Summative Assessment – Term I 2025-26

Sample Question paper

Physics

Class : IX **Time : 1 ½ hour**
Total Score : 40

Instructions:

- The first **15 minutes** is **cool-off time**. This time is meant for **reading the questions** and **planning your answers**.

- This question paper includes 18 questions in **section A, B, C, D**

- Answer all questions. But **10, 11, 16, 17, and 18** contain **choices**.

- You need to **answer only one** of the options provided for each of these choice-based questions.

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SECTION A

Write the correct answer by choosing from the given options for questions 1 to 4. Choose the correct answer and **write it down**. **Each question carries 1 score.**   **(4 × 1 = 4)**

1. After observing the image of a light ray falling perpendicularly from medium 1 to medium 2, choose and write the correct answer related to the following statements: (1)

    i)   The angle of incidence will be equal to the angle of refraction.

    ii) The angle of incidence will be 90°.

    iii) The angle of refraction will be 0°.

    iv) If the angle of incidence is changed here, the angle of refraction will also change.
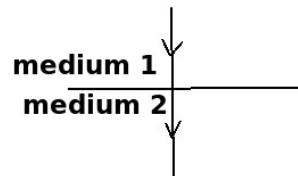
Options :

    A)   All the statements are correct.

    B)   Only statements 1, 2, and 4 are correct.

    C)   Only statements 3 and 4 are correct.

    D)   Only statement 3 is correct.

2. Examine the following statement and reason related to a mirage and choose the correct answer: (1)

    Statement (Assertion) :   In deserts and on roads at a distance, sights that appear like water are seen as a result of a mirage.

Reason : A mirage is formed due to total internal reflection of light in air layers having different temperatures.

Options :

A) Both the statement and the reason are correct, and the reason is the correct explanation for the statement (mirage)

B) Both the statement and the reason are correct, but the reason is not the correct explanation for the statement.

C) The statement is correct, but the reason is incorrect.

D) Both the statement and the reason are incorrect.

3. Observe the table related to signboards placed along roads.

   In one of the columns (A, B, or C), One of the informations has been wrongly classified. Identify and write which one is incorrect. (1)

A	(Mandatory Sign)		No parking
B	(Cautionary Sign)		Police station
C	(Informative Sign)		Hospital ahead
			School ahead
			No horn

4. Which of the following statements about inertia are correct? (1)

   1. Inertia is the tendency of an object to resist a change in its state of motion.

   2. A stationary object has no inertia.

   3. Heavier objects have more inertia than lighter ones.

   4. Inertia depends on the mass of the object.

Options :

A) Only 1 and 4
B) Only 1, 3, and 4
C) Only 1, 2, and 3
D) Only 2, 3, and 4

SECTION B

Write the answers to questions 5 to 11 in one or more sentences. Questions 10 and 11 have choices. Each question carries 2 score.

5. Observe the table given below and answer the following questions: (2)

| Medium	Refractive Index
Water	1.33
Air	1.0003
Crown Glass	1.52
Kerosene	1.44
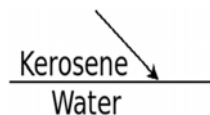
Kerosene
Water

   a)   In which medium will the speed of light be the highest? Why?

   b)   Complete the diagram of light falling from kerosene to water.

6. Observe the graphs given below. Write the correct answer.   (2)
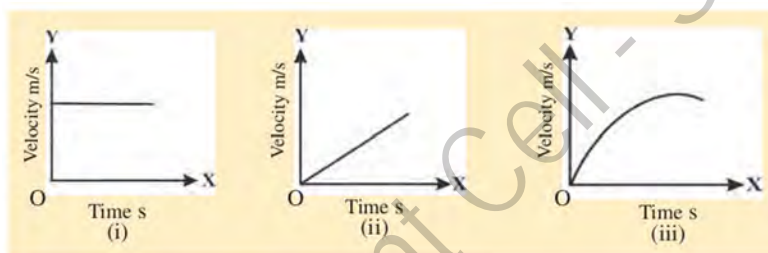
   a)   Which graph/graphs represents motion with uniform velocity? Justify your answer.

   b)   Which graph/graphs represent motion with retardation? Justify your answer.

7. A force of 18 N is applied on an object from the east towards the west direction. At the same time, a force of 25 N is acting on the object in the opposite direction.   (2)

   a)   Write the net force experienced by the object, along with its direction.

   b)   To make the net force zero, by how much should the force applied towards the east be changed? Explain.

8. Acceleration and velocity are vector quantities.   (2)

   a)   Write two examples from daily life where velocity and acceleration act in the same direction.

   b)   If they act in opposite directions, what change will occur in the motion of the object?

9.   a)   State Newton's First Law of Motion.   (2)

      b)   Write the names of two physical quantities that are defined by this law.

