

## ACE OF PACE (SOLUTION)

1. (2) Theoretical question

2. (4)  $v^2 = u^2 + 2as$ 

$$v^2 \propto s$$

$$(50)^2 \propto 6 \quad (\text{i})$$

$$(100)^2 \propto s \quad (\text{ii})$$

Divide equation (i) and (ii)

$$\frac{50 \times 50}{100 \times 100} = \frac{6}{s}$$

$$s = 6 \times 4 = 24\text{m}$$

3. (1) ohm

4. (1) Scalar

5. (4) Theoretical question

6. (3) Theoretical question

7. (3)

8. (3)  $P = \frac{v^2}{R}$ 

$$100 = \frac{(200)^2}{R}$$

$$R = \frac{200 \times 200}{100} = 400\Omega$$

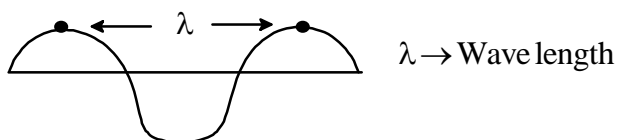
9. (1)  $v = v + at$ 

$$\frac{v - u}{t} = a$$

$$\frac{40 - 20}{2} = \frac{20}{2} = 10\text{sec}$$

10. (4)  $e\nu \rightarrow$  Energy11. (1)  $V_{\text{solid}} > V_{\text{liq}} > V_{\text{gas}} \rightarrow$  for sound

12. (2)



13. (1) Theoretical

14. (1) Particle strikes ground with some speed

$$\Delta P = m(v - u)$$

$$= m(10 - (-10))$$

$$= 1 \times 20 = 20$$

15. (3)

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

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

Time period is independent of mass.

16. (2)

$$W = F \cdot S$$

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

$$= 400 \text{ J}$$

17. (3)

$$W = F \cdot S$$

$$= 40 \times 10 \times \cos 90$$

$$= 0 \text{ J}$$

18. (2) Theory

19. (4)  $\text{Current} = \frac{\text{Charge}}{\text{Time}}$

20. (4) Dispersion is splitting of light into its constituent colors.

21. (3) Theory

22. (4) In wave motion energy is transfer from one point to another point.

23. (3)

$$R = \frac{\rho \ell}{A}$$

$$\rho = \frac{RA}{\ell}$$

ohm × m

24. (2)  $I^2R$

25. (2)  $R = R_0(1 + \alpha \Delta T)$

Resistance increases with increase in temperature.

26. (2) Pb (Lead) is used in storage battery

27. (3) HgS- Cinnabar

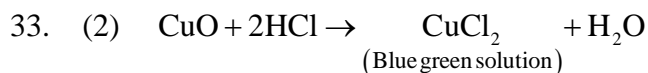
28. (1) C and Si both belongs to the same group. Hence forms similar hydrides.

29. (3) electrochemical series

30. (3) Vinegar contains acetic acid ( $\text{CH}_3\text{COOH}$ )

31. (2)

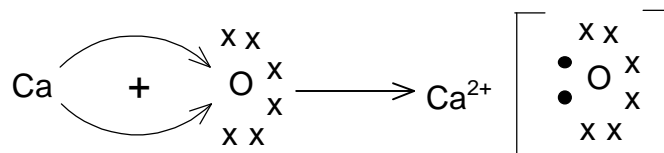
32. (4)



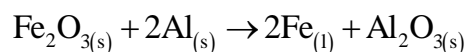
34. (3)

35. (2)

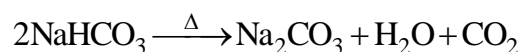
36. (3) The maximum number of electron transfer occurs in the formation of CaO is given as



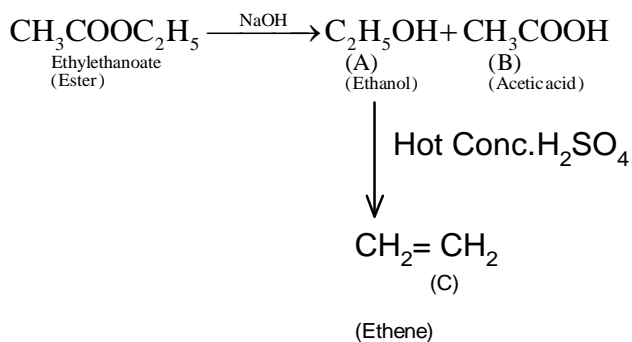
37. (1) The reaction of iron (III) oxide ( $\text{Fe}_2\text{O}_3$ ) with aluminium is used to join railway tracks or cracked machine parts. This reaction is known as the thermite reaction.



