F.1 Speed and Acceleration

Practice Worksheet — name: _____ date: _____

FORMULAS FOR THIS TOPIC

AVERAGE SPEED $v = \frac{d}{t}$ ACCELERATION $a = \frac{v-u}{t}$ SUVAT EQUATION $v = u + at$

SUVAT EQUATION $s = ut + \frac{1}{2}at^2$ SUVAT EQUATION $s = \frac{(u+v)}{2}t$

SECTION A — MULTIPLE CHOICE

A1. A cyclist travels 120 m in 24 s. What is the average speed?

- (A) $2\,m/s$
- (B) $4\,m/s$
- (C) $5\,m/s$
- (D) $6\,m/s$

A2. A car accelerates uniformly from 10 m/s to 22 m/s in 6 s. What is its acceleration?

- (A) $1\,m/s^2$
- (B) $2\,m/s^2$
- (C) $3\,m/s^2$
- (D) $4\,m/s^2$

SECTION B — SHORT ANSWER

B1. Explain the difference between speed and velocity.

B2. What does the gradient of a distance-time graph represent?

B3. What does the gradient of a velocity-time graph represent?

B4. What does the area under a velocity-time graph represent?

ANSWER KEY

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Section A

A1: $5\,m/s$

A2: $2\,m/s^2$

Section B

B1: Speed is a scalar quantity and only has magnitude, whereas velocity is a vector quantity with both magnitude and direction.

B2: The gradient of a distance-time graph represents the speed of the object.

B3: The gradient of a velocity-time graph represents the acceleration of the object.

B4: The area under a velocity-time graph represents the displacement travelled.