

1. The relation between diameter of rivet (d) and the thickness of plate (t) is:

1.  $d = 3\sqrt{t}$

2.  $d = 4\sqrt{t}$

3.  $d = 5\sqrt{t}$

4.  $d = 6\sqrt{t}$

2. The example of a dead weight governor is

1. Watt governor

2. Hartnell governor

3. Porter governor

4. Pickering governor

3. The most suitable metal for making electro - magnets and transformer cores is

1. Steel

2. Iron

3. Copper

4. Aluminium

4. The relative permeability of iron is of the order of

1. 1

2.  $10^4$

3. Zero

4.  $10^{-4}$

5. Modulus of elasticity is defined as the ratio of:

1. Shear stress to shear strain

2. Linear stress to linear strain

3. Linear stress to lateral strain

4. Lateral stress to linear strain

6. The smallest planet of solar system is

1. Mars

2. Mercury

3. Venus

4. Pluto

7. In a certain code SHOVE is written as VKRYH, then PISTOL will be written as:

1. SLVWRO

2. SVLWRO

3. SVLURO

4. VLSWRO

8. A lunar eclipse happens when :

1. Moon comes between earth and sun

2. Sun comes between earth and moon

3. Earth comes between sun and moon

4. None of these

9. The currency of Italy is called:

1. Lira

2. Euro

3. Franc

4. Corner

10. The richter scale is used to record:

1. Velocity of air

2. Earthquake

3. Intensity of earthquake

4. Pressure

11. What is the kinetic energy of rotation when a body of mass moment of inertia I about a given axis is rotated about that axis with an angular velocity  $\omega$ ?

1.  $I \cdot \omega$

2.  $\frac{1}{2} I \cdot \omega^2$

3.  $I \cdot \omega^2$

4.  $\frac{1}{2} I \cdot \omega$

12. The highest score in a cricket test match in an innings was  $\frac{5}{21}$  of the total, and the next highest was  $\frac{5}{24}$  of the remainder. Difference between the scores was 25 runs. What was the total score?

1. 260

2. 275

3. 300

4. 315

13. A prize money is divided between A, B and C. A receives  $\frac{2}{5}$  of the prize, B receives  $\frac{1}{9}$  of the remainder. If C's share is Rs. 80. find the value of the prize

1. Rs. 130

2. Rs. 150

3. Rs. 180

4. Rs. 220

14. The cost of manufacturing a car is made up of three items; cost of materials, labour and overheads. In 2002, the cost of these items was in the ratio of 5 : 4 : 3. In 2003, the cost of materials rose by 16%, the cost of labour increased by 10% but the overheads reduced by 8%. What is the increased per cent in the price of car?

1. 6%

2. 7%

3. 8%

4. 12%

15. If the rainfall on a certain day was 3.5 cm, how many liters of water fell on 1 hectare land on that day?

1. 350000 litres

2. 35000 litres

3. 3500 litres

4. 350 litres

16. Two equal sums were lent out at 7% and 5% simple interest respectively. The interest earned on the two loans add up to Rs. 960 for 4 years. Find the total sum lent out:

1. Rs. 3,860

2. Rs. 4,000

3. Rs. 4,100

4. Rs. 4,230

17. A man sells two tables at equal price. He sells one at 10% gain and other at 10% loss. What is the gain/loss per cent in this transaction?

1. 1.1% loss

2. 1% loss

3. 1% gain

4. 1.1% gain

18. A photographer allows a discount of 16% at the marked price. At what price should he mark the camera of cost Rs. 600 so that he gains 20% after allowing discount?

