Past Paper Questions

Unit 2 — Kinematics

Paper	Source
2025 (B)	Footer code 1SA-I 25004 (B) · Standard · Paper 1 of 1st Exam
2025 (D)	Footer code 1SA-I 25004 (D) · Standard · Paper 2 of 1st Exam
2025 (II)	Footer code 1SA-II 25004 · Standard · stamped 10/02/2026 · 2nd Exam
2026 (B)	Footer code 1SA-I 26004 (B) · Inclusive 2024 · 1st Annual
2026 (D)	Footer code 1SA-I 26004 (D) · Inclusive 2024 · 1st Annual
2026 (M)	Footer code 1SA-I 26004 (M) · Inclusive 2024 · 1st Annual
Model Paper 2026 (48 marks)	FBISE Model Paper · Inclusive Scheme of Studies
Model Paper 2026 (50% MCQs)	FBISE Model Paper · 60 MCQs (0.5 mark each) + 30 marks descriptive

Marks shown in teal brackets. “(OR)” marks the alternative question in a choice pair. Questions are given without answers. Total: 50 questions.

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2025 (B)

Footer code 1SA-I 25004 (B) · Standard · Paper 1 of 1st Exam

Section A — MCQ

Q2. A bird accelerates at 0.3 ms^{-2} for 3 s. Δv is:

A) 0.9 ms^{-1} B) 1.5 ms^{-1} C) 1.95 ms^{-1} D) 2.4 ms^{-1}

Q3. The given graph shows (speed-time graph: a straight line rising from the origin):

A) Uniform velocity B) Uniform acceleration C) Variable acceleration D) Negative acceleration

Section B — Short Questions (Q2)

(ii) (OR) A train travelled a distance of 30 kilometers in 7 minutes and 30 seconds. What is its speed? Convert the speed to km/h. **[3]**

(iii) What kind of motion does a butterfly have? Briefly describe this kind. **[1+2]**

(x) (OR) Can direction of velocity and acceleration be in opposite direction? Explain briefly. **[1+2]**

(xi) (OR) Is it possible to accelerate an object without speeding up or slowing it down? Justify. **[3]**

2025 (D)

Footer code 1SA-I 25004 (D) · Standard · Paper 2 of 1st Exam

Section A — MCQ

Q2. A car changes its velocity from 20 ms^{-1} to 56 ms^{-1} in 2 s. Its acceleration is:

A) 28 ms^{-2} B) 36 ms^{-2} C) 10 ms^{-2} D) 18 ms^{-2}

Q3. The given graph shows (speed-time graph: a horizontal line):

A) Zero acceleration B) Uniform acceleration C) Variable acceleration D) Negative acceleration

Section B — Short Questions (Q2)

(ii) Differentiate between uniform acceleration and non-uniform acceleration. **[3]**

(iii) Compare Rotatory motion and Vibratory motion. **[3]**

(v) (OR) Velocity v of a car increases uniformly from 15 m/s to 25 m/s in 5 s. Find v_{avg} and acceleration. **[3]**

(vii) (OR) Can direction of velocity and acceleration be in opposite direction? Explain briefly. **[3]**

2025 (II)

Footer code 1SA-II 25004 · Standard · stamped 10/02/2026 · 2nd Exam

Section A — MCQ

Q3. In 5 s a car accelerates so that its velocity increases by 20 ms^{-1}. The acceleration is:

A) 0.25 ms^{-2} B) 4 ms^{-2} C) 25 ms^{-2} D) 100 ms^{-2}

Q5. The rate of change of velocity is called:

A) speed B) acceleration C) force D) motion

Section B — Short Questions (Q2)

(i) (OR) Justify that displacement is a vector quantity. Also draw diagram. **[2+1]**

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(x) Draw distance-time graphs for a body: a. Decelerating b. At rest c. Moving with constant speed. **[3]**

Section C — Long Questions

Q4. A block of mass 3 kg falls from the top of a building. How much time will the block take to reach the ground if it strikes the ground with a speed of 80 m/s? (Ignore air resistance). Also calculate the height from which the block was dropped. **[5]**

2026 (B)

Footer code 1SA-I 26004 (B) · Inclusive 2024 · 1st Annual

Section A — MCQ

Q2. A cyclist moves 2 km in 4 minutes. What is the speed in m/s?

A) 4 m/s B) 8.3 m/s C) 12 m/s D) 16.3 m/s

Section B — Short Questions (Q2)

(ii) (OR) Sketch distance-time graph of an object when it is: a. At rest, b. Moving with constant speed, and c. Accelerating. **[1+1+1]**

(iv) (OR) From given speed-time graph, calculate: a. Total distance covered, b. Acceleration in first 5 seconds. *(graph is given in the paper)* **[1.5+1.5]**

(vi) (OR) A cyclist applies brakes and slows down from 12 ms^{-1} to 4 ms^{-1} in 3 seconds. Calculate the acceleration. **[3]**

2026 (D)

Footer code 1SA-I 26004 (D) · Inclusive 2024 · 1st Annual

Section A — MCQ

Q3. The movement of a pendulum is an example of:

A) Linear motion B) Rotatory motion C) Vibratory motion D) Circular motion

Section B — Short Questions (Q2)

(i) (OR) A car travels different distances in different time intervals as shown (0 m, 6 m, 14 m, 24 m with t_1 = 2 s, t_2 = 4 s, t_3 = 2 s). Determine: a. Total distance b. Total time c. Average speed. *(figure is given in the paper)* **[1×3]**

(iv) (OR) What is meant by velocity? Justify that speed is a scalar quantity while velocity is a vector quantity. **[1+2]**

Section C — Long Questions

Q3 A car starts from rest, moves with constant speed, then accelerates, and finally comes to rest. a. Draw distance-time graph showing all four stages. b. How the gradient of each section represents the car's speed? **[4+2]**

Q3 (OR) (part a only) A player kicks a football of mass 450 g vertically upward at a speed of 22 ms^{-1}. Neglecting air resistance, how high would it reach? **[3]**

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2026 (M)

Footer code 1SA-I 26004 (M) · Inclusive 2024 · 1st Annual

Section A — MCQ

Q4. A car travels 150 m in 10 seconds. What is its speed?

