MCQ

1. (information missing)
2. C
3. D
4. D
5. B
6. C
7. D
8. C
9. C
10. A
11. A
12. C
13. B
14. C
15. A

Structured Questions

1.

(a) A [1]

(b) 96 cm^3 [2]

2.

(a) 55 s [1]

(b) 55/5

11 s [2]

(c) 300 brackets---3300 s

Therefore he has completed the target in less than 3600 s (1h) [4]

3.

(a)i 20 cm^3 [1]

ii) 25 cm^3 [1]

(b) 25-20 = 5 [1]

(c) 200 drops-------5 cm^3

1 drop----------5/200

= 0.025 [2]

4.

(a) at 20 s, parachute opens

At 55 s, parachutist reaches ground [2]

(b) speed increases and then becomes constant [2]

(c) weight equals air resistance

Forces are balances

Resultant force = 0

Speed = constant

Acceleration = 0 [5]

(d) distance = area under graph

= (55-25) * 5

= 150 m

5. resultant, scale, and direction stated [3]

6.

(a) speed increases at first and then stays constant [2]

(b) 7 m [2]

(c) (108-20)/(15-4)

= 88/11

= 8 m/s [2]

7.

(a) speed increases at first and then becomes constant [2]

(b) d/t = 12/1.5 = 8 m/s [2]

8.

(a)

i) speed increases and then becomes constant [2]

ii) acceleration is constant at first and then decreases to zero [2]

(b) 25 [1]

(25 * 3600)/1000 [1]

(c) 20/30 = 0.67 m/s^2 [2]