^2$**

83. Calculate the amount of heat required to raise the temperature of 85.5 gm of sand from 20 Degree C to 35 Degree C specific heat of sand = 0.1.

- A) 125.28 Joules                      B) 128.26 Joules  
C) 128.25 Joules                      D) 126.28 Joules

**Answer: C) 128.25 Joules**

84. Which process produce equilibrium conditions?

- A) Normalising and Tempering                      B) Normalising and Tempering  
C) Annealing and Hardening                      D) Annealing and Normalising

**Answer: D) Annealing and Normalising**

85. How much strain is developed in an iron rod of 1 metre length gets elongated by 1 cm, if a force of 100 kg is applied at one end?

- A) 0.1                                      B) 0.001  
C) 0.0001                                D) 0.01

**Answer: D) 0.01**

86. What is the efficiency of a simple screw jack having velocity ratio is 314.2 and mechanical advantage is 220?

- A) 0.65                                    B) 0.7  
C) 0.6                                      D) 0.75

**Answer: B) 0.7**

87. What is the term, for the details of materials, brand name, grade of quality, rating of current and voltage etc.?

- A) Raw materials                      B) Drawing  
C) Specification of materials                      D) Price catalogue

**Answer: C) Specification of materials**

88. What is the diameter of the circle, if the circumference is 31.4 cm?

- A) 8 cm                                    B) 8.5 cm  
C) 10 cm                                  D) 5 cm

**Answer: C) 10 cm**

89. What is the length of arc of the sector whose radius is 15 cm and the intended angle is 30 Degree?

- A) 7.25 cm                                B) 7.85 cm  
C) 6.75 cm                                D) 6.85 cm

**Answer: B) 7.85 cm**

90. Which insulating material is used for making switches?

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

**Answer: A) Bakelite**

91. What is the length of arc of a sector, whose perimeter is 64.8cm and radius is 12.4 cm?

- A) 40.8 cm                                B) 45 cm  
C) 42 cm                                  D) 40 cm

**Answer: D) 40 cm**

92. What is the acceleration of an aeroplane taking off from landing field has to run 700 metres if it leaves the ground in 10 seconds from the start?

- A) 12 metre/sec<sup>2</sup>                                B) 14 metre/sec<sup>2</sup>  
C) 10 metre/sec<sup>2</sup>                                D) 8 metre/sec<sup>2</sup>

**Answer: A) 12 metre/sec<sup>2</sup>**

93. What is the area of a right angled triangle having a base 10 cm and height 5 cm?

- A) 30 sq.cm                                B) 35 sq.cm  
C) 20 sq.cm                                D) 25 sq.cm

**Answer: D) 25 sq.cm**

94. Which symbol is used to express change in length?

- A) L                                        B) l  
C) delta l                                D) e

**Answer: C) delta l**

95. What is term called for 3 x linear expansion?

- A) Co-efficient of superficial expansion                      B) Co-efficient of linear expansion  
C) Co-efficient of friction                      D) Co-efficient of cubical expansion

**Answer: D) Co-efficient of cubical expansion**

96. What is equal to  $\cos \theta$ ?

- A) Hypotenuse/Opposite Side                      B) Hypotenuse/Adjacent Side  
C) Adjacent Side/Hypotenuse                      D) Opposite side/Hypotenuse

**Answer: C) Adjacent Side/Hypotenuse**

97. What is the product of 0.003 x 0.5?

- A) 0.015                                    B) 0.0015  
C) 0.15                                    D) 0.00015

**Answer: B) 0.0015**

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

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

**Answer: B) Weight**

99. Which is the unit of current?

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

**Answer: B) Ampere**

**100.** Simplify:  $(17.49 \times 5.2) / (6.5)$

- A) 13.89                      B) 13.69  
C) 13.79                      D) 13.99

**Answer: D) 13.99**

**101.** What is the volume (V) of mercury in  $\text{cm}^3$ , if mass (m) of mercury is 1 kg and density ( $\rho$ ) is  $13.6 \text{ g/cm}^3$ ?

- A)  $73.43 \text{ cm}^3$     B)  $73.53 \text{ cm}^3$   
C)  $73.23 \text{ cm}^3$     D)  $73.33 \text{ cm}^3$

**Answer: B)  $73.53 \text{ cm}^3$**

**102.** What effort required to lift a load of 150 kg in a wheel and axle, if the velocity ratio is 2.5 and the efficiency of the machine is 75%?

- A) 100 kg                      B) 90 kg  
C) 70 kg                        D) 80 kg

**Answer: D) 80 kg**

**103.** Which property of a metal possessed by it melts when heat is applied?

- A) Malleability                B) Conductivity  
C) Tenacity                    D) Fusibility

**Answer: D) Fusibility**

**104.** What is the formula for bulk modulus?

- A) Shear stress/Shear strain    B) Tensile stress/Tensile strain  
C) Volumetric stress/Volumetric strain    D) Compressive stress/Compressive strain

**Answer: C) Volumetric stress/Volumetric strain**

**105.** What is the expanded form of  $(a+b)^2$ ?

- A)  $a^2 + 2ab + b^2$     B)  $a^2 + 2ab - b^2$   
C)  $a^2 - 2ab + b^2$     D)  $(-a^2 - 2ab + b^2)$

**Answer: A)  $a^2 + 2ab + b^2$**

**106.** What is the compound interest on a principal of Rs.25000/- after 3 years at the rate of 12% per annum?

- A) Rs.10483.20                B) Rs.9720  
C) Rs.10123.20                D) Rs. 9000

**Answer: C) Rs.10123.20**

**107.** What is the estimation of milling cost of a rectangular block size 100 X 80 X60 mm, if cost of the milling is Rs.2/sq.cm?

- A) Rs.960/-                      B) Rs.572/-  
C) Rs.652/-                      D) Rs.752/-

**Answer: D) Rs.752/-**

**108.** What is the weight force of a car has a mass of 800 kg?(Take  $g = 9.81 \text{ m/sec}^2$ )

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

**Answer: B) 7848 Newton**

**109.** What is the value in degree centigrade for 20 Degree F?

- A) -6.67 Degree C                B) -6.57 Degree C  
C) -6.37 Degree C                D) -6.47 Degree C

**Answer: A) -6.67 Degree C**

**110.** What is the relative permittivity of rubber?

- A) Between 8 and 10            B) Between 5 and 6  
C) Between 2 and 3            D) Between 12 and 14

**Answer: C) Between 2 and 3**

**111.** What is the distance of the load from the fulcrum called?

- A) Load arm                      B) Effort  
C) Effort arm                      D) Power arm

**Answer: A) Load arm**

**112.** What is the perimeter of scalene. Triangle having sides of 40mm, 20mm and 28mm?

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

**Answer: B) 88 mm**

**113.** What is the improper fraction for the given mixed fraction ?  $7 \frac{3}{7}$

- A)  $\frac{7}{28}$                             B)  $\frac{52}{7}$   
C)  $\frac{28}{7}$                             D)  $\frac{7}{52}$

**Answer: B)  $\frac{52}{7}$**

**114.** What is the current Flow in the bulb?  $P = 550$  watts  $R = 22 \text{ Ohms}$   $I = \text{_____Amps}$

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

**Answer: D) 5 Amps**

**115.** Which one of the following geometrical shape's centre of gravity lies from its base is  $\frac{1}{3}$  of its height?