A) 5 m/s B) 10 m/s C) 15 m/s D) 20 m/s

Q6. Which statement best explains why displacement is a vector quantity?

A) It has only magnitude B) It depends on path length C) It has magnitude and direction D) It is measured in meters

Q11. Ball dropped freely from a tower reaches ground in 4 s, the speed of impact of ball is:

A) 0 m/s B) 2.45 m/s C) 19.6 m/s D) 39.2 m/s

Q12. A mosquito flying in different directions shows:

A) Linear motion B) Random motion C) Circular motion D) Vibratory motion

Section B — Short Questions (Q2)

(vi) (OR) How different slopes represent three different types of motion in a speed-time graph? Make sketches. **[1×3]**

(vii) (OR) A ball is thrown straight upward with an initial speed of 19.6 m/s. Using g = 9.8 ms^{-2}: a. After how much time does it reach the highest point? b. What is its velocity at the highest point? **[2+1]**

Section C — Long Questions

Q5 A speed-time graph of a car shows the speed increasing from 0 to 15 m/s in 5 seconds, then staying constant for the next 5 seconds, and finally decreasing back to 0 m/s in 3 seconds. a. Identify the type of motion in each interval (0–5 s, 5–10 s, 10–13 s). b. Calculate the acceleration during the first 5 seconds. c. Calculate the deceleration during the last 3 seconds. **[2+2+2]**

Model Paper 2026 (48 marks)

FBISE Model Paper · Inclusive Scheme of Studies

Section A — MCQ

Q1. When a body moves in a circular path, its velocity is:

A) Constant B) Variable C) Zero D) Increasing

Q3. A train is traveling at 20 m/s and comes to a stop in 40 seconds. What is the magnitude of deceleration of the train?

A) 0.5 m/s^2 B) 2 m/s^2 C) 0.05 m/s^2 D) 0.2 m/s^2

Q4. If two objects, one heavy and one light, are dropped from the same height, neglecting air resistance, which object will hit the ground first?

A) The heavy object B) The light object C) Both objects will hit the ground at the same time D) It depends on the shape of the objects

Section B — Short Questions (Q2)

(ii) Draw the speed time graph for uniform acceleration. Use this graph to show that gradient of speed time graph gives acceleration. **[3]**

(viii) (OR) What is average speed of a car if it completes a circle of radius 200 m in 5 minutes? **[3]**

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Section C — Long Questions

Q3 What are different types of motion? Give two examples of each. **[6]**

Model Paper 2026 (50% MCQs)

FBISE Model Paper · 60 MCQs (0.5 mark each) + 30 marks descriptive

MCQs (0.5 mark each)

Q2. The rate of change of displacement is called:

A) Speed B) Velocity C) Acceleration D) Distance

Q8. Which statement best describes translational motion of a body?

A) all its parts move in one direction B) rotates about a fixed axis C) moves about a fixed point D) Changes its shape

Q9. The value of 'g' at the surface of the moon is approximately:

A) 9.8 m/s^2 B) 1.6 m/s^2 C) Infinite D) 0 m/s^2

Q20. The slope of a distance-time graph gives:

A) Acceleration B) Force C) Speed D) Work

Q31. In which of the following situations are the distance traveled and the magnitude of the displacement equal?

A) A child moving on a swing B) An object is moving along a circular path. C) A car moving on a curved road D) Linear motion in one direction.

Q33. The distance-time graph for a cyclist moving along a straight road is shown (parts A, B, C). Which motion is displayed by the cyclist in portion A of the graph? *(graph is given in the paper)*

A) At rest B) Uniform speed C) Non-uniform speed D) Variable speed

Stimulus / Scenario Based MCQs

Scenario for MCQs # 41 to 44: *Atif is playing with his remote-controlled car on a flat carpet. When he gently pushes the throttle forward, the car starts moving and gradually speeds up on straight line. Curious, he increases the force applied by the motor to observe how the motion changes.*

Q41. What type of motion does the toy car exhibit?

A) constant velocity B) constant acceleration C) decreasing velocity D) decreasing momentum

Q42. How would the toy car's speed-time graph look like?

A) Straight line with negative slope B) Straight line with positive slope C) curved graph D) Horizontal line

Section B — Short Questions

Q2 A car starts from rest and reaches a velocity of 20 m/s in 5 seconds. Calculate its average velocity and total distance covered by it. **[3]**

Q4 Can a body have zero velocity but non-zero acceleration? Explain with a physical example. **[1+2]**

Section C — Long Questions

Q8 Define acceleration. What does it tell us about the motion of an object? If the slope of a speed-time graph for a moving object is steeper, what can you explain about the motion of the object? **[2+2+2]**

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