## 3. Motion along a straight line: A. Z. ALZAHRANI

1.

I travelled from Jeddah to my village (300 km south Jeddah) in 2.5 hr, my average speed is

100 km/hr 120 km/hr 140 km/hr 164 km/hr

2.

The position of a ball thrown upward is given by the equation  $y = 1.00 + 25.0t - 5.00t^{2}$  (SI units), the average velocity for the first 2.00s is 15 m/s 20 m/s 25 m/s 30 m/s

### 3.

The position of a ball thrown upward is given by the equation  $y = 1.00 + 25.0t - 5.00t^2$  (SI units), the velocity at t= 2.00s is 15 m/s 20 m/s 25 m/s

4.

An car can go from zero to 120 km/hr in 8.00s. Find the average acceleration of the car. 15 km/hr  $4.2 \text{ km/hr}^2$   $4.2 \text{ m/s}^2$   $4.2 \text{ m/s}^2$ 

5. A ball is thrown vertically upward by 20 m/s, its acceleration after 1.2 sec is  $8.2 \text{ m/s}^2$ 9.8 m/s<sup>2</sup> 2.04 m/s<sup>2</sup> 20.4 m/s<sup>2</sup>

## 6.

A stone is thrown vertically upwards by initial speed of 20 m/s, the maximum height the stone can reach is

9.8 m

#### 20 m 20.4 m

19.6 m

7.

A ball is thrown vertically upward with an initial speed of 19.6 m/s, the total time of flight is

2 s

4 s

6 s

8 s

8.

A ball falls from a height of 44.1 m above the ground, the time taken to hit the ground is 1 s

2 s

3 s

4 s

9.

A red ball is thrown vertically upwards with 20 m/s. One second later, a blue ball thrown upwards by 30 m/s. At what height above the ground will they meet? Assume  $g=10 \text{ m/s}^2$  19.68 m

25.6 m

31.4 m

37.9 m

10.
A car moves with constant speed of 40 km/hr, its speed after 0.5 hr is 20 km/hr
30 km/hr
40 km/hr
No enough data, acceleration is needed

11.

A truck moves with a constant speed of 40 km/hr, suddenly driver applies break to stop the truck at a 15-m away pedestrian. What is the time for the stopping? 2.0 s 0.74 s

2.7 s

5 s

12.

A truck moves with a constant speed of 40 km/hr, suddenly driver applies break to stop the truck at a 15-m away pedestrian. What is the magnitude of its deceleration?  $2.11 \text{ m/s}^2$ 

 $\frac{4.12 \text{ m/s}^2}{6.6 \text{ m/s}^2}$ 

13.

Ali was driving his hilux on Makkah-Jeddah high way when he saw a police car. If he brake from 75 km/h to 45 km/h over a distance of 88m. What is the acceleration, assumed to be constant?

 $1.6 \text{ m/s}^2$ 

 $-1.6 \text{ m/s}^2$ 

Both are correct None of them is correct

14.

Khalid is at a 46-m high building and his physics professor, who is 1.8 m tall, is walking alongside the building at a constant speed of 1.2 m/s. If khalid wish to drop an egg on his professor's head, where should the professor be when he freely releases the egg? 3 m

3.6 m

4.2 m

4.8 m

15.

Fahd, freely and vertically, drops a melon from the roof of a building. If he hears the sound of the melon going "splat" 2.5 seconds later, how high is the building (sound speed is 330 m/s).

# 30.5 m

28.5

26.5

16.

A stone is thrown vertically upwards with initial speed v. Two seconds later, the position of the stone is 10 m above the ground. What is its initial speed, v?

14.4 m/s

9.9 m/s 5 m/s

2.5 m/s

17.

A stone is freely droped downwards from a height h.Two seconds later, the position of the stone is 10 m above the ground. What is the height, h?

9.8 m

19.8 m

29.8 m

39.8 m

18.

A car starts its motion from rest and accelerates uniformly with 2.25  $\text{m/s}^2$  for 20 sec. After that, the car moves with constant speed for 40 sec. What is the total distance covered by the car in the one-minute trip?

2.50 km 250 m 2.25 km

225 m

19.

The slope of the displacement-time curve represents velocity acceleration speed distance

20. The slope of the velocity-time curve represents velocity acceleration speed distance