- A) Triangle                        B) Square  
C) Rhombus                        D) Cone

**Answer: A) Triangle**

**116.** What is equal to  $\tan \theta$ ?

- A) Adjacent Side/Hypotenuse            B) Opposite Side/Adjacent Side  
C) Adjacent side/Opposite side            D) Opposite Side/Hypotenuse

**Answer: B) Opposite Side/Adjacent Side**

**117.** What is the centre of gravity of a sphere?

- A) At the centre                      B) On the circumference  
C) At the diameter                  D) At the radius

**Answer: A) At the centre**

**118.** What is the length L<sub>2</sub>, if total length (L) is 2.75 metre and L<sub>1</sub>:L<sub>2</sub> = 2:3?

- A) 1.75 metre                      B) 1.65 metre  
C) 1.1 metre                        D) 1.25 metre

**Answer: B) 1.65 metre**

**119.** Which one of the following geometrical shapes centre of gravity lies from its base is 1/3 of its height?

- A) Cone                              B) Rhombus  
C) Triangle                         D) Square

**Answer: C) Triangle**

**120.** What is the LCM of 12, 18, 6, 36?

- A) 12                                 B) 36  
C) 18                                 D) 42

**Answer: B) 36**

**121.** Which one is non-metal?

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

**Answer: C) Graphite**

**122.** What is the other term used for reference table?

- A) Dictionary                      B) Bibliography  
C) Information Table              D) Biography

**Answer: C) Information Table**

**123.** What percentage of 80 is 20?

- A) 0.2                                 B) 0.8  
C) 0.25                                D) 0.4

**Answer: C) 0.25**

**124.** At what temperature will Fahrenheit and centigrade thermometers give the same reading?

- A) -41 Degree C                  B) -38 Degree C  
C) -39 Degree C                  D) -40 Degree C

**Answer: D) -40 Degree C**

**125.** What is the centre of gravity of a semi circle of diameter 12 cm?

- A) 3.25 cm                         B) 2.54 cm  
C) 2.24 cm                         D) 2.75 cm

**Answer: B) 2.54 cm**

**126.** How much load is lifted if an effort of 25 kg is applied to a simple machine having velocity ratio of 4 and efficiency 75%?

- A) 75 kg                              B) 80 kg  
C) 65 kg                              D) 70 kg

**Answer: A) 75 kg**

**127.** What is the difference between the simple and the compound interest amount at 5% per annum for 2 years on a principal of Rs.20000/-?

- A) Rs.25                              B) Rs.5  
C) Rs.55                              D) Rs.50

**Answer: D) Rs.50**

**128.** What is a total cost?

- A) Advertisement cost only      B) Raw materials cost and machining cost  
C) Machining cost only          D) Raw material cost only

**Answer: B) Raw materials cost and machining cost**

**129.** What is the formula for acceleration?

- A) Metre/second                    B) Metre/second<sup>2</sup>  
C) Metre/minute                  D) Metre/hour

**Answer: B) Metre/second<sup>2</sup>**

**130.** What is the maximum temperature that can be measured by mercury thermometer?

- A) 400 Degree C                  B) 300 Degree C  
C) 200 Degree C                  D) 100 Degree C

**Answer: B) 300 Degree C**

**131.** What is the acceleration of a car if the speed of the car has increased from 25 km per hour to 40 km per hour in one minute?

- A) 0.59 m/sec<sup>2</sup>                    B) 0.059 m/sec<sup>2</sup>  
C) 0.69 m/sec<sup>2</sup>                    D) 0.069 m/sec<sup>2</sup>

**Answer: D) 0.069 m/sec<sup>2</sup>**

**132.** What is the equivalent pascal value for 1 bar?

- A) 105 pascal                      B) 103 pascal  
C) 109 pascal                      D) 107 pascal

**Answer: A) 105 pascal**

**133.** Which is equal to  $(a+b)^2 - (a-b)^2$ ?

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

**Answer: C) 4ab**

134. What is the multiplication value of  $5a^2 \times 8a^5 \times b^3$ ?

- A)  $40a^3 \times b^2$  B)  $40a^7 \times b^4$   
C)  $40a^4 \times b^7$  D)  $40a^2 \times b^3$

**Answer: B)  $40a^7 \times b^4$**

135. Which one is included in machining estimation sheet?

- A) Advertisement cost B) Tax  
C) Raw material cost D) Transport cost

**Answer: C) Raw material cost**

136. What is the area of a circular surface if the radius is 14 cm?

- A)  $612.25 \text{ cm}^2$  B)  $614.5 \text{ cm}^2$   
C)  $615.44 \text{ cm}^2$  D)  $612.44 \text{ cm}^2$

**Answer: C)  $615.44 \text{ cm}^2$**

137. What does EMF stands for?

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

**Answer: D) Electro Motive Force**

138. Which standard schedule of rates to be considered for estimation?

- A) Standard schedule of rates of the last year B) Standard schedule of rates of the average of last 5 years  
C) Standard schedule of rates of the current year D) Standard schedule of rates of the average of the last 10 years

**Answer: C) Standard schedule of rates of the current year**

139. Convert 0.456 decimal fraction into percentage?

- A) 0.456 B) 0.000456  
C) 0.0456 D) 45.6

**Answer: D) 45.6**

140. What is the change in length per unit original length per degree rise in temperature is called?

- A) Co-efficient of linear expansion B) Co-efficient of friction  
C) Co-efficient of superficial expansion D) Co-efficient of cubical expansion

**Answer: A) Co-efficient of linear expansion**

141. What is the value of  $(a^5)^7$ ?

- A)  $a^{22}$  B)  $a^2 \times 1$   
C)  $a^{35}$  D)  $a^1 \times 2$

**Answer: C)  $a^{35}$**

142. What is the value of 'X' if  $x - y = 6$  and  $x + y = 8$ ?

- A) 6 B) 7

C) 14 D) 5

**Answer: B) 7**

143. What is the main factor to be considered while preparing a detailed estimate?

- A) Location of material B) Shape of material  
C) Brand of the materials D) Quantity, availability and transportation of materials

**Answer: D) Quantity, availability and transportation of materials**

144. What is the cost price if the product is sold at Rs. 572 with a profit of Rs. 72?

- A) Rs. 644 B) Rs. 472  
C) Rs. 1000 D) Rs. 500

**Answer: D) Rs. 500**

145. What is the name of fixed or supporting point of a lever?

- A) Fulcrum B) Mechanical advantage  
C) Load D) Effort

**Answer: A) Fulcrum**

146. What is the equivalent unit for 1 horse power in metric system?

- A) 77 kg.m/sec B) 75 kg.m/sec  
C) 78 kg.m/sec D) 76 kg.m/sec

**Answer: B) 75 kg.m/sec**

147. Which kind of heat transmission takes places by upward flow?

- A) Reflection B) Conduction  
C) Convection D) Radiation

**Answer: C) Convection**

148. A motor cycle tyre is sold for Rs 300/- what is the purchase price if 25% profit is added to it.

- A) Rs 260 B) Rs 220  
C) Rs 200 D) Rs 240

**Answer: D) Rs 240**

149. What is the formula for potential energy?

- A) mgh joule B)  $\frac{2}{3}$  mgh joule  
C)  $\frac{1}{2}$  mgh joule D)  $mgh^2$  joule

**Answer: A) mgh joule**

150. What is discount?

- A) Selling price + discount B) The reduction given to the selling price of a product  
C) Selling price is less than Cost price D) Selling price is greater than Cost price

**Answer: B) The reduction given to the selling price of a**

**product**

151. What is an over estimate?

- A) When an estimate is fell short of the actual estimate  
B) When an estimate perfectly matches the actual estimate  
C) When an estimate is exceeded to actual estimate  
D) No work started as per estimate

**Answer: C) When an estimate is exceeded to actual estimate**

152. What is the length of arc of a sector whose radius is 3.6 cm and angle is 36 Degree?

- A) 2.10 cm  
B) 22.6 cm  
C) 21.0 cm  
D) 2.26 cm

**Answer: D) 2.26 cm**

153. What is the formula for kinetic energy?

- A)  $(2/3) mv^2$  joule  
B)  $(1/2) mv$  joule  
C)  $(1/2) mv^2$  joule  
D)  $(2/3) mv$  joule

**Answer: C)  $(1/2) mv^2$  joule**

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

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

**Answer: D) 2.166**

155. What is the name of the point at which all the weight of the body concentrated?

- A) Central point  
B) Centre of gravity  
C) Initial point  
D) Centroid

**Answer: B) Centre of gravity**

156. What is the total cost of painting of a class room including ceiling, if the size of length is 6m, breadth is 5m and height is 4m. (Painting + labour cost Rs.150/- per sq.m)

- A) Rs.17700/-  
B) Rs.15000/-  
C) Rs.16700/-  
D) Rs.18700/-

**Answer: A) Rs.17700/-**

157. What is the other term of pocket reference in engineering works?

- A) Hand tool  
B) New book  
C) Hand book  
D) Good book

**Answer: C) Hand book**

158. What is the volume of mercury in cm<sup>3</sup>, if the mass (m) of mercury is 136 grams (g) and density (r) of mercury is 13.6 g/cm<sup>3</sup>?

