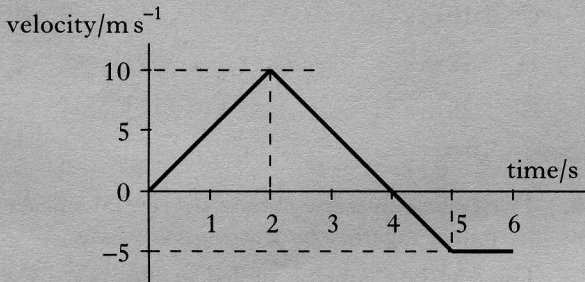


SECTION A

Answer questions 1–30 on the answer sheet.

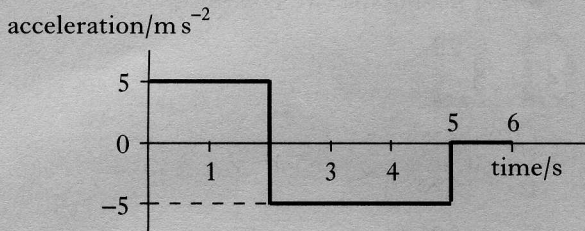
1. Which one of the following is a vector quantity?
- A Distance
  - B Time
  - C Speed
  - D Energy
  - E Weight

2. The velocity-time graph of the motion of an object starting from rest is shown below.



Which of the following statements about the motion of the object is/are true?

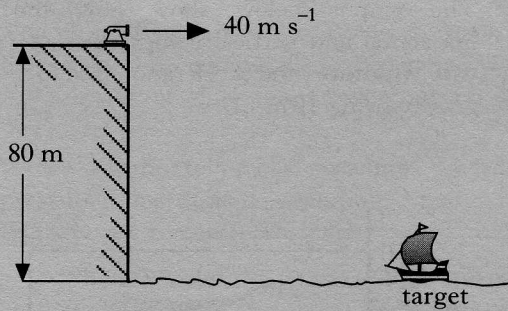
- I There is a change of direction of the object at 4 s.
- II The acceleration-time graph is of the form shown below.



- III The displacement of the object from the starting point is greatest at 6 s.

- A I only
- B II only
- C I and II only
- D I and III only
- E II and III only

3. A cannonball is fired horizontally at  $40 \text{ m s}^{-1}$  from the top of a vertical cliff and it hits its target. The height of the cliff above the level of the sea is 80 m.



How far is the target from the foot of the cliff, if air resistance is negligible and the acceleration due to gravity is  $10 \text{ m s}^{-2}$ ?

- A 320 m
- B 160 m
- C 80 m
- D 45 m
- E 40 m

[Turn over