10 A. The figure shows a light ray incident on the boundary between two media, A and B.   (2)
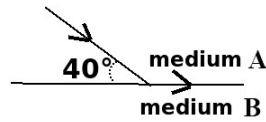
    a) What is the critical angle of medium A?

    b) What will happen to the incident ray in medium A if the angle of incidence is greater than the critical angle?

<center>OR</center>

10 B. A light ray is shown incident from air to water at an angle of 49°.
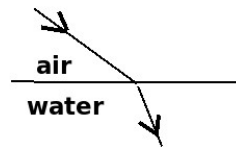
    a)   Write the reason why the refracted ray bends closer to the normal in this case.

    b)   If a light ray is incident at the same angle (49°) from water towards the boundary (water to air), what will happen to its path? Explain.

11A. A ball moves from point P and reaches Q then moves to point R and returns to point Q.

<center>(2)</center>

    a) What is the total distance travelled by the ball?

    b) Is the displacement of the ball equal to the distance travelled? Explain

<center>OR</center>

11B. Observe the diagram showing a child moving through positions Q, R, and S, finally reaching S. Find the **speed** and **velocity**, and complete the table given below.
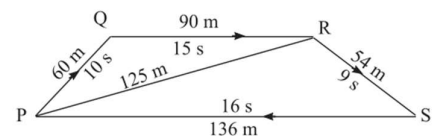
| Starting from P	Speed	Velocity
While at Q		
While at R		
While at S		

SECTION C

Write the answers to questions 12 to 17. Questions 16 and 17 have choices. Each question carries 3 score.

12. The bottom of an aquarium appears to be raised. (3)

    a) Explain the reason for this.

    b) Write two applications of this phenomenon in the field of science

13. Observe the ray diagram Showing refraction of a light ray from medium 1 to medium 2 and answer the questions based on it. (3)
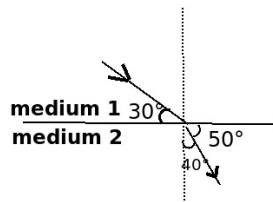
    a) When light undergoes refraction, identify and write the angle of incidence and the angle of refraction from the given diagram.

    b) It is possible to see the Sun even before it actually reaches the eastern horizon in the morning. What could be the reason? Explain in detail."

14. The refractive index of diamond is 2.4. (3)

    a) What is meant by refractive index?

    b) If the speed of light in vacuum is 3×10^8 m/s, calculate the speed of light in diamond.
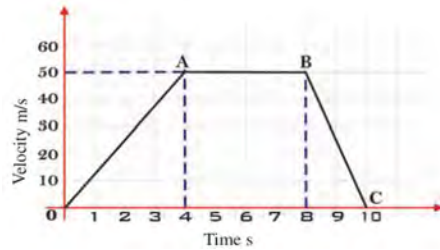
15. An object moves from point A, passes through B, and reaches C. (3)
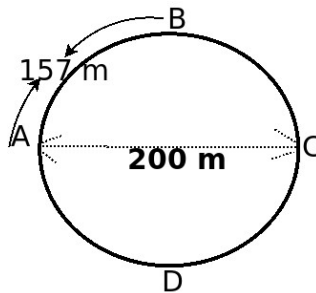
    a) What is the distance travelled by the object?

    b) If the time taken for the journey is 400 seconds, calculate the velocity.

    c) If the object returns to point A via D, what will be its velocity?

16 A. Observe Graph and answer the following questions: (3)

a) Write the quantities represented on the X-axis and Y-axis of the graph.

b) The statement says: "There is no displacement for the object from point A to B." Do you agree with this? Justify your answer.

c) Using the graph, find the displacement of the object from point O to A.

OR

16 B. Observe the table related to the motion of an object and answer the questions.

Time (s)	0	10	20	30	40	50	60	70
Velocity (m/s)	20	25	30	30	30	20	10	0

a) Choose an appropriate scale and draw a velocity–time graph.

b) Calculate the displacement of the object at 20.

17A. You know the importance of traffic rules. (3)

a) What are the main points to be taken care of while riding two-wheelers on the road?

b) What are the legal consequences if a child below 18 years of age rides a vehicle?

OR

17B. Prepare a note including key points that should be included while preparing a seminar on the topic: "Students and Road Safety."

Answer any one of the two questions. Each question carries 4 score.

18 A. An object of mass 500 g is moving with a velocity 10 m/s. (4)

    a) If the object moves with uniform velocity, calculate the time it takes to travel 100 m.

    b) If an acceleration of 4 m/s² is applied to the object, what will be its velocity after 2 s?

    c) Calculate the velocity at the moment when the body travels a displacement of 100 m with a uniform acceleration of 4 m/s². (initial velocity 10 m/s)

OR

18 B. An object moves vertically upward from the ground with an initial velocity of 50 m/s.

    a) Will the object move with uniform velocity? Justify your answer.

    b) If the object experiences a uniform retardation of 10 m/s², calculate its velocity after 3 s.

    c) If the object experiences a retardation of 10 m/s², calculate the maximum height it can reach.