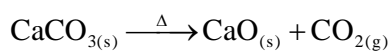
38. (1) The following reaction takes place when  $\text{NaHCO}_3$  is heated during cooking.



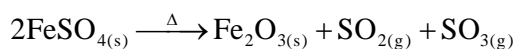
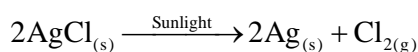
39. (2)



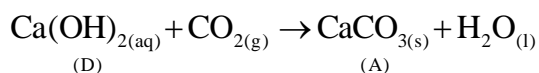
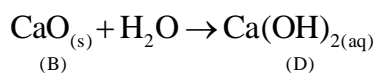
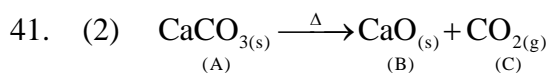
40. (2)



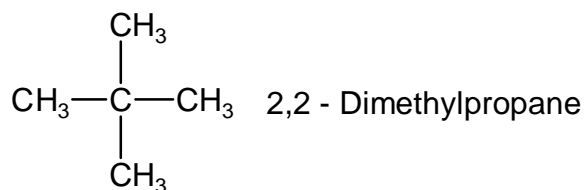
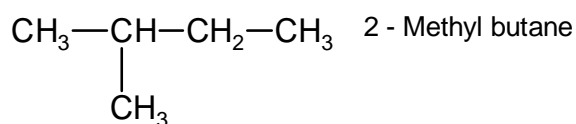
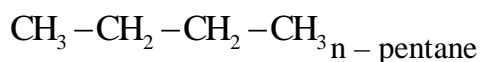
(Limestone) (Quick lime)

(Ferrous sulphate) (Ferric  
oxide)(Lead nitrate) (Lead oxide) (Nitrogen dioxide)  
(Brown fumes)

(silver chloride)

42. (4) The compounds formed by the transfer of electrons from a metal to a non-metal are known as ionic compounds Eg, CaO, MgCl<sub>2</sub> etc;

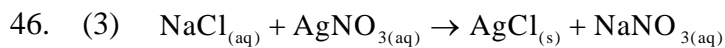
43. (1) There are 3 structural isomers possible for pentane. They are



44. (1)

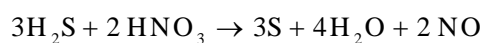


45. (2) Sodium hydrogen carbonate ( $\text{NaHCO}_3$ ) is used in Soda-acid fire extinguishers



White Precipitate

47. (2)



48. (4)  $\text{CaCl}_2$  – Calcium chloride is used to dry any gas in the laboratory

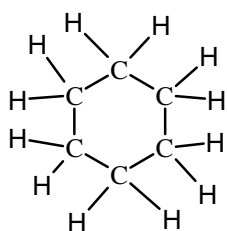
49. (2) Brass – Cu and Zn

Bronze – Cu and Sn

Stainless steel – Fe, Ni and Cr

Solder – Pb and Sn

50. (4) Cyclohexane is  $\text{C}_6\text{H}_{12}$



51. (1)

52. (4)

53. (2)

54. (4)

55. (4)

56. (1)

57. (3)

58. (3)
59. (4)
60. (2)
61. (2)
62. (3)
63. (1)
64. Most common neurotransmitter is Acetylcholine.
65. (3)
66. Placenta is a physiological contact between foetal and maternal blood.
67. The epididymis leads to Vas deferens, that leads to ejaculatory duct opening in urethra.
68. (3) Pepsin is secreted as inactive enzyme pepsinogen and it needs to be activated into pepsin by the action of HCl secreted by gastric glands
69. (4)
70. (2) Progesterone maintains the thickness of endometrium of uterus.
71. (3)
72. (1) Nucleated blood cells are WBC.
73. (2) Secondary sexual characters of female is mediated by sex hormone ie estrogen.
74. (2) Trypsin is present in pancreatic tissue. Functional at 7.5-8 .
75. (2) Salivary amylase is a carbohydrate digesting enzyme which digests cooked starch into maltose.