Answers

Chapter 3

4. (a) $MgCl_2$
   (b) CaO
   (c) $Cu(NO_3)_2$
   (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. $^{16}_{8}$ =90% , $^{18}_{8}$ 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

1. (a) distance = 2200 m; displacement = 200 m.
2. (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}
3. average speed = 24 km h^{-1}
4. distance travelled = 96 m
7. velocity = 20 m s^{-1}; time = 2 s
10. speed = 3.07 km s^{-1}

Chapter 9

4. c
5. 14000 N
6. – 4 N
7. (a) 35000 N
   (b) 3.5 m s^{-2}
   (c) 28000 N
8. 2550 N in a direction opposite to the motion of the vehicle
9. d
10. 200 N
11. 0 m s^{-1}
13. 3 kg m s^{-1}
14. 2.25 m; 50 N
15. 10 kg m s^{-1}; 10 kg m s^{-1}; 5/3 m s^{-1}
16. 500 kg m s^{-1}; 800 kg m s^{-1}; 50 N
18. 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 s + 5 s = 10 s.
14. 19.6 m/s
15. Maximum height = 80 m, Net displacement = 0, Total distance covered = 160 m.
16. Gravitational force = 53.36×10^{32} 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. 9×10^8 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}