
Answers

Chapter 3

4. (a) MgCl_2
(b) CaO
(c) $\text{Cu}(\text{NO}_3)_2$
(d) AlCl_3
(e) CaCO_3
5. (a) Calcium, oxygen
(b) Hydrogen, bromine
(c) Sodium, hydrogen, carbon and oxygen
(d) Potassium, sulphur and oxygen
6. (a) 26 g
(b) 256 g
(c) 124 g
(d) 36.5 g
(e) 63 g
7. (a) 14 g
(b) 108 g
(c) 1260 g
8. (a) 0.375 mole
(b) 1.11 mole
(c) 0.5 mole
9. (a) 3.2 g
(b) 9.0 g
10. 3.76×10^{22} molecules
11. 6.022×10^{20} ions

Chapter 4

10. 80.006
11. $^{16}_8\text{X} \times = 90\%$, $^{18}_8\text{X} \times = 10\%$
12. Valency = 1, Name of the element is lithium,
13. Mass number of X = 12, Y = 14, Relationship is Isotope.
14. (a) F (b) F (c) T (d) F
15. (a) ✓ (b) × (c) × (d) ×
16. (a) × (b) × (c) ✓ (d) ×

17. (a) × (b) ✓ (c) × (d) ×
 18. (a) × (b) × (c) × (d) ✓
 19.

Atomic Number	Mass Number	Number of Neutrons	Number of Protons	Number of Electrons	Name of the Atomic Species
9	19	10	9	9	Fluorine
16	32	16	16	16	Sulphur
12	24	12	12	12	Magnesium
01	2	01	1	01	Deuterium
01	1	0	1	0	Protium

Chapter 8

- (a) distance = 2200 m; displacement = 200 m.
- (a) average speed = average velocity = 2.00 m s^{-1}
 (b) average speed = 1.90 m s^{-1} ; average velocity = 0.952 m s^{-1}
- average speed = 24 km h^{-1}
- distance travelled = 96 m
- velocity = 20 m s^{-1} ; time = 2 s
- speed = 3.07 km s^{-1}

Chapter 9

- c
- 14000 N
- 4 N
- (a) 35000 N
 (b) 1.944 m s^{-2}
 (c) 15556 N
- 2550 N in a direction opposite to the motion of the vehicle
- d
- 200 N
- 0 m s^{-1}
- 3 kg m s^{-1}
- 2.25 m; 50 N
- 10 kg m s^{-1} ; 10 kg m s^{-1} ; $5/3 \text{ m s}^{-1}$
- 500 kg m s^{-1} ; 800 kg m s^{-1} ; 50 N
- 40 kg m s^{-1}
- A2. 240 N
- A3. 2500 N
- A4. 5 m s^{-2} ; 2400 kg m s^{-1} ; 6000 N

Chapter 10

3. 9.8 N
12. Weight on earth is 98 N and on moon is 16.3 N.
13. Maximum height is 122.5 m and total time is $5\text{ s} + 5\text{ s} = 10\text{ s}$.
14. 19.6 m/s
15. Maximum height = 80 m, Net displacement = 0, Total distance covered = 160 m.
16. Gravitational force = $3.56 \times 10^{22}\text{ N}$.
17. 4 s, 80 m from the top.
18. Initial velocity = 29.4 m s^{-1} , height = 44.1 m. After 4 s the ball will be at a distance of 4.9 m from the top or 39.2 m from the bottom.
21. The substance will sink.
22. The packet will sink. The mass of water displaced is 350 g.

Chapter 11

2. Zero
4. 210 J
5. Zero
9. $9 \times 10^8\text{ J}$
10. 2000 J, 1000 J
11. Zero
14. 15 kWh (Unit)
17. 208333.3 J
18. (i) Zero
(ii) Positive
(iii) Negative
20. 20 kWh

Chapter 12

7. 17.2 m, 0.0172 m
8. 18.55
9. 6000
13. 11.47 s
14. 22,600 Hz
20. 1450 ms^{-1}