## 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
$100 \mathrm{~km} / \mathrm{hr}$
$120 \mathrm{~km} / \mathrm{hr}$
$140 \mathrm{~km} / \mathrm{hr}$
$164 \mathrm{~km} / \mathrm{hr}$
2.

The position of a ball thrown upward is given by the equation $\mathrm{y}=1.00+25.0 \mathrm{t}-5.00 \mathrm{t}^{2}$
(SI units), the average velocity for the first 2.00 s is
$15 \mathrm{~m} / \mathrm{s}$
$20 \mathrm{~m} / \mathrm{s}$
$25 \mathrm{~m} / \mathrm{s}$
$30 \mathrm{~m} / \mathrm{s}$
3.

The position of a ball thrown upward is given by the equation $y=1.00+25.0 \mathrm{t}-5.00 \mathrm{t}^{2}$ (SI units), the velocity at $\mathrm{t}=2.00 \mathrm{~s}$ is
$15 \mathrm{~m} / \mathrm{s}$
$20 \mathrm{~m} / \mathrm{s}$
$25 \mathrm{~m} / \mathrm{s}$
$5 \mathrm{~m} / \mathrm{s}$
4.

An car can go from zero to $120 \mathrm{~km} / \mathrm{hr}$ in 8.00 s . Find the average acceleration of the car.
$15 \mathrm{~km} / \mathrm{hr}$
$4.2 \mathrm{~km} / \mathrm{hr}^{2}$
$4.2 \mathrm{~m} / \mathrm{s}^{2}$
$4.2 \mathrm{~m} / \mathrm{s}$
5.

A ball is thrown vertically upward by $20 \mathrm{~m} / \mathrm{s}$, its acceleration after 1.2 sec is
$8.2 \mathrm{~m} / \mathrm{s}^{2}$
$9.8 \mathrm{~m} / \mathrm{s}^{2}$
$2.04 \mathrm{~m} / \mathrm{s}^{2}$
$20.4 \mathrm{~m} / \mathrm{s}^{2}$
6.

A stone is thrown vertically upwards by initial speed of $20 \mathrm{~m} / \mathrm{s}$, 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 $19.6 \mathrm{~m} / \mathrm{s}$, 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 $20 \mathrm{~m} / \mathrm{s}$. One second later, a blue ball thrown upwards by $30 \mathrm{~m} / \mathrm{s}$. At what height above the ground will they meet? Assume $g=10 \mathrm{~m} / \mathrm{s}^{2}$ 19.68 m
25.6 m
31.4 m
37.9 m
10.

A car moves with constant speed of $40 \mathrm{~km} / \mathrm{hr}$, its speed after 0.5 hr is
$20 \mathrm{~km} / \mathrm{hr}$
$30 \mathrm{~km} / \mathrm{hr}$
$40 \mathrm{~km} / \mathrm{hr}$
No enough data, acceleration is needed
11.

A truck moves with a constant speed of $40 \mathrm{~km} / \mathrm{hr}$, suddenly driver applies break to stop the truck at a $15-\mathrm{m}$ 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 $40 \mathrm{~km} / \mathrm{hr}$, suddenly driver applies break to stop the truck at a $15-\mathrm{m}$ away pedestrian. What is the magnitude of its deceleration?
$2.11 \mathrm{~m} / \mathrm{s}^{2}$
$4.12 \mathrm{~m} / \mathrm{s}^{2}$
$6.6 \mathrm{~m} / \mathrm{s}^{2}$
0
13.

Ali was driving his hilux on Makkah-Jeddah high way when he saw a police car. If he brake from $75 \mathrm{~km} / \mathrm{h}$ to $45 \mathrm{~km} / \mathrm{h}$ over a distance of 88 m . What is the acceleration, assumed to be constant?
$1.6 \mathrm{~m} / \mathrm{s}^{2}$
$-1.6 \mathrm{~m} / \mathrm{s}^{2}$
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 $1.2 \mathrm{~m} / \mathrm{s}$. 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 $330 \mathrm{~m} / \mathrm{s}$ ).
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 ?
$14.4 \mathrm{~m} / \mathrm{s}$
$9.9 \mathrm{~m} / \mathrm{s}$
$5 \mathrm{~m} / \mathrm{s}$
$2.5 \mathrm{~m} / \mathrm{s}$
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 $2.25 \mathrm{~m} / \mathrm{s}^{2}$ 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