1. Rs. 760

2. Rs. 780

3. Rs. 1000

4. Rs. 820







51. Voltmeter is used to measure:  
 1. Power 2. Displacement  
 3. Current 4. Potential difference
52. Which of the following is the most industrialised state?  
 1. West Bengal 2. Bihar  
 3. Maharashtra 4. Rajasthan
53. Which of the following is a vector?  
 1. Power 2. Displacement  
 3. Work 4. Potential
54. In which state the folk dance 'Ghoomar' is performed?  
 1. Gujarat 2. Rajasthan  
 3. Orissa 4. Nagaland
55. The electoral college to elect President consist of the elected members of  
 1. Lok Sabha  
 2. Lok Sabha and Rajya Sabha  
 3. Lok Sabha, Rajya Sabha and Legislative Assemblies  
 4. Rajya Sabha
56. Tipu Sultan was killed in  
 1. 1799 2. 1798 3. 1797 4. 1796
57. Isobars are produced as a result of the emission of  
 1. Alpha particles 2. Beta particles  
 3. Gamma - rays 4. X-rays
58. The least energy is radiated by  
 1. X-rays 2. Gamma-rays  
 3. Electric waves 4. Alpha-rays
59. A charged capacitor processes ..... energy:  
 1. kinetic 2. potential  
 3. electrostatic 4. magnetic
60. Which of the following is the source of solar energy?  
 1. Magnetic Radiation 2. Burning hydrogen  
 3. Chemical energy 4. Nuclear fission/fusion
61. Woollen clothes keep us warm in winter because:  
 1. they give heat to body  
 2. they protect the heat of body from escaping  
 3. they protect the cold from entering the body  
 4. None of these
62. The Hygrometer is an instrument used to measure:  
 1. rainfall 2. altitude  
 3. relative humidity 4. temperature
63. Which is the source of copper?  
 1. Aragonite 2. Cassiterite  
 3. Cerussite 4. Calamine
64. An alloy of copper and tin is called:  
 1. Bronze 2. Brass  
 3. Gunmetal 4. Y-alloy
65. What is the chemical name of Bleaching Powder?  
 1. Copper sulphate 2. Sodium hydroxide  
 3. Potassium hydroxide 4. Calcium hypochlorite
66. Highest percentage of carbon is available in:  
 1. mild steel 2. high carbon steel  
 3. cast iron 4. stainless steel
67. Radio carbon dating is associated with which of the following?  
 1. Soils 2. Fossils  
 3. Rocks 4. Buildings
68. Bauschinger effect is associated with which of the following?  
 1. Hardness 2. Fatigue  
 3. Creep 4. None of these
69. To check the growth of algae in water reservoirs which of the following chemicals is used?  
 1. Brine 2. Alum  
 3. Copper sulphate 4. Bleaching powder
70. At every high pressure a real gas, as compared to an ideal gas, occupies:  
 1. same volume 2. less volume  
 3. more volume 4. Any of these
71. Capacity of a dry cell is:  
 1. more when it is supplying current for intermittent periods  
 2. more when it is supplying current for continuous periods  
 3. unaffected by the type of discharge  
 4. None of these
72. For the same maximum pressure and heat input, the most efficient cycle is:  
 1. Otto cycle 2. Diesel cycle  
 3. Brayton cycle 4. Dual combustion cycle
73. The property by which an amount of energy is absorbed by a material without plastic deformation is called  
 1. toughness 2. impact strength  
 3. ductility 4. resilience
74. A carnot engine receiving heat at 400 K has an efficiency of 25%. The C.O.P. of a carnot refrigerator working between the same temperature limit is:  
 1. 1 2. 2  
 3. 3 4. 4
75. Second law of the thermodynamics defines:  
 1. heat 2. work  
 3. enthalpy 4. entropy
76. Why are oil rings slotted?  
 1. To provide an escape for the oil that the slot edges cut from the cylinder wall  
 2. To minimize friction  
 3. To remove oil from cylinder  
 4. To reduce the bulk
77. Maximum torque is generated by an engine when:  
 1. it runs at lowest speed  
 2. it develops maximum power  
 3. it consumes maximum fuel  
 4. it runs at maximum speed
78. In a boiler maximum energy loss occurs due to  
 1. radiant losses 2. flue gases  
 3. incomplete combustion 4. unburnt carbon in ash



