



Model Test

61. One ball is dropped while another ball is thrown downward with 10 m/s simultaneously then the separation of two bodies will be 18 m after
(2 marks)

☐ 1.8 s

☐ 9 s

☐ 4.5 s

☐ 3.6 s

62. A body crosses the topmost point of a vertical circle with critical speed. The radial acceleration of body when it reaches at horizontal position is
(2 marks)

☐ g

☐ 2g

☐ 3g

☐ 4g

63. A large block of ice of 10 m thick has a hole drilled on it. This block is floating on surface of water on lake then minimum length of rope required to scoop up a bucket full of water through hole is (density of ice = 0.9 g/cc)
(2 marks)

☐ 10 m

☐ 9 m

☐ 1 m

☐ 5 m

64. Two cylinders A & B are fitted with pistons contains equal number of moles of of ideal monoatomic gas at 400 K. The piston of A is free to move and piston of B is fixed. When equal amount of heat is given to each cylinder. Then rise in temperature of A is 42 K then rise in temperature of B will be
(2 marks)

☐ 21 K

☐ 35 K

☐ 42 K

☐ 70 K

65. A body cools from 70°C to 50°C in 5 minutes. The temperature of surrounding is 20°C then temperature in next 10 minutes will be
(2 marks)

☐ 25°C

☐ 30°C

☐ 35°C

☐ 45°C

66. A charge Q is placed at each corner of a cube of side 'a'. The potential at the centre of cube will be
(2 marks)

☐ $\frac{8Q}{\pi\epsilon_0 a}$

☐ $\frac{4Q}{4\pi\epsilon_0 a}$

☐ $\frac{4Q}{\sqrt{3}\pi\epsilon_0 a}$

☐ $\frac{2Q}{\pi\epsilon_0 a}$

67. A piano string of length 1.25 m long is made of steel of density $8000kg/m^3$ and Young's modulus $2 \times 10^{11} N/m^2$. It is maintained at a tension which produce an elastic strain of 1% in the string. The fundamental frequency of vibration of string will be
(2 marks)

☐ 100 Hz

☐ 150 Hz

☐ 200 Hz

☐ 250 Hz

68. A pond of water is 5 m deep A flame is held 3m above the surface of water. A fish is at 4m depth from surface of water. The refractive index of water is $\frac{4}{3}$ then the height of flame from eyes of fish is
(2 marks)

☐ 8 m

☐ 6 m

☐ 9 m

☐ 12 m

69. A slit of width 'd' is is placed in front of a lens of focal length 0.5 m and is illuminated normally with light of wavelength $5.89 \times 10^{-7} m$. The first diffraction maxima on either side of central maxima are at $2 \times 10^{-3} m$. The width of shit is
(2 marks)

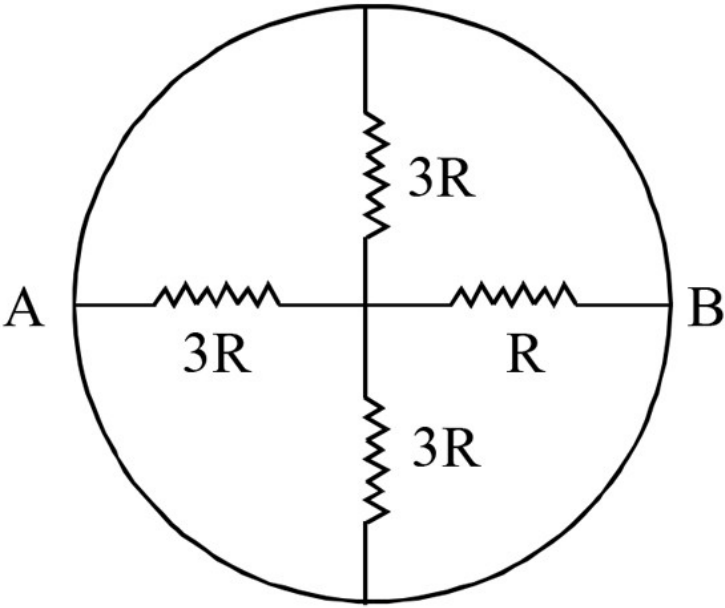
☐ $1.47 \times 10^{-4} m$

☐ $2.9 \times 10^{-4} m$

☐ $1.47 \times 10^{-7} m$

☐ $2.9 \times 10^{-7} m$

70. The equivalent resistance from fig across AB is



(2 marks)

☐ 10R

☐ 2R

☐ 7R

☐ 0

Next

