

MARKING SCHEME AND MODEL ANSWERS

Chapter 2: Motion in a Straight Line

Maximum Marks: 40 | Suggested time: 60 minutes

Use after attempting the paper. Accept equivalent correct methods.

Suggested mark allocation:

1 mark: Correct fact, formula, unit or direction.

2 marks: Principle/formula (1); explanation, working or result (1).

3 marks: Relation (1); working/reasoning (1); final result and unit (1).

4 marks: Principle (1); setup/equation (1); working (1); result/interpretation (1).

Mark splits are a guide; award partial credit for valid steps.

Q1 - 1 mark

$v = dx/dt$.

Q2 - 1 mark

Velocity.

Q3 - 1 mark

Zero.

Q4 - 1 mark

No.

Q5 - 1 mark

$m\ s^{-2}$.

Q6 - 1 mark

Zero.

Q7 - 1 mark

$v = u + at$.

Q8 - 1 mark

Signed displacement.

Q9 - 2 marks

5 m/s.

Q10 - 2 marks

$2\ m/s^2$.

Q11 - 2 marks

5 s.

Q12 - 2 marks

25 m/s.

Q13 - 2 marks

11 m; 5 m east.

Q14 - 2 marks

12 m/s.

Q15 - 3 marks

$v = 16\ m/s$; $s = 55\ m$.

Q16 - 3 marks

$a = -4\ m/s^2$; $s = 50\ m$.

Q17 - 3 marks

$a = 2\ m/s^2$; displacement = 48 m.

Q18 - 3 marks

$v = 24\ m/s$; $s = 144\ m$.

Q19 - 4 marks

5 s; 62.5 m; acceleration opposes motion.

Q20 - 4 marks

$v = 3 - 2t$; $a = -2\ m/s^2$; $t = 1.5\ s$.