79. The ratio of indicated power to shaft power is known as.... efficiency
1. adiabatic
  2. mechanical
  3. isothermal
  4. volumetric
80. The performance of reciprocating compressor is compared on the basis of .... efficiency
1. volumetric
  2. mechanical
  3. over all
  4. isothermal
81. Which of the following features improves the fatigue strength of a metallic material?
1. Increasing the temperature
  2. Scratching the surface
  3. Overstressing
  4. Under-stressing
82. Which of the following statement is correct?
1. Energy and work are scalars
  2. Energy, momentum and velocity are vectors
  3. Force, momentum and velocity are scalars
  4. Force and work are vectors
83. Throttling process is
1. reversible
  2. irreversible
  3. theoretical
  4. None of these
84. Natural frequency is independent of
1. amplitude of oscillation
  2. mass of the system
  3. stiffness of the system
  4. All of these
85. Regenerative cycle efficiency:
1. is same as simple Rankine cycle thermal efficiency
  2. is always less than simple Rankine cycle thermal efficiency
  3. is always greater than simple Rankine cycle thermal efficiency
  4. None of these
86. Which of the following modes of heat transfer would take place predominantly, from boiler furnace to water wall?
1. Convection
  2. Conduction
  3. Radiation
  4. Conduction and Convection
87. As warm air cools, its relative humidity:
1. decreases
  2. increases
  3. remains unchanged
  4. unpredictable
88. The property of a fluid which determines its resistance to shearing stresses is called
1. viscosity
  2. surface tension
  3. compressibility
  4. None of these
89. The unit of stress in S.I. unit is
1.  $N/m^2$
  2.  $kN/mm^2$
  3.  $N/mm^2$
  4. All of these
90. In an automobile, the power is transmitted from the gear box to the differential through
1. Knuckle joint
  2. Bevel gears
  3. Hooke's joint
  4. Oldham's coupling
91. For fatigue loading, factor of safety is the ratio of:
1. endurance limit to the working stress
  2. elastic limit to the working stress
  3. elastic limit to the yielding point
  4. Youngs modulus to the ultimate tensile strength
92. Bending moment on a section s maximum when shear force is
1. zero
  2. maximum
  3. minimum
  4. changing sign
93. Fuel used for blast furnace is
1. coal
  2. coke
  3. wood
  4. producer gas
94. The included angle between V-belt is usually between
1.  $10^\circ-20^\circ$
  2.  $30^\circ-40^\circ$
  3.  $60^\circ-80^\circ$
  4.  $20^\circ-30^\circ$
95. In screw jack, effort required to lift a load is give by
1.  $P = \omega \tan (\alpha + \phi)$
  2.  $P = \omega \tan (\alpha - \phi)$
  3.  $P = \omega \tan (\phi + \alpha)$
  4. None of these
96. The separation between two points in space is called
1. Volume
  2. Width
  3. Area
  4. Length
97. Electrodes used in spot welding have a tip of
1. Aluminum
  2. Brass
  3. Carbon
  4. Copper
98. Damping current can be produced by
1. Eddy currents
  2. Resistance
  3. Potential
  4. Magnet
99. If  $6 \times 6 = 33$ ,  $8 \times 2 = 41$  and  $4 \times 5 = 22.5$  then  $8 \times 6 = ?$
1. 24
  2. 43
  3. 38
  4. 2.66
100. What will come in place of question mark (?) in the following question?
- 
1. 10
  2. 11
  3. 12
  4. 13
101. The nominal head of Commonwealth countries is:
1. Queen of England
  2. Pope
  3. Secretary-General of the United Nations
  4. President of the United States
  5. None of these
102. Which of the following statements is incorrect?
1. Sri Ronald Ross discovered the cause of malaria
  2. Vasco de Gama discovered the sea route to India in 15<sup>th</sup> century
  3. Edward Jenner discovered vaccination
  4. Henry Cavendish discovered oxygen
  5. Marc Polo was a famous inventor who travelled China
103. Lignite is a type of:
1. marble
  2. sand
  3. iron
  4. coal
  5. manganese
104. Sir Issac Pitman was propounder of:
1. Typing System
  2. Drugs for malaria
  3. Antibiotics
  4. Printing Press
  5. Computer