- A) 10.0 cm<sup>3</sup>  
B) 10.6 cm<sup>3</sup>

- C) 13.6 cm<sup>3</sup>  
D) 136 cm<sup>3</sup>

**Answer: A) 10.0 cm<sup>3</sup>**

159. Which is brittle metal?

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

**Answer: B) Cast iron**

160. Which is the example for dynamically induced Emf?

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

**Answer: B) Generator**

161. Which is thermo plastic material?

- A) Nylon  
B) Neoprene  
C) Butyl rubber  
D) Vinyl polymers

**Answer: D) Vinyl polymers**

162. Which is example for third order lever?

- A) A pair of scissors  
B) Forceps  
C) Common balance  
D) Lime squeezer

**Answer: B) Forceps**

163. What is the cross sectional area of a circular ring of D = 38 mm d = 32mm?

- A) 330 mm<sup>2</sup>  
B) 340 mm<sup>2</sup>  
C) 320 mm<sup>2</sup>  
D) 350 mm<sup>2</sup>

**Answer: A) 330 mm<sup>2</sup>**

164. What is called if a force of 1Newton acts on a body and moves it through a distance of 1 metre?

- A) 10 dynes  
B) 1 Joule  
C) 10 Joules  
D) 1 dyne

**Answer: B) 1 Joule**

165. Convert 52% into fraction?

- A) (17/25)  
B) (9/25)  
C) (13/25)  
D) (11/25)

**Answer: C) (13/25)**

166. Which state of equilibrium's example is A cone resting on its tip?

- A) Neutral  
B) Unstable  
C) Horizontal  
D) Stable

**Answer: B) Unstable**

167. What is the simplified value of  $(3x + 15) / 5x + 25$

- A) (5/3)  
B) (-5/3)  
C) (3/5)  
D) (-3/5)

**Answer: C) (3/5)**

168. What is the formula to find Profit %?

- A)  $\frac{(S.P-C.P)}{(Profit)} \times 100$       B)  $\frac{(C.P)}{(Profit)} \times 100$   
C)  $\frac{(Profit)}{(S.P)} \times 100$       D)  $\frac{(Profit)}{(C.P)} \times 100$

**Answer: D)  $\frac{(Profit)}{(C.P)} \times 100$**

169. Convert - 273 Degree C (Centigrade) into kelvin scale?

- A) 1 Degree K      B) 0 Degree K  
C) 3 Degree K      D) 2 Degree K

**Answer: B) 0 Degree K**

170. What is the area of the sector, if the diameter is 12 cm and the angle is 60 Degree?

- A)  $19.00 \text{ cm}^2$       B)  $18.84 \text{ cm}^2$   
C)  $17.75 \text{ cm}^2$       D)  $18.0 \text{ cm}^2$

**Answer: B)  $18.84 \text{ cm}^2$**

171. What is the profit amount, if the i - phone cost price is Rs.50000/- and selling price is Rs.70000/-?

- A) Rs. 50000/-      B) Rs. 20000/-  
C) Rs. 2000/-      D) Rs. 10000/-

**Answer: B) Rs. 20000/-**

172. What is the ratio between stress and strain?

- A) Poisson's ratio      B) Yield point  
C) Factor of safety      D) Youngs Modulus

**Answer: D) Youngs Modulus**

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

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

**Answer: C) 1847 c.c**

174. What is the term used for maximum stress attained by a material before rupture?

- A) Compressive stress      B) Working stress  
C) Tensile stress      D) Ultimate stress

**Answer: D) Ultimate stress**

175. Which law states that within elastic limit stress is directly proportional to strain?

- A) Charles law      B) Hooks law  
C) Joules law      D) Newtons law

**Answer: B) Hooks law**

176. What is velocity of a body travels a distance of 168 metres in a line in 21 seconds?

- A) 8 m/sec      B) 10 m/sec  
C) 6 m/sec      D) 12 m/sec

**Answer: A) 8 m/sec**

177. Simplify:  $(\frac{3}{4}) + (\frac{2}{5}) - (\frac{5}{20})$

- A)  $\frac{12}{10}$       B)  $\frac{3}{10}$   
C)  $\frac{13}{10}$       D)  $\frac{9}{10}$

**Answer: D)  $\frac{9}{10}$**

178. What is the safe stress if the ultimate stress of a material is  $35 \text{ kg/mm}^2$  and factor of safety is 5?

- A) 1.43      B) 0.7  
C) 7      D) 0.143

**Answer: C) 7**

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

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

**Answer: C) Ductility**

180. What is the unit of strain?

- A) No unit      B)  $\text{Kg/cm}^2$   
C)  $\text{Newton/metre}^2$       D) Metre

**Answer: A) No unit**

181. What is called if a body does not change its position with respect to its surroundings?

- A) Speed      B) Body at rest  
C) Body at motion      D) Velocity

**Answer: B) Body at rest**

182. What is the name called biggest chord of the circle?

- A) Diameter      B) Diagonal  
C) Arc      D) Radius

**Answer: A) Diameter**

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

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

**Answer: D) 88 sq.metre**

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

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

**Answer: C) Non-ferrous metals**

185. What is the work done in joules if a load of 15.5 kg is lifted through a height of 4.4 metres?

- A) 659 Joules      B) 669 Joules  
C) 639 Joules      D) 649 Joules

**Answer: B) 669 Joules**

186. What is the centre of gravity of a rectangular body?

- A) Longer side of rectangle    B) At the corners  
C) Shorter side of rectangle    D) At the point of intersection of its diagonals

**Answer: D) At the point of intersection of its diagonals**

187. Which type of levers is bell cranked lever?

- A) Curved lever    B) 3rd order lever  
C) 1st order lever    D) 2nd order lever

**Answer: A) Curved lever**

188. What is the value of x, if  $x^*(120) = 960$ ?

- A) 7    B) 6  
C) 10    D) 8

**Answer: D) 8**

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

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

**Answer: C)  $2 \pi r (h + r)$**

190. What is the name of the region of a circle between any two point on the circumference?

- A) Sector    B) Chord  
C) Arc    D) Segment

**Answer: D) Segment**

191. Which heat treatment process is done to refine the grain structure of the steel?

- A) Hardening    B) Annealing  
C) Tempering    D) Normalising

**Answer: D) Normalising**

192. What is the side of a square whose area is  $625 \text{ mm}^2$ ?

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

**Answer: A) 25 mm**

193. How much watt second in 1 watt hour?

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

**Answer: C) 3600 watt sec**

194. Which is thermosetting plastic?

- A) Polystyrenes    B) Melamine resins  
C) Vinyl polymers    D) Celluloid

**Answer: B) Melamine resins**

195. What is the area of the circle if the radius is 10 cm?

- A)  $30.4 \text{ cm}^2$     B)  $31.4 \text{ cm}^2$   
C)  $3.14 \text{ cm}^2$     D)  $314 \text{ cm}^2$

**Answer: D)  $314 \text{ cm}^2$**

196. What is the value of x if  $11x+4=37$ ?

- A) 5    B) 4  
C) 2    D) 3

**Answer: D) 3**

197. What is the definition of ratio?

- A) Inequality between two ratios    B) Relation of two quantities of the same kind  
C) Relation of two quantities of the different kind    D) Equality between two ratios

**Answer: B) Relation of two quantities of the same kind**

198. What is the area of an equilateral triangle of side 450 mm?

- A)  $886.82 \text{ cm}^2$     B)  $856.82 \text{ cm}^2$   
C)  $866.82 \text{ cm}^2$     D)  $876.82 \text{ cm}^2$

**Answer: D)  $876.82 \text{ cm}^2$**

199. What is the formual for induced emf?

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

**Answer: A)  $BLV \sin \alpha$  volts**

200. What percentage of water absorbed by a good building stone?

- A) Less than 8%    B) Less than 5%  
C) Less than 10%    D) Less than 20%

**Answer: B) Less than 5%**

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

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

**Answer: A) wb/m**

202. Which among the following is an insulator?

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

**Answer: B) Mica**

203. What is the centre of gravity of a rectangular body?

- A) At the point of intersection of its diagonals    B) Shorter side of rectangle  
C) Longer side of rectangle    D) At the corners

**Answer: A) At the point of intersection of its diagonals**

204. What is the radius of a circle whose diameter is 44 cm?

- A) 23 cm                      B) 22 cm  
C) 44 cm                      D) 20 cm

**Answer: B) 22 cm**

205. What is the ratio between the change in dimension to its original dimension of the substance?

- A) Factor of safety              B) Strain  
C) Stress                         D) Poisson's ratio

