

Chemistry 2011

3. 2 g of a radioactive sample having half-life of 15 days was synthesised on 1st Jan 2009. The amount of the sample left behind on 1st March, 2009 (including both the days) is

- (a) 0 g (b) 0.125g
(c) 1g (d) 0.5g

Ans.(b)

11. In the electrolysis of acidulated water, it is desired to obtain 1.12 cc of hydrogen per second under STP condition. The current to be passed is

- (a) 1.93 A (b) 9.65 A
(c) 19.3 A (d) 0.965 A

Ans.(b)

12. The one which decreases with dilution is

- (a) molar conductance
(b) conductance
(c) specific conductance
(d) equivalent conductance

Ans.(c)

13. Vapour pressure of pure 'A' is 70 mm of Hg at 25°C. It forms an ideal solution with 'B' in which mole fraction of A is 0.8. If the vapour pressure of the solution is 84 mm of Hg at 25°C, the vapour pressure of pure 'B' at 25°C is

- (a) 28mm (b) 56mm
(c) 70mm (d) 140mm

Ans.(d)

14. A 6% solution of urea is isotonic with

- (a) 1 M solution of glucose
- (b) 0.05 M solution of glucose
- (c) 6% solution of glucose
- (d) 25% solution of glucose

Ans.(a)

15. In countries nearer to polar region, the roads are sprinkled with CaCl_2 . This is

- (a) to minimise the wear and tear of the roads
- (b) to minimise the snow fall
- (c) to minimise pollution
- (d) to minimise the accumulation of dust on the road

Ans.(a)

18. In electrophilic aromatic substitution reaction, the nitro group is *meta* directing because it

- (a) decreases electron density at *ortho* and *para* positions
- (b) decreases electron density at *meta* position
- (c) increases electron density at *meta* position
- (d) increases electron density at *ortho* and *para* positions

Ans.(a)

23. The compound which is not formed during the dry distillation of a mixture of calcium formate and calcium acetate is

- (a) methanal (b) propanal
- (c) propanone (d) ethanal

Ans.(b)

26. The compound which forms acetaldehyde when heated with dilute NaOH , is

- (a) 1, 1-dichloroethane
- (b) 1, 1, 1 trichloroethane
- (c) 1-chloroethane
- (d) 1, 2-dichloroethane

Ans.(a)

28. The one which has least iodine value is

- (a) sunflower oil (b) ginger oil
- (c) ghee (d) groundnut oil

Ans.(c)

29. A diabetic person carries a packet of glucose with him always, because

- (a) glucose reduces the blood sugar level slowly
- (b) glucose increases the blood sugar level slowly
- (c) glucose reduces the blood sugar level
- (d) glucose increases the blood sugar level almost instantaneously

Ans.(d)

30. There are 20 naturally occurring amino acids. The maximum number of peptides that can be obtained is

- (a) 8000 (b) 6470
- (c) 7465 (d) 5360

Ans.(a)

31. Cooking is fast in a pressure cooker, because

- (a) food particles are effectively smashed
- (b) water boils at higher temperature inside the pressure cooker
- (c) food is cooked at constant volume
- (d) loss of heat due to radiation is minimum

Ans.(b)

32. The ore that is concentrated by froth floatation process is

- (a) zincite (b) cinnabar
- (c) bauxite (d) malachite

Ans.(b)

37. The characteristic not related to alkali metal is

- (a) high ionisation energy
- (b) their ions are isoelectronic with noble gases
- (c) low melting point
- (d) low electronegativity

Ans.(a)

39. A covalent molecule AB has pyramidal structure. The number of lone pair and bond pair of electrons in the molecule are respectively

- (a) 2 and 2 (b) 0 and 4
- (c) 3 and 1 (d) 1 and 3

Ans.(d)

41. A bivalent metal has an equivalent mass of 32. The molecular mass of the metal nitrate is

- (a) 182 (b) 168
- (c) 192 (d) 188

Ans.(d)

45. 5 moles of SO₂ and 5 moles of O₂ are allowed to react. At equilibrium, it was found that 60% of SO₂ is used up. If the partial pressure of the equilibrium mixture is one atmosphere, the partial pressure of O₂ is

- (a) 0.82 atm (b) 0.52 atm
- (c) 0.21 atm (d) 0.41 atm

Ans.(d)

47. Rate of physical adsorption increases with

- (a) decrease in surface area
- (b) decrease in temperature

- (c) decrease in pressure
- (d) increase in temperature

Ans.(b)

49. Lucas test is associated with

- (a) aldehydes (b) phenols
- (c) carboxylic acids (d) alcohols

Ans.(d)

50. An organic compound on heating with CuO produces CO_2 but no water. The organic compound may be

- (a) carbon tetrachloride
- (b) chloroform
- (c) methane
- (d) ethyl iodide

Ans.(a)

51. The condensation polymer among the following is

- (a) rubber (b) protein
- (c) PVC (d) polyethylene

Ans.(b)

53. The temperature of the slag zone in metallurgy of iron using blast furnace is

- (1) 1200—1500 C (b) 1500-1600 C
- (c) 400-700 C (d) 800-1000 C

Ans.(d)

54. The function of H_2SO_4 in the contact process is

- (a) to remove arsenic impurity
- (b) to detect colloidal impurity
- (c) to remove moisture
- (d) to remove dust particles

Ans.(a)

55. In which of the following, NH_4^+ is

- (a) Tollens reagent
- (b) Nessler's reagent
- (c) Group reagent for basic radicals
- (d) Group reagent for basic radicals

Ans.(b)

56. Argon is used

- (a) in filling airships
- (b) to obtain low temperature
- (c) in high temperature welding
- (d) in radiotherapy for treatment of cancer

Ans.(c)

57. The incorrect statement in respect of chromyl chloride test is

- (a) formation of red vapours
- (b) formation of lead chromate
- (c) formation of chromyl chloride
- (d) liberation of chlorine

Ans.(d)