Thermal Physics, Circular Motion and Oscillations – Test B

1. An object is moving in a circle. In what direction does the centripe[...]
   A Outward from the centre of the circle
   B Towards the centre of the circle
   C At a tangent to the circle in the direction of motion
   D At a tangent to the circle opposite to the d[...]ion of motion

2. Which one of these repre[...] ar[...]lar velocity?
   A u C π [...]

3. In a[...] gas, which one of these relationships is correct when oth[...]
   A $V \propto \dfrac{1}{P}$ B $P \propto \dfrac{1}{T}$ C $V \propto \dfrac{1}{T}$ [...]
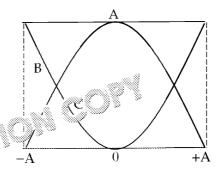
4. Copy and complete the sentence using words from the list.

   restoring force   equilibrium position   [...]
   maximum displacement   velocity

   Simple harmonic motion is a special type of periodic motion where[...]
   directed towards the _____ and is proportional to _____

5. Sketch a velocity–time graph for an object in simple harmonic moti[...]
   object in the equilibrium position.

6. The equation for t[...] [...]riod, T, of a simple pendulum is $T = 2\pi$[...]

   (a) [...] th[...] quantity represented by g in the equation.
   (b) [...] he equation to explain why the time period of a 0.1 kg pe[...]
       that of a 1.0 kg pendulum.
   (c) Calculate T where $l = 0.75$ m.
       Give your answer to a suitable number of significant figures.

7. The graph shows the variations in energy with displacement in a si[...]

   (a) [...] tate what is represented by line C.
       (ii) Explain why this quantity is minimum at -A and +A.
   (b) Explain how line A is related to lines B and C.

8. A student notices that the vibration of a washing machine changes ⋮ the drum. At a particular speed, the vibration is maximum. Name ⋮

9. A pizza comes out of an oven at 200 °C. The cheese remains hot f⋮ after it is removed from the oven. Explain why.

10. A student heats two ice cubes and ... the same conditions. One ice c⋮ takes longer to completely ... it. Use the equation $Q = mL$ to expla⋮

11. In the equation for ideal gases, $pV = nRT$.
    (a) State the unit of V
    (b) State the quantity represented by R

12. A fixed mass of gas is contained in a sealed syringe at constant tem⋮ theory to explain what happens to the pressure of the gas as its volu⋮

13. Which one of these options correctly completes this sentence?
    The gravitational force between two masses is proportional to
    A the magnitude of one mass only
    B the magnitude of both masses only
    C the magnitude of both masses and proportional to the square of⋮
    D the magnitude of both masses and inversely proportional to the squ⋮

Preview of Questions Ends Here