**Answer: B) Strain**

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

- A)  $157.1 \text{ cm}^2$               B)  $167.1 \text{ cm}^2$   
C)  $177.1 \text{ cm}^2$               D)  $147.1 \text{ cm}^2$

**Answer: A)  $157.1 \text{ cm}^2$**

207. Which insulating material is most widely used in refrigerators?

- A) Polyurethane                B) Cork sheet  
C) Thermocole                 D) Glass wool

**Answer: A) Polyurethane**

208. What is a under estimate?

- A) An estimate is exceeded    B) An estimate is fell short of the actual estimate  
C) An estimate perfectly matches with actual    D) No work started as per estimate

**Answer: B) An estimate is fell short of the actual estimate**

209. Where the centre of gravity of a circle lies?

- A) Any where on its circumference              B) At its centre  
C) Any where on its diameter    D) Any where on its radius

**Answer: B) At its centre**

210. Which authority publishes schedule of rates?

- A) Partnership firm              B) Individual  
C) Government department    D) Corporate

**Answer: C) Government department**

211. What is the name of the structure formed, if a steel is heated for about 723 Degree C?

- A) Ferrite                         B) Austenite  
C) Cementide                    D) Martensite

**Answer: B) Austenite**

212. What is the work done in unit time?

- A) Power                         B) Force  
C) Energy                        D) Acceleration

**Answer: A) Power**

213. What describes the detailed specification for the item of work?

- A) Tax, Transport, Overhead expenses              B) Quality, Quantity, Workmanship, Method of execution  
C) Maintenance, Stock, Cost    D) Colour

**Answer: B) Quality, Quantity, Workmanship, Method of execution**

214. Which cast iron cannot be welded?

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

**Answer: C) White cast iron**

215. Which is equal to electric power?

- A)  $I^2 R$  watts              B)  $IR$   
C)  $R^2 I$  watts              D)  $RI$

**Answer: A)  $I^2 R$  watts**

216. What is the total wattage in a room if 2 tube lights of 50W rating, 2 fans of 80W rating, 2 numbers of light points of 60W rating, one fan point of 60W rating and one 3 pin socket of 100W rating?

- A) 340 W                         B) 440 W  
C) 640 W                         D) 540 W

**Answer: D) 540 W**

217. What is the cost price (C.P) formula if there is a profit?

- A)  $\frac{100}{100-\text{Loss \%}} \times S.P$     B)  $\frac{(100-\text{Loss \%})}{100} \times C.P$   
C)  $\frac{100}{100+\text{Profit \%}} \times S.P$     D)  $\frac{(100+\text{Profit \%})}{100} \times C.P$

**Answer: C)  $\frac{100}{100+\text{Profit \%}} \times S.P$**

218. 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) 24 hours  
C) 18 hours                        D) 12 hours

**Answer: A) 10 hours**

219. Which is very good conductor?

- A) Wrought iron                 B) Cast iron  
C) Steel                            D) Copper

**Answer: D) Copper**

220. What is the value of  $1/a^{-5}$ ?

- A)  $a^5$                                 B)  $(-5a)$   
C)  $5a$                                 D)  $a^{-5}$

**Answer: A)  $a^5$**

221. What is the retardation of a car moving with a velocity of 50 km/hr is brought to rest in 45 seconds?

- A)  $0.10 \text{ m/sec}^2$  B)  $0.30 \text{ m/sec}^2$   
C)  $0.40 \text{ m/sec}^2$  D)  $0.20 \text{ m/sec}^2$

**Answer: B)  $0.30 \text{ m/sec}^2$**

**222.** Convert decimal 0.000659 to fraction?

- A)  $(659/100000)$  B)  $(659/1000)$   
C)  $(659/1000000)$  D)  $(659/10000)$

**Answer: C)  $(659/1000000)$**

**223.** What is the square root of 0.017?

- A) 0.001 B) 0.00001  
C) 0.13 D) 0.000001

**Answer: C) 0.13**

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

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

**Answer: D)  $I = V/R$**

**225.** What is the name of the point at which all the weight of the body concentrated?

- A) Centre of gravity B) Centroid  
C) Initial point D) Central point

**Answer: A) Centre of gravity**

**226.** What is the x value for  $x^2 + 62 = 126$ ?

- A) 10 B) 4  
C) 6 D) 8

**Answer: D) 8**

**227.** Which is example for second order lever?

- A) A pair of scissors B) Human forearm  
C) Common balance D) Bottle opener

**Answer: D) Bottle opener**

**228.** What is the value of any number raised to the power of 0?

- A) 0 B) Alpha (?)  
C) 1 D) (-1)

**Answer: C) 1**

**229.** How the 'Principal' is denoted in simple interest calculation?

- A) 'R' B) 'P'  
C) 'n' D) 'I'

**Answer: B) 'P'**

**230.** What is the centre of gravity of a solid hemisphere from its base?

- A)  $r/2$  B)  $4r/5$

- C)  $3r/4$  D)  $3r/8$

**Answer: D)  $3r/8$**

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

- A) 95.8 ohms B) 97.8 ohms  
C) 96.8 ohms D) 94.8 ohms

**Answer: C) 96.8 ohms**

**232.** Which instrument is used to measure heat?

- A) Calorie meter B) Barometer  
C) Thermometer D) Pyrometer

**Answer: A) Calorie meter**

**233.** What is the ratio between ultimate stress to working stress?

- A) Young's modulus B) Bulk modulus  
C) Factor of safety D) Modulus of rigidity

**Answer: C) Factor of safety**

**234.** What is the interest earned, if the principal is Rs.12000/- becomes to an amount of Rs.15600/-?

- A) Rs.4600 B) Rs.2600  
C) Rs.3600 D) Rs.5600

**Answer: C) Rs.3600**

**235.** Which state of equilibrium's example is, A cone resting on its base?

- A) Neutral B) Un-stable  
C) Stable D) Both A and B

**Answer: C) Stable**

**236.** What is the carbon percentage in low carbon steel?

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

**Answer: B) 0.15% to 0.25%**

**237.** What is the quantity of heat required to raise the temperature of 1 gram of water through 1 Degree Centigrade is called?

- A) British thermal unit B) Calorie  
C) Specific heat D) Centigrade heat unit

**Answer: B) Calorie**

**238.** What is the decimal fraction of conversion of 18.5%?

- A) 0.165 B) 0.195  
C) 0.175 D) 0.185

**Answer: D) 0.185**

**239.** Which is equal to  $(a^m)^n$ ?

- A)  $a^{m/n}$  B)  $a^{m-n}$

C)  $a^{mn}$  D)  $a^{m+n}$

**Answer: C)  $a^{mn}$**

**240.** What is the formula to find Loss %?

- A)  $(Loss+100)/(S.P)$  B)  $(CP)/(Loss \times 100)$   
C)  $(S.P)/(Loss+100)$  D)  $(Loss \times 100)/(C.P)$

**Answer: D)  $(Loss \times 100)/(C.P)$**

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

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

**Answer: A) Elasticity**

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

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

**Answer: D) 9.6 watts**

**243.** How the years is denoted in simple interest calculations?

- A) r B) I  
C) P D) n

**Answer: D) n**

**244.** Which one is heat insulator?

- A) Copper B) Brass  
C) Aluminium D) Thermocole

**Answer: D) Thermocole**

**245.** Convert 45 Degree C (Centigrade) into Degree F (Fahrenheit)

- A) 112 Degree F B) 113 Degree F  
C) 110 Degree F D) 111 Degree F

**Answer: B) 113 Degree F**

**246.** Which state of equilibrium's example is A cone resting on its tip?

- A) Unstable B) Horizontal  
C) Neutral D) Stable

**Answer: A) Unstable**

**247.** What is the value of x if  $(x + 2) / 2 = 19$ ?

- A) 33 B) 36  
C) 35 D) 38

**Answer: B) 36**

**248.** What is the speed of a train of 80 metre long train passes a railway station platform of 120 metres length in 20 seconds?

- A) 32 km/hour B) 30 km/hour

C) 34 km/hour

D) 36 km/hour

**Answer: D) 36 km/hour**

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

- A)  $26 \text{ cm}^2$  B)  $324 \text{ cm}^2$   
C)  $36 \text{ cm}^2$  D)  $72 \text{ cm}^2$

**Answer: B)  $324 \text{ cm}^2$**

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

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

**Answer: B) 2.4**

**251.** How much heat is absorbed by a copper ingot weighing 400 Kg is heated from 40 Degree C to 72 Degree C for the purpose of forging? (sp.heat of copper is 0.09)

- A) 1251 Kcal B) 1521 Kcal  
C) 1152 Kcal D) 1215 Kcal

**Answer: C) 1152 Kcal**

**252.** How much quantity of heat is required to raise the temperature of 300 grams of copper (sp.heat 0.092 cal/gram) from 25 Degree C to 75 Degree C in Kcal?

