

Time: 1 Hour 30 Minutes

Max. Marks: 40

Instructions:

1. The question paper has 4 sections and 17 questions. Answer all the questions.
2. Section A: 10 multiple choice questions of 1 mark each.
3. Section B: 3 questions of 2 marks each. Section C: 2 questions of 4 marks each.
4. Section D: 2 questions of 8 marks each, with internal choice.
5. Draw diagrams wherever necessary and show all steps in numerical problems.

SECTION – A

10 × 1 = 10

Choose the correct answer and write its letter.

1. The SI unit of temperature is
A) degree Celsius B) kelvin C) degree Fahrenheit D) joule
2. The change of a solid directly into a gas without becoming a liquid is called
A) evaporation B) condensation C) sublimation D) fusion
3. Which of the following is a mixture?
A) water B) common salt C) air D) sugar
4. Which of the following shows the Tyndall effect?
A) salt solution
B) milk
C) copper sulphate solution
D) sugar solution
5. The SI unit of acceleration is
A) m/s B) m/s² C) m s D) m
6. The slope of a distance–time graph gives
A) acceleration B) speed C) displacement D) force
7. The inertia of an object depends on its
A) speed B) shape C) mass D) colour
8. The SI unit of force is
A) newton B) joule C) watt D) pascal
9. The value of acceleration due to gravity (g) on the surface of the Earth is about
A) 6.67 m/s² B) 9.8 m/s² C) 1.6 m/s² D) 98 m/s²
10. The mass of an object on the Moon, compared to its mass on the Earth, is
A) one-sixth B) six times C) the same D) zero

SECTION – B

3 × 2 = 6

11. Why do we feel cool on a hot day when we sweat?
12. Differentiate between a homogeneous mixture and a heterogeneous mixture, giving one example of each.

13. A car increases its speed uniformly from 18 km/h to 36 km/h in 5 seconds. Find its acceleration.

SECTION – C

2 × 4 = 8

14. How will you separate a mixture of common salt, sand and camphor? Write the steps in order.

15. A force of 5 N gives a mass m_1 an acceleration of 10 m/s^2 and a mass m_2 an acceleration of 20 m/s^2 . What acceleration would the same force give if both masses were tied together?

SECTION – D

2 × 8 = 16

Each question has an internal choice. Answer either (A) or (B).

16. A) State Newton's three laws of motion. Give one example from daily life for each law.

(OR)

B) Using the velocity–time graph, derive the equations (i) $v = u + at$ and (ii) $s = ut + \frac{1}{2}at^2$.

17. A) Describe an activity to study the change of state of water from ice to water vapour. Draw the temperature–time graph and explain the latent heat of fusion and the latent heat of vaporisation.

(OR)

B) What is chromatography? Describe how you will separate the dyes in black ink using chromatography, with a neat diagram. Write two applications of chromatography.

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