

ACE OF PACE (SOLUTION)
(SOLUTION)

1. (B)

$$\because \text{Energy} = \frac{V^2}{R} \text{ or } E \propto \frac{1}{R}$$

or Energy will be maximum which have less net resistance.

2. (A) Concave mirror converges sun light.

3. (D) Sound wave is a mechanical wave and it can't travel in vacuum

4. (C) Velocity and wave length is the property of medium whereas frequency is a property of source.

5. (A)

$$\because V = \varepsilon - ir$$

Ideal battery is which having zero loss of energy therefore zero internal resistance.

6. (C) theory

7. (D) theory

8. (B)

$$\mu_1 \sin i = \mu_2 \sin r$$

$$\mu_1 \sin 30 = 1 \sin 90$$

$$\mu_1 \times \frac{1}{2} = 1$$

$$\mu_1 = 2$$

9. (B) The particle is placed at the distance 2F.

10. (D) Theoretical

11. (B)

$$v = f\lambda$$

$$4 \text{ m/s} = f \left(\frac{20}{100} \text{ m} \right)$$

$$f = 20\text{Hz}$$

12. (A)

$$D = 2\pi r \times n$$

$$(9.5 \text{ km}) \left(\frac{1000 \text{ m}}{1 \text{ km}} \right) = 2 \left(\frac{22}{7} \right) (r) (2000)$$

$$2r = \frac{9.5 \times 7}{22 \times 2}$$

$$D = 1.5 \text{ m}$$

13. (D) Theoretical

$$14. (D) \text{ KE} = \frac{P^2}{2m}$$

15. (B) Latent heat of fusion of ice is 80cal.

16. (B) Fission reaction take place.
 17. (A) On heating all dimension increases symmetrically.
 18. (B)

$$\frac{1}{2}mv^2 = KE$$

$$KE \propto v^2$$

19. (B)

$$\frac{2x}{1.5 \text{ s}} = 340 \text{ m/s}$$

$$x = \frac{(340 \text{ m/s})(1.5 \text{ s})}{2} = 255 \text{ m}$$

20. (B) $\Delta P = m(V - U) = 18 \times \frac{5}{18} \times 2000 = 10^4 \text{ kgm/s}$

21. (C)

$$h = \frac{1}{2}gt^2$$

$$t = \sqrt{\frac{2h}{g}}$$

Time period is independent of mass.

22. (B)

$$W = F \cdot S$$

$$= 40 \times 10 \times \cos 0$$

$$= 400 \text{ J}$$

23. (D) $\rho \rightarrow$ It is a property of material.

24. (C)

$$\frac{m_1}{m_2} = \frac{60}{30} = 2$$

25. (C) Both PE and KE

26. (D) Bleaching powder is given as CaOCl_2 (Calcium chloro hyperchlorite)

27. (D) CuSO_4 is acidic salt because it is made from $\text{Cu}(\text{OH})_2$ (weak base) and H_2SO_4 (strong acid)

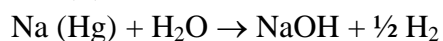
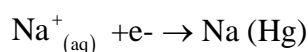
28. (B) Silicon (Si) is a metalloid, because it exhibits same properties of both metals and non-metals

29. (B)

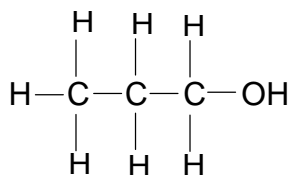
M-shell $-2 \times (3)^2 = 18$ electrons, but the outermost shell can have only 8 electrons, so the third period also has only 8 elements

30. (A) Sodium hydrogen carbonate (NaHCO_3) is used in soda acid fire extinguisher

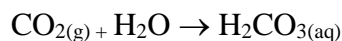
31. (C) Cathode :



32. (A)



There are seven C-H bonds in propanol.

33. (B) $\text{CaCO}_3 \xrightarrow{\Delta} \text{CaO}_{(s)} + \text{CO}_{2(g)}$ 

H_2CO_3 does not change the (Carbonic acid)

Colour of phenolphthalein as Phenolphthalein is colourless in acidic solution

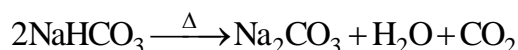
34. (B) Oxygen (Z=8) 2, 6

Sulphur (Z=16) 2, 8, 6

Both have '6' valence electrons

35. (B) Pb (Lead) is used in storage battery

36. (A) The alloy of any metal with Hg is amalgam.

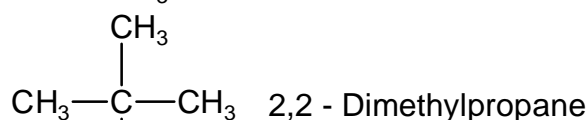
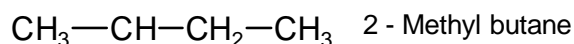
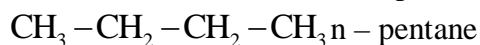
37. (A) The following reaction takes place when NaHCO_3 is heated during cooking.