- A) 1.38 Kcal B) 207 Kcal  
C) 2.07 Kcal D) 138 Kcal

**Answer: A) 1.38 Kcal**

**253.** What is the unit for velocity?

- A) Metre/second<sup>2</sup> B) Metre/hour  
C) Metre/minute D) Metre/second

**Answer: D) Metre/second**

**254.** What is the ratio of 4 kg to 800 grams?

- A) 02:04 B) 08:04  
C) 05:01 D) 04:08

**Answer: C) 05:01**

**255.** What is the unit of co-efficient of linear expansion?

- A) Number / Degree C / mm B) Number / Degree C / meter length  
C) Number / Degree C D) Number / Degree C / cm length

**Answer: C) Number / Degree C**

**256.** Which type heat is the heat absorbed or given off by a substance without changing its physical state?

- A) Latent heat of steam B) Sensible heat  
C) Latent heat D) Specific heat

**Answer: B) Sensible heat**

257. What is the value of  $(6^3) / ((-3)^3)$  ?

- A) 8  
B) 27  
C) (-27)  
D) (-8)

**Answer: D) (-8)**

258. What is the total cost of Air-conditioners installed in a college, 40 class room-each 1 Air-conditioner, Computer lab 5 Air- conditioners and conference hall 5 Air-conditioners (Cost of one air conditioner Rs.30000/- including installation)?

- A) Rs. 20 lakhs  
B) Rs.10 lakhs  
C) Rs. 15 lakhs  
D) Rs. 12 lakhs

**Answer: C) Rs. 15 lakhs**

259. Which order lever is claw hammer?

- A) Curved lever  
B) 2nd order lever  
C) 1st order lever  
D) 3rd order lever

**Answer: C) 1st order lever**

260. What is the SI unit of pressure?

- A) Bar  
B) Newton  
C) Joule  
D) Pascal

**Answer: D) Pascal**

261. Which of the impurity in cast iron makes it hard and brittle?

- A) Sulphur  
B) Manganese  
C) Silicon  
D) Phosphorus

**Answer: A) Sulphur**

262. What is the potential energy, if a body of mass 250 kg is at a height of 30 metre?

- A) 73.57 KJ  
B) 75.57 KJ  
C) 72.57 KJ  
D) 74.57 KJ

**Answer: A) 73.57 KJ**

263. What is the value of adding  $(5x+2y)$ ,  $(4x - 7z)$  and  $(15z - 3y)$ ?

- A)  $9x - y + 8z$   
B)  $x - 9y + 8z$   
C)  $9x + y - 8z$   
D)  $x + 9y + 8z$

**Answer: A)  $9x - y + 8z$**

264. What is the maximum percentage of stretch of its original length is allowable for elastic materials?

- A) 100%  
B) 400%  
C) 200%  
D) 300%

**Answer: D) 300%**

265. Which rubber is used as insulator for power cables and control wires?

- A) Butyl  
B) Hypalone

- C) Nitrite butadiene  
D) Silicon

**Answer: D) Silicon**

266. What is the circumference of a circle whose diameter is 7 cm?

- A) 25 cm  
B) 21 cm  
C) 22 cm  
D) 44 cm

**Answer: C) 22 cm**

267. What maximum height a stone will reach if it is thrown upwards with a velocity of 20m/sec?( $g = 10\text{m/sec}^2$ )

- A) 10 m  
B) 40 m  
C) 30 m  
D) 20 m

**Answer: D) 20 m**

268. What is a hand book?

- A) Type of reference work or other collection of instruction  
B) Model book of various works  
C) Dictionary of materials  
D) Design book of latest works

**Answer: A) Type of reference work or other collection of instruction**

269. What is the centre of gravity of a semi circle of diameter 12 cm?

- A) 3.25 cm  
B) 2.75 cm  
C) 2.54 cm  
D) 2.24 cm

**Answer: C) 2.54 cm**

270. What is the value of  $\tan \theta$  if  $\sin \theta = 4/5$  ?

- A)  $(5/3)$   
B)  $(4/5)$   
C)  $(4/3)$   
D)  $(3/4)$

**Answer: C)  $(4/3)$**

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

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

**Answer: B) 1 watt**

272. What is the tensile stress if a square rod of 10 mm side is tested for a tensile load of 1000 kg?

- A)  $10 \text{ kg/mm}^2$   
B)  $1000 \text{ kg/mm}^2$   
C)  $1 \text{ kg/mm}^2$   
D)  $100 \text{ kg/mm}^2$

**Answer: A)  $10 \text{ kg/mm}^2$**

273. What is the selling price if the cost price is Rs.7282/- with a profit of Rs.208?

- A) Rs.7698                      B) Rs.7074  
C) Rs.7290                      D) Rs.7490

**Answer: D) Rs.7490**

**274.** Which insulator is used in over head lines?

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

**Answer: D) Porcelain**

**275.** Which is the short form of profit and loss statement?

- A) PR & LS                        B) P & L  
C) PRO & LOS                    D) L & P

**Answer: B) P & L**

**276.** What is the diameter of the semicircle, if the circumference of the semicircle is 21.98 cm?

- A) 8.55 cm                        B) 8 cm  
C) 7.55 cm                        D) 7 cm

**Answer: A) 8.55 cm**

**277.** Which is the unit of resistance?

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

**Answer: D) Ohm**

**278.** Which metal cannot be forged?

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

**Answer: C) Cast iron**

**279.** What is the value of  $\frac{12x^3y^2}{4x^2y}$ ?

- A) 8xy                              B) 16xy  
C) 3xy                                D) (-3xy)

**Answer: C) 3xy**

**280.** What is the carbon percentage in high carbon steel?

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

**Answer: A) 0.50% to 1.50%**

**281.** What is the boiling point of mercury?

- A) 357 Degree C                  B) 280 Degree C  
C) 767 Degree C                  D) 759 Degree C

**Answer: A) 357 Degree C**

**282.** What is the length of arc of a sector, whose radius is 15 cm and angle is 40 Degree?

- A) 10.4 cm                         B) 9.75 cm  
C) 9.8 cm                          D) 10.60 cm

**Answer: A) 10.4 cm**

**283.** What is the carbon percentage in medium carbon steel?

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

**Answer: C) 0.25% to 0.5%**

**284.** Which law states about electromagnetic induction?

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

**Answer: B) Faraday's law**

**285.** What is the mechanical advantage, if a load of 1000 kg is lifted by a simple machine and effort applied is 250 kg?

- A) 4                                  B) 6  
C) 8                                  D) 3

**Answer: A) 4**

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

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

**Answer: D) Resistance**

**287.** What is the melting point of mercury?

- A) -38.72 Degree C                B) -209 Degree C  
C) -7.1 Degree C                  D) -357 Degree C

**Answer: A) -38.72 Degree C**

**288.** What is called for the materials that restricts heat flow by radiation, conduction and convection?

- A) Insulators                      B) Non-ferrous  
C) Ferrous                         D) Conductors

**Answer: A) Insulators**

**289.** What is the name of a booklet, the rates of various terms are indicated?

- A) Price tag                        B) Price catalogue  
C) Price bunch                    D) Price bank

**Answer: B) Price catalogue**

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

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

**Answer: D)  $\pi (R^2 - r^2) h$**

**291.** What are the various types of heat treatment processes?

- A) Normalising, Heating, Cooling and Painting  
 B) Hardening, Soaking, Painting and Packing  
 C) Annealing, Normalising, Hardening and Tempering  
 D) Tempering, Cooling, Packing and Solling

**Answer: C) Annealing, Normalising, Hardening and Tempering**

**292.** What is the formula to find selling price (S.P) if there is a loss?

- A)  $((100 - \text{Loss \%}) / (100)) \times C.P$     B)  $((100) / (100 + \text{Profit \%})) \times S.P$   
 C)  $((100) / (100 - \text{Loss \%})) \times S.P$     D)  $((100 + \text{Profit \%}) / (100)) \times C.P$

