Question Paper

General Section

Q1: What is the primary idea that the chapter 'Motion' aims to explain?

A. The concept of relative motion and its implications.

B. The calculation of speed and velocity.

C. The laws of thermodynamics.

D. The principles of electromagnetism.

Q2: Why don't we directly perceive the motion of the Earth, even though it is in motion?

A. The Earth moves very slowly.

B. The Earth's motion is too vast to be perceived directly.

C. We are also moving with the Earth, making its motion relative to us seem negligible.

D. The Earth's motion is only apparent and not real.

Q3: According to the text, what makes the terms 'left' and 'right' meaningful?

A. They are absolute directions.

B. They depend on the context and the observer's assumed direction.

C. They are defined by geographical coordinates.

D. They are universally understood without context.

Q4: When is a statement considered to have meaning, according to the text?

A. When it uses grammatically correct sentences.

B. When it consists of sensible words.

C. When there is a relation between words and context.

D. When it is a common phrase used in daily life.

Q5: How is the concept of 'up' and 'down' explained in the context of the Earth?

A. They are absolute directions perpendicular to the Earth's surface.

B. They are relative to the observer's position on the Earth's surface.

C. They are determined by the direction of the sun.

D. They are fixed directions in space.

Q6: In the conversation between Srinu and Somesh (Figure 3), what is the state of motion of the tree with respect to Srinu and Somesh?

A. Moving due east.

B. At rest.

C. Moving due west.

D. Cannot be determined.

Q7: From the perspective of the passenger in the car (Figure 4), what is the state of motion of the tree?

A. At rest.

B. Moving due east.

C. Moving due west.

D. Cannot be determined.

Q8: What does the text define as 'motion of an object'?

A. When an object changes its color.

B. When an object's position is changing continuously with time relative to an observer.

C. When an object is producing sound.

D. When an object is illuminated.

Q9: In Activity 1, what is 'Distance' defined as?

A. The shortest distance between the initial and final points.

B. The length of the path traversed by an object in a given time interval.

C. The straight-line distance covered by an object in a specified direction.

D. The displacement of the object.

Q10: According to the text, what is 'Displacement'?

A. The total path length covered.

B. The shortest distance covered by the object in a specified direction.

C. The change in speed of the object.

D. The time taken to complete the motion.

Q11: What type of physical quantity is displacement?

A. Scalar

B. Vector

C. Unitless

D. Constant

Q12: What is the SI unit of distance and displacement?

A. Kilometer (km)

B. Centimeter (cm)

C. Meter (m)

D. Mile (mi)

Q13: In Activity 2, what does the length of the directed line segment representing a vector indicate?

A. The direction of motion.

B. The magnitude of the vector.

C. The time taken.

D. The acceleration.

Q14: When do the distance covered and the magnitude of displacement become equal?

A. When the object moves in a circular path.

B. When the object moves back and forth.

C. When the object moves in a straight line without changing direction.

D. When the object stops moving.

Q15: What is the average speed of an object?

A. The change in velocity divided by the time taken.

B. The total distance covered divided by the time taken.

C. The total displacement divided by the time taken.

D. The instantaneous velocity of the object.

Q16: What is average velocity?

A. The total distance covered divided by the time taken.

B. The change in speed divided by the time taken.

C. The total displacement in a specified direction divided by the time taken.

D. The instantaneous speed of the object.

Q17: What does the speedometer of a car indicate?

A. Average velocity.

B. Average speed.

C. Instantaneous speed.

D. Displacement.

Q18: What is velocity?

A. The rate of change of distance.

B. The speed of an object in a specified direction.

C. The total distance covered.

D. The magnitude of acceleration.

Q19: In uniform circular motion, what is constant, and what changes?

A. Speed is constant, velocity changes.

B. Velocity is constant, speed changes.

C. Both speed and velocity are constant.

D. Both speed and velocity change.

Q20: According to the text, in what ways can the velocity of an object change?

A. Only by changing its speed.

B. Only by changing its direction of motion.

C. By changing its speed, its direction of motion, or both.

D. By stopping completely.