38. (C)

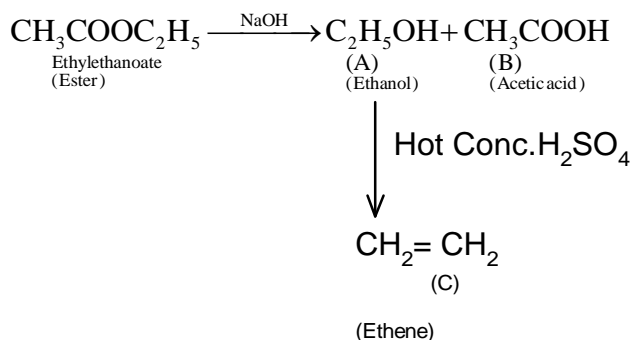
NaCl is electrovalent (or) ionic compound exists as Na^+ and Cl^- ions.

39. (B) $2\text{Pb}(\text{NO}_3)_{(s)} \xrightarrow{\Delta} 2\text{PbO}_{(s)} + 4\text{NO}_{2(g)} + \text{O}_{2(g)}$ 40. (C) During corrosion of Fe, it form brown colour Fe_2O_3 .

41. (A) There are 3 structural isomers possible for pentane. They are



42. (B)



43. (A) Here chlorine replace the hydrogen atom of CH₄. So it is a substitution reaction.
44. (D) Atomic radius decreases from left to right across a period
Li > Be > B > C > N > O
45. (C) 'C' and 'Si' both are in group IV in the Mendeleev's periodic table. Hence both forms similar hydride and oxide.
46. (B) Detergents are generally ammonium or Sulphonate salts of long chain carboxylic acids.
47. (D) Al₂O₃ and ZnO are amphoteric
MgO is basic
CO₂ is acidic
48. (D) Gallium (Ga) and Caesium (Cs) has very low melting point. These two metal melts if we keep on palm.
49. (C) Diamond, an allotrope of carbon is hardest natural substance known.
50. (B) $\text{CaSO}_4 \cdot 2\text{H}_2\text{O} \xrightarrow[373\text{K}]{\Delta} \text{CaSO}_4 \cdot \frac{1}{2}\text{H}_2\text{O} + 1\frac{1}{2}\text{H}_2\text{O}$
51. (A)
52. (B)
53. (A)
54. (B)
55. (D)
56. (C)
57. (C)
58. (C)
59. (D)
60. (B)
61. (B)
62. (C)
63. (A)
64. (C)
65. (C)
66. (D)
67. (C)
68. (B)
69. (B)
70. (B)
71. (B)

72. (B)
73. (B)
74. (A)
75. (D)
76. (D) Leucopenia is the term used when total count of WBC is less.
77. (B) Salivary amylase is a carbohydrate digesting enzyme which digests cooked starch into maltose.
78. (C) Liver and spleen are the graveyard of all the blood cells.
79. (D) Striated muscles are skeletal muscles. They form the skeletal tissues of the body and voluntary in function.
80. (C) Intercalated discs present at the junction of two cells are characteristics of cardiac muscle fibres.
81. (C) Primary sexual organ forms gametes. In male, testis forms sperms.
82. (B) The main structural frame work of the body is skeletal tissue i.e. bone.
83. (B) Trypsin is present in pancreatic tissue. Functional at 7.5-8.
84. (A) Sucrose = glucose + fructose
85. (A) Aerobic respiration involves complete breakdown of substrate in presence of oxygen to form CO₂ and water as byproduct.
86. (A) One heart beat includes one contraction and one relaxation i.e. one systole and one diastole.
87. (D) During Kwashiorkor, some fat is still left under skin, and hence skin is not dry. Extreme thinning of limbs is associated with Marasmus.
88. (A) Hypothalamus present in forebrain maintains body temperature.
89. (C) Pulmonary veins carry oxygenated blood from lungs to left atrium.
90. (A) Nucleated blood cells are WBC.
91. (D) Diastolic blood pressure is pressure of blood exerted on the wall of artery during relaxation of heart. It is 80 mm of Hg.
92. (C) Interstitial cells or Leydig cells are present in between seminiferous tubules which secrete testosterone.
93. (B) Urea is the chief nitrogenous waste of humans.
94. (D) Rhodopsin is sensitive to dim light and is not for colour vision.
95. (A) Respiration is the process which releases energy by breakdown of product.
96. (B) Secondary sexual characters of female is mediated by sex hormone i.e. estrogen.
97. (D) Ovary does all these functions
98. (A) Main muscle of inspiration is diaphragm. Intercostal muscle also helps but plays a minor role.
99. (A) Respiratory control centre is present in medulla region of brain.
100. (A) Thyroid hormone T₃ and T₄ control all metabolic reactions of body.