**Answer: A)  $((100 - \text{Loss \%}) / (100)) \times C.P$**

**293.** Which one is the radiation method of heat transmission?

- A) The heat from sun travels through the space  
 B) On heating gases, heat transmitted to surroundings  
 C) Cold water goes to the bottom from top while on heating the water  
 D) An iron rod is heated with one of its end and heat transmitted to other end

**Answer: A) The heat from sun travels through the space**

**294.** What is the block weighs (W) in kg, if volume (V) is 320 cm<sup>3</sup> and density 8.9 g/cm<sup>3</sup>?

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

**Answer: D) 2.848 kg**

**295.** Which one has the highest thermal conductivity?

- A) Melting ice    B) Steam  
 C) Water    D) Solid ice

**Answer: D) Solid ice**

**296.** What force will be required to punch a hole of 10 mm dia in a 1 mm thick plate, if the allowable shear stress is 50N/mm<sup>2</sup>? (Pi = 22/7)

- A) 1571.4 N    B) 1757 N  
 C) 1575 N    D) 1577 N

**Answer: A) 1571.4 N**

**297.** Which property of material enables to formation of permanent deformation without fracture?

- A) Elasticity    B) Ductility  
 C) Brittleness    D) Plasticity

**Answer: D) Plasticity**

**298.** What is the weight of a rectangular block of a cast iron of 250cm X 20cm X 8cm (density of cast iron is 7.8 gm/cm<sup>3</sup>)?

- A) 525 kg    B) 312 kg  
 C) 410 kg    D) 372 kg

**Answer: B) 312 kg**

**299.** What is the name of the heat treatment process, where

the metal is heated and quenched in water or oil?

- A) Tempering    B) Hardening  
 C) Annealing    D) Normalising and Tempering

**Answer: B) Hardening**

**300.** Which is example for first order lever?

- A) Fire tongs    B) Lime squeezer  
 C) A pair of scissors    D) A wheel barrow

**Answer: C) A pair of scissors**

**301.** What is the ratio of ultimate load to area of original cross section?

- A) Factor of safety    B) Ultimate stress  
 C) Youngs modulus    D) Yield point

**Answer: B) Ultimate stress**

**302.** How many newtons for 1 kilogram?

- A) 9.81 Newtons    B) 98.1 Newtons  
 C) 981 Newtons    D) 0.981 Newtons

**Answer: A) 9.81 Newtons**

**303.** What is the total resistance if three resistances of 3 ohms, 9 ohms and 5 ohms are connected in series?

- A) 11 ohms    B) 1/17 ohms  
 C) 17 ohms    D) 7 ohm

**Answer: C) 17 ohms**

**304.** What is the selling price, if the profit is 5% for a computer table bought at Rs.1150/- with Rs.50/- as a transport charge?

- A) 1160    B) 1260  
 C) 1060    D) 1620

**Answer: B) 1260**

**305.** What is the centre of gravity of a sphere?

- A) At the radius    B) On the circumference  
 C) At the diameter    D) At the centre

**Answer: D) At the centre**

**306.** What is the process of heat treatment?

- A) The process of heating and cooling to change the structure and properties  
 B) The process of cooling to measure the dimensions  
 C) The process of heating and bending as per our requirement  
 D) The process of heating to change the dimensions

**Answer: A) The process of heating and cooling to change the structure and properties**

**307.** What is the density (r) in g/cm<sup>3</sup> of an iron cube, if it weighs (W) 4.8 kg and volume (V) is 640 cm<sup>3</sup>?

- A)  $6.6 \text{ g/cm}^3$     B)  $6.9 \text{ g/cm}^3$   
C)  $7.2 \text{ g/cm}^3$     D)  $7.5 \text{ g/cm}^3$

**Answer: D)  $7.5 \text{ g/cm}^3$**

**308.** What is the value of  $x^3 + 3y^2x^2$  if  $x=3$ ,  $y=2$ ?

- A) 81                                      B) 63  
C) 54                                      D) 135

**Answer: D) 135**

**309.** How much quantity of heat is required?  $m = 120$  litres  
 $t_1 = 20$  Degree C     $t_2 = 85$  Degree C     $S = 4.2$   
 $Q = \text{ \_\_\_\_\_\_ KJ}$

- A) 32780 KJ                              B) 32770 KJ  
C) 32750 KJ                              D) 32760 KJ

**Answer: D) 32760 KJ**

**310.** What is the expanded form of S.P?

- A) Selling Price                              B) Super Price  
C) Special Price                              D) Selected Price

**Answer: A) Selling Price**

**311.** What is the area of the semicircle, if the diameter is 14 cm?

- A)  $75.06 \text{ cm}^2$     B)  $86.93 \text{ cm}^2$   
C)  $70 \text{ cm}^2$     D)  $76.93 \text{ cm}^2$

**Answer: D)  $76.93 \text{ cm}^2$**

**312.** What is term used for 2 x linear expansion?

- A) Co-efficient of cubical expansion    B) Co-efficient of superficial expansion  
C) Co-efficient of friction    D) Co-efficient of linear expansion

**Answer: B) Co-efficient of superficial expansion**

**313.** What is the value of  $14x+3y+25x+2y$ ?

- A)  $17x + 27y$                               B)  $16x + 28y$   
C)  $39x + 5y$                               D)  $44xy$

**Answer: C)  $39x + 5y$**

**314.** What is the ratio between lateral strain and longitudinal strain?

- A) Poisson's ratio                              B) Young's modulus  
C) Bulk modulus                              D) Hooks law

**Answer: A) Poisson's ratio**

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

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

**Answer: C) 400 volts**

**316.** What is the use of engineering drawing?

- A) For reducing the cost    B) For colourful appearance  
C) For estimation of material and execution of work    D) For increasing the cost

**Answer: C) For estimation of material and execution of work**

**317.** What is the formula for speed?

- A) Change in velocity/Time    B) Change in momentum/Time  
C) Distance covered/Time    D) Distance in definite direction /Time

**Answer: C) Distance covered/Time**

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

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

**Answer: D) Grey cast iron**

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

- A)  $75 \text{ cm}^2$     B)  $80 \text{ cm}^2$   
C)  $90 \text{ cm}^2$     D)  $85 \text{ cm}^2$

**Answer: B)  $80 \text{ cm}^2$**

**320.** What is the diameter of the circle, if the area of the circle is  $78.5 \text{ cm}^2$ ?

- A) 5.5 cm                                      B) 10 cm  
C) 15 cm                                      D) 5 cm

**Answer: B) 10 cm**

**321.** What will be the rpm of smaller gear if a 180 mm dia meshes with 60 mm dia gear and the bigger gear makes 60 rpm?

- A) 180 rpm                                      B) 140 rpm  
C) 160 rpm                                      D) 120 rpm

**Answer: A) 180 rpm**

**322.** What is the square root of decimal number 550.37?

- A) 22.26                                      B) 23.46  
C) 21.26                                      D) 22.46

**Answer: B) 23.46**

**323.** What is the total estimation cost for making the component of 8 drilled hole dia 10 mm and 4 Numbers of M6 taps in the plate, if Rs.8/- per drilled holes and Rs.12 per drill and tap?

- A) Rs.110                                      B) Rs.102  
C) Rs.100                                      D) Rs.112

**Answer: D) Rs.112**

324. How many watts for 1 horse power in British system?

- A) 756 watts                      B) 726 watts  
C) 736 watts                      D) 746 watts

**Answer: D) 746 watts**

325. Which is the formula for  $a^{m+n}$ /  
 $a^n$

- A)  $a^{m+n}$                       B)  $(a^m)^n$   
C)  $a^{m-n}$                       D)  $a^{m \times n}$

**Answer: C)  $a^{m-n}$**

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

- A)  $638 \text{ cm}^2$                       B)  $620 \text{ cm}^2$   
C)  $628 \text{ cm}^2$                       D)  $630 \text{ cm}^2$

**Answer: C)  $628 \text{ cm}^2$**

327. Which is the suitable nitriding process for all alloyed and unalloyed steels?

- A) Gas nitriding                      B) Silver nitriding  
C) Nitriding in Quenching tank                      D) Nitriding in salt-bath

**Answer: D) Nitriding in salt-bath**

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

- A)  $6100 \text{ m}^3$                       B)  $6000 \text{ m}^3$   
C)  $6200 \text{ m}^3$                       D)  $5900 \text{ m}^3$

