*Multiple Choice. Select ONE best answer for each question. (1 mark each)*

1) Acceleration is a vector

|  |  |
| --- | --- |
| A) True | B) False |

2) The SI units for acceleration are

|  |  |
| --- | --- |
| A) s/m | B) s2/m |
| C) m/s2 | D) m/s |
| E) s-1 |  |

3) Zero acceleration for an object means

|  |  |
| --- | --- |
| A) | The object isn't moving |
| B) | The object has constant velocity |
| C) | The object is in uniform motion |
| D) | B and C |
| E) | All of the above |

4) An acceleration of +1m/s2 means

|  |  |
| --- | --- |
| A) | An object is speeding up |
| B) | An object is gaining 1m/s per second in the positive direction |
| C) | An object is gaining 1m/s per second in the negative direction |
| D) | An object is losing 1m/s per second in the positive direction |

5) The slope on a **velocity-time graph** measures

|  |  |
| --- | --- |
| A) | Acceleration |
| B) | Average velocity  |
| C) | Displacement  |
| D) | The steepness of a hill an object needs to climb |

6) A man's initial velocity was 0.5ms/ [N] and sped up to 2.0m/s [N] in 0.25s. What was his acceleration? (3 marks)

7) A ball was dropped from rest and reached a final velocity of 2.1m/s before hitting the ground. If the acceleration due to gravity is -9.8m/s2, how long did it take the ball to hit the ground? (3 marks)

8) An ant crawled at 0.2m/s [N] then accelerated at 0.1m/s2 [S] for 10.0s. What was the ant's final velocity? (3 marks)

*Below is a velocity-time graph depicting the motion of a runner getting ready at the starting line and starting the race.*

Velocity vs. Time



9) Match the description of the runner with the labeled segment on the graph. (1 mark each)

|  |  |  |
| --- | --- | --- |
|  | The runner is speeding up | A |
|  | The runner is standing still | B |
|  | The runner is running at a constant velocity | C |

10) Calculate the runner's acceleration from t = 3s to t = 8s. (3 marks)

11) What was the runner's total displacement from t = 8s to t = 10s? (3 marks)