**Answer: B)  $6000 \text{ m}^3$**

329. What is the centre of gravity of a right circular cone from its base?

- A)  $h/2$                                       B)  $h/4$   
C)  $h/3$                                       D)  $h/5$

**Answer: B)  $h/4$**

330. How many degrees is equal to one radian?

- A)  $(180)/(\pi)$                       B)  $(\pi)/(180)$   
C)  $(360)/(\pi)$                       D)  $(\pi)/(360)$

**Answer: A)  $(180)/(\pi)$**

331. Which one is related to estimation of work?

- A) Bill of material                      B) Packing  
C) Information table                      D) Hand book

**Answer: A) Bill of material**

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

- A)  $20.98 \text{ cm}^2$                       B)  $20.89 \text{ cm}^2$   
C)  $20.93 \text{ cm}^2$                       D)  $20.39 \text{ cm}^2$

**Answer: C)  $20.93 \text{ cm}^2$**

333. What cables are used for 132KV lines?

- A) Extra high tension                      B) Extra super voltage  
C) Super tension                      D) High tension

**Answer: B) Extra super voltage**

334. What is the centre of gravity of a solid hemisphere from its base?

- A)  $3r/8$                                       B)  $r/2$   
C)  $4r/5$                                       D)  $3r/4$

**Answer: A)  $3r/8$**

335. What is the specific gravity of the solid, if density of the solid is  $19.5 \text{ g/cm}^3$ ?

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

**Answer: B) 19.5**

336. What is the kinetic energy of a bullet of mass 5gm travels with a speed of 500 m/sec?

- A) 635 Joules                                      B) 620 Joules  
C) 630 Joules                                      D) 625 Joules

**Answer: D) 625 Joules**

337. What is the simple interest for the principal amount of Rs.100000 at 10% per annum for 1 year period?

- A) Rs.5000/-                                      B) Rs.10000/-  
C) Rs.50000/-                                      D) Rs.1000/-

**Answer: B) Rs.10000/-**

338. What is the work done, if a force of 250 newtons acted upon a body and the body has been moved through a distance of 15 metres?

- A) 3720 Joules                                      B) 3750 Joules  
C) 3740 Joules                                      D) 3730 Joules

**Answer: B) 3750 Joules**

339. What is the term, if an article is purchased?

- A) Margin price                                      B) Cost price  
C) Selling price                                      D) Discount price

**Answer: B) Cost price**

340. What is the compounded annual interest, for a loan amount of Rs.80000/- at 10% per annum for a period of 2 years?

- A) Rs.96800/                                      B) Rs.92400/-  
C) Rs.94800/-                                      D) Rs.16800/-

**Answer: D) Rs.16800/-**

341. Which machine converts mechanical energy into electrical energy?

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

**Answer: B) Generator**

**342.** What is the boiling point of aluminium?

- A) 660 Degree C  
C) 2469 Degree C
- B) 1897 Degree C  
D) 2519 Degree C

**Answer: D) 2519 Degree C**

**343.** Which is a kind of surface hardening process?

- A) Nitriding  
C) Cementite
- B) Ferrite  
D) Tempering

**Answer: A) Nitriding**

**344.** Which specification is other than general specification?

- A) Brief specification  
C) Bulk specification
- B) Detailed specification  
D) Main specification

**Answer: B) Detailed specification**

**345.** How the profit / gain is expressed?

- A) \$  
C) %
- B) Rs.  
D) \*

**Answer: C) %**

**346.** Which affects the centre of gravity of the object

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

**Answer: B) Mass**

**347.** What is the co-efficient of linear expansion of a rod if it is found to be 100 m long at 20 Degree C and 100.14 m long at 100 Degree C?

- A)  $1.75 \times 10^{-7} / \text{Degree C}$   
C)  $1.75 \times 10^{-4} / \text{Degree C}$
- B)  $1.75 \times 10^{-5} / \text{Degree C}$   
D)  $1.75 \times 10^{-6} / \text{Degree C}$

**Answer: B)  $1.75 \times 10^{-5} / \text{Degree C}$**

**348.** What is the specific heat of the material if we require 510 calories to raise the temperature of 170 gm of material from 50 Degree C to 80 Degree C?

- A) 1.11  
C) 0.1
- B) 0.01  
D) 1.1

**Answer: C) 0.1**

**349.** What is the length of each part is a copper wire of 225 metre long is cut into 900 equal parts?

- A) 0.28 metre  
C) 0.29 metre
- B) 0.23 metre  
D) 0.25 metre

**Answer: D) 0.25 metre**

**350.** What is the angle of elevation of the top of a light house of 15 m height seen at a point 15 m away from the base?

- A) 45 Degree  
C) 60 Degree
- B) 30 Degree  
D) 90 Degree

**Answer: A) 45 Degree**

**351.** Which alloy steel is using for making precious instrument?

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

**Answer: C) Invar steel**

**352.** What is the value of ab if  $(a+b)^2 = 36$   $(a-b)^2 = 24$ ?

- A) 2  
C) 6
- B) 3  
D) 4

**Answer: B) 3**

**353.** What is the flow of electrons in any conductor?

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

**Answer: B) Current**

**354.** What is the ratio of change in length to original length?

- A) Volumetric strain  
C) Lateral strain
- B) Poisson's ratio  
D) Linear strain

**Answer: D) Linear strain**

**355.** What is the capacity of a body to do work is called?

- A) Power  
C) Acceleration
- B) Energy  
D) Force

**Answer: B) Energy**

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

- A)  $47 \text{ cm}^2$   
C)  $57 \text{ cm}^2$
- B)  $37 \text{ cm}^2$   
D)  $27 \text{ cm}^2$

**Answer: A)  $47 \text{ cm}^2$**

**357.** What is the boiling point of water in fahrenheit scale?

- A) 212 Degree F  
C) 180 Degree F
- B) 112 Degree F  
D) 100 Degree F

**Answer: A) 212 Degree F**

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

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

**Answer: B) Cupola**

**359.** Which metal contains iron as a major content?

- A) Ferrous metal  
B) Bronze metal

C) Brass metal

D) Zinc

**Answer: A) Ferrous metal**

**360.** Which IE rules are to be verified on completion of wiring on any new installation?

A) IE Rules, 1961

B) IE Rules, 1956

C) IE Rules, 1967

D) IE Rules, 1960

**Answer: B) IE Rules, 1956**

**361.** What is the matured amount for the deposit of Rs.5000/- and the simple interest earned for Rs.500/-?

A) Rs.5500

B) Rs.4500

C) Rs.6500

D) Rs.6000

**Answer: A) Rs.5500**

**362.** What is the melting point of aluminium?

A) 620 Degree C

B) 660 Degree C

C) 670 Degree C

D) 680 Degree C

**Answer: B) 660 Degree C**

**363.** What is the value of  $a^2 \times a^3 \times a^4$ ?

A)  $a^9$

B)  $a^{10}$

C)  $a^7$

D)  $a^8$

**Answer: B)  $a^{10}$**

**364.** What metals contained in brass alloy?

A) Copper and tin

B) Copper and aluminium

C) Copper and lead

D) Copper and zinc

**Answer: D) Copper and zinc**

**365.** What is the value of  $x^2 - y^2$  if  $(x+y) = 9$ ,  $(x - y) = 4$ ?

A) 13

B) 65

C) 36

D) 46

**Answer: C) 36**

**366.** What are the various stages of heat treatment?

A) Quenching, Cooling and Heating

B) Soaking, Quenching and Cooling

C) Heating, Cooling and Quenching

D) Heating, Soaking and Quenching

**Answer: D) Heating, Soaking and Quenching**

**367.** What is the ore of aluminium?

A) Bauxite

B) Lemonite

C) Hematite

D) Mallatite

**Answer: A) Bauxite**

**368.** What is the HCF of 18, 42, 24?

A) 2

B) 6

C) 24

D) 18

**Answer: B) 6**

**369.** What is the square root of 529?

A) 43

B) 33

C) 23

D) 12

**Answer: C) 23**

**370.** What is the weight of the iron ball has volume of 250 cc and density 7.5 gm/cc?

A) 1875 gram

B) 1750 gram

C) 1785 gram

D) 1975 gram

**Answer: A) 1875 gram**

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

A)  $3740 \text{ cm}^2$

B)  $3750 \text{ cm}^2$

C)  $3755 \text{ cm}^2$

D)  $3745 \text{ cm}^2$

**Answer: B)  $3750 \text{ cm}^2$**

**372.** What is called if a body posses both magnitude and direction of velocity?

A) Velocity

B) Speed

C) Scalar quantity

D) Vector quantity

**Answer: D) Vector quantity**

**373.** What denotes letter M in MKS system?

A) Mile

B) Meter

C) Millimeter

D) Micron

**Answer: B) Meter**

**374.** Which alloy steel is used to make permanent magnets?

A) Vanadium steel

B) Manganese steel

C) Cobalt steel

D) Silicon steel

**Answer: C) Cobalt steel**

**375.** What is called if the length of the solid expands when heated?

A) Linear expansion

B) Cubical expansion

C) Area expansion

D) Superficial expansion

**Answer: A) Linear expansion**

**376.** Which affects the centre of gravity of the object?

A) Density

B) Shape

C) Mass

D) Weight

**Answer: C) Mass**

**377.** What is the ratio of force (or) thrust per unit area?

A) Work

B) Energy

C) Power

D) Pressure

**Answer: D) Pressure**

**378.** What is the total cost to assemble 10 personal computer systems, spares cost as given for one system: 1 TB hard disc Rs.4500/-, Intel i3 mother board Rs.7000/-, SMPS Rs.2500/-, monitor Rs.6000/-, keyboard Rs.1000/-, other material cost (Switches, USB, Cabl

- A) Rs.265000/-                      B) Rs.275000/-  
C) Rs.225000/-                      D) Rs.250000/-

**Answer: B) Rs.275000/-**

**379.** Which one is the ratio of stress?

- A) Load and time                      B) Load and area  
C) Load and direction                      D) Load and diameter

**Answer: B) Load and area**

**380.** What are the two classifications of system of units?

- A) Gravitational and non-gravitational                      B) British and Metric  
C) Metric and International                      D) Fundamental and derived

**Answer: D) Fundamental and derived**

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

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

**Answer: D) 76 cm**

**382.** What is the ratio of shear stress to shear strain?

- A) Bulk modulus                      B) Modulus of elasticity  
C) Yield point                      D) Modulus of rigidity

**Answer: D) Modulus of rigidity**

**383.** What is the minimum permissible size of aluminium wire used in estimation?

- A) 2.5 sq.mm                      B) 3.5 sq.mm  
C) 5 sq.mm                      D) 1.5 sq.mm

**Answer: D) 1.5 sq.mm**

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

- A)  $1962.5 \text{ cm}^2$                       B)  $1932.5 \text{ cm}^2$   
C)  $1942.5 \text{ cm}^2$                       D)  $1952.5 \text{ cm}^2$

**Answer: A)  $1962.5 \text{ cm}^2$**

**385.** What is a profit?

- A) Cost price + Selling price                      B) Selling price - Cost price  
C) Cost price - Selling price                      D) Selling price + Cost price

**Answer: B) Selling price - Cost price**

**386.** Which one is a poor heat insulator?

- A) Saw dust                      B) Rubber  
C) Cork                      D) Glass

**Answer: D) Glass**

**387.** What is the value of x if  $13+x=20$ ?

- A) 8                      B) 9  
C) 13                      D) 7

**Answer: D) 7**

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

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

**Answer: C) 12 W**

**389.** What is the total labour charges for a particular wiring work completed in 2 days by one electrician and one helper.(Electrician @ ₹800/day and helper @ Rs 400/day)

- A) Rs. 2400                      B) Rs. 3000  
C) Rs. 2000                      D) Rs. 1400

**Answer: A) Rs. 2400**

**390.** Which refers the temperature?

- A) It is a form of energy                      B) It is measured by calorie meter  
C) It tells the state of heat                      D) It tells specific heat of substance

**Answer: C) It tells the state of heat**

**391.** What is the radius of the circle, whose circumference is 440 cm?

- A) 71.5 cm                      B) 72.2 cm  
C) 70.5 cm                      D) 70 cm

**Answer: D) 70 cm**

**392.** What is the density of aluminium?

- A)  $2.7 \text{ g/cm}^3$                       B)  $4.7 \text{ g/cm}^3$   
C)  $3.7 \text{ g/cm}^3$                       D)  $5.7 \text{ g/cm}^3$

**Answer: A)  $2.7 \text{ g/cm}^3$**

**393.** What is the percentage of copper if the casting weight of copper 42.3 kg and tin weight 2.7 kg?

- A) Cu 94%                      B) Cu 96%  
C) Cu 92%                      D) Cu 98%

**Answer: A) Cu 94%**

**394.** What is the tensile strain if a force of 3.2 KN is applied to a bar of original length 2800 mm extends the bar by 0.5 mm?

- A) 0.0001687                      B) 0.0001968  
C) 0.0001786                      D) 0.0001867

**Answer: C) 0.0001786**

**395.** What is the principal amount deposited, if the maturity proceeds to an amount of Rs.25000/- and interest earned Rs.6000/-?

A) Rs.19000/-

B) Rs.20000/-

C) Rs.25000/-

D) Rs.31000/-

**Answer: A) Rs.19000/-**

A) Pale

B) Purple

C) Blue

D) Brown

**Answer: D) Brown**

**396.** What is the diameter of the circle, if the area of the circle is  $706.5\text{cm}^2$ ?

A) 29.5 cm

B) 29 cm

C) 30.5 cm

D) 30 cm

**Answer: D) 30 cm**

**405.** How many millimetres are there in 1 inch?

A) 2.45 mm

B) 25.4 mm

C) 24.5 mm

D) 2.54 mm

**Answer: B) 25.4 mm**

**397.** What is the centre of gravity of a right circular cone from its base?

A)  $h/5$

B)  $h/2$

C)  $h/4$

D)  $h/3$

**Answer: C)  $h/4$**

**406.** What is the value of  $625^0$ ?

A) 1

B) 25

C) 525

D) 0

**Answer: A) 1**

**398.** What is the rate of change of displacement of a body?

A) Speed

B) Body at motion

C) Body at rest

D) Velocity

**Answer: D) Velocity**

**407.** What are the three consecutive numbers if their sum is 42?

A) 14,15,16

B) 11,12,13

C) 12,13,14

D) 13,14,15

**Answer: D) 13,14,15**

**399.** What is the value of  $x$ , if  $3(2x - 4) = -4x + 28$ ?

A) 6

B) 4

C) 8

D) 12

**Answer: B) 4**

**408.** What is called mass per unit volume of a substance?

A) Mass

B) Volume

C) Density

D) Weight

**Answer: C) Density**

**400.** What is the freezing point of water in kelvin scale (K)?

A) 373 Degree K

B) 273 Degree K

C) 313 Degree K

D) 303 Degree K

**Answer: B) 273 Degree K**

**409.** What is the area of the sector, whose diameter is 40 mm and angle is 120 Degree?

A)  $418.66\text{mm}^2$

B)  $416.6\text{mm}^2$

C)  $400.50\text{mm}^2$

D)  $415.5\text{mm}^2$

**Answer: A)  $418.66\text{mm}^2$**

**401.** How many days a mechanic takes to assemble 64 machines if he assembles 8 machines in 3 days?

A) 22 days

B) 26 days

C) 24 days

D) 20 days

**Answer: C) 24 days**

**410.** What is the S.I unit of heat?

A) British thermal unit

B) Centigrade heat unit

C) Joule

D) Calorie

**Answer: C) Joule**

**402.** What is the compounded amount, if the principal of Rs.30000/- and interest earned at 7% per annum is Rs.4347?

A) Rs.32347/-

B) Rs.34347/-

C) Rs.30347/-

D) Rs.33347/-

**Answer: B) Rs.34347/-**

**411.** How many ergs for 1 Joule?

A)  $10^3$  ergs

B)  $10^7$  ergs

C)  $10^9$  ergs

D)  $10^5$  ergs

**Answer: B)  $10^7$  ergs**

**403.** What is denoted as 'I'?

A) Year

B) Principal

C) Rate

D) Interest

**Answer: D) Interest**

**412.** Divide  $(20/31)/(15/62)$

A)  $2(1/3)$

B)  $2(4/3)$

C)  $2(3/2)$

D)  $2(2/3)$

**Answer: D)  $2(2/3)$**

**404.** What is colour of a metal piece when heated to 250 Degree C while doing the tempering process?

**413.** What is called if a body changes its position with respect to its surroundings?

A) Velocity

B) Speed

C) Body at motion

D) Body at rest

**Answer: C) Body at motion**

---