CHEMISTRY

BOOKS - BRILLIANT PUBLICATION

ORGANIC CHEMISTRY : SOME BASIC PRINCIPLES - PART III (PURIFICATION AND CHARACTERISATION OF ORGANIC COMPOUNDS)

Level I

1. A mixture of iodine and sodium chloride can be easily separated by

A. fractional distillation

B. steam distillation

C. chromatography

D. sublimation

Answer: D

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2. Absolute alcohol cannot be obtained by simple fractional distillation because

A. pure C_2H_5OH is unstable

B. C_2H_5OH forms hydrogen bonds with water

C. boiling point of C_2H_5OH is very close to that of water

D. constant boiling azeotropic mixture is formed with water

Answer: D

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3. Steam distillation is based on the fact tht vaporisation of organic liquid takes place at

A. lower temperature than its boiling point

B. higher temperature than its boiling point

C. its boiling point

D. water and organic liquid both undergo distillation

Answer: A

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4. Which of the following statements is not applicable to Beilstein test?

A. Green or bluish green flame is due to the formation of volatile cupric halides

B. It does not tell us to which halogen is present in the organic compound

C. It is a very sensitive test that can be easily performed

D. It is a sure test for the presence of halogen

Answer: D

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5. Tyrosine is one of the amino acids present in protein. Its content in protein is 0.22% and its

molecular weight is 181 g mol^{-1}. Lowest molecular mass of protein is:

A. 18100

B. 2200

C. 82273

D. 18132

Answer: C

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6. When thiourea is heated with metallic sodium, the compound which can't be formed is

A. NaCNS

B. NaCN

C. Na_2SO_4

D. Na_2S

Answer: C

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7. The presence of halogen, in an organic compound, is detected by

A. iodoform test

B. silver nitrate test

C. Beilstein's test

D. Millon's test

Answer: C

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8. In Carius method of estimation of halogens, 250 mg of an organic compound gave 141 mg of AgBr. The percentage of bromine in the compound is (at mas Ag = 108, Br = 80)

A. 36

B. 48

C. 60

D. 24

Answer: D

9. 0.75 g platinic chloride of a mono-acidic base on ignition gave 0.245 g platinum. The molar mass of the base is:

A. 75.0

B. 93.5

C. 100

D. 80.0

Answer: B

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10. 0.156 g of an organic compound on heating with fuming HNO_3 and $AgNO_3$ gives 0.235 g AgI. Calculate the percentage of iodine in the compound.

A. $81.41\ \%$

B. $68.32\ \%$

C. $52.75\ \%$

D. $79.68\ \%$

Answer: A

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11. The silver salt of an monobasic acid on ignition gave 60% of Ag. The molecular weight of the acid is

A. 37

B. 33

C. 73

D. 77

Answer: C

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12. Sodium fusion extract of an organic compound gives a blood red colouration with few drops of $FeCl_3$ solution. This indicates the presence of

A. nitrogen

B. sulphur

C. both nitrogen and sulphur

D. both sulphur and chlorine

Answer: C

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13. For which of the following compound Lassaigne's test will fail?

A. NH_2CONH_2

B. $NH_2CONHNH_2HCl$

C. $NH_2NH_2.HCl$

D. $C_6H_5NH_2NH_2.2HCl$

Answer: C

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14. Two solids which are soluble in the same liquid to different extents may be separated by

A. crystallization

B. sublimation

C. evaporation

D. fractional crystallization

Answer: D

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15. The best method for the separation of naphthalene and benzoic acid from their mixture is

A. sublimation

B. chromatography

C. crystallisation

D. distillation

Answer: C

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16. Name the method used to separate glycerol from spent lye in soap industry.

A. simply distillation

B. fractional distillation

C. steam distillation

D. distillation under reduced pressure

Answer: D

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17. The steam distillation of toluene, the pressure of toluene in vapour is

A. equal to pressure of barometer

B. less than pressure of barometer

C. equal to vapour pressure of toluene in simple distillation

D. more than the vapour pressure of toluene in simple distillation

Answer: B

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18. The separation of the constituents of a mixture by column chromatography depends upon their

A. different solubilities

B. different boiling points

C. different refractive indices

D. differential adsorption

Answer: D

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19. An organic compound which produces a bluish green coloured flame on heating in presence of copper is

A. chlorobenzene

B. benzaldehyde

C. aniline

D. benzoic acid

Answer: A

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20. The Lassaigne's extract is boiled with conc. HNO_3 while testing for halogens. By doing so it

A. decomposes Na_2S and NaCN, if formed

B. helps in the precipitation of AgCl

C. increases the solubility product of AgCl

D. increase the concentration of NO_3^- ions

Answer: A

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21. A certain compound has the molecular formula X_4O_6. If 10g of X_4O_6 has 5.72 g X, the atomic mass of X is

A. 32 amu

B. 37 amu

C. 42 amu

D. 98 amu

Answer: A

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22. In organic layer test, CS_2 or CCl_4 is added to Lassaigne's extract and then excess

Cl_2 water is added. This test is used to distinguish between

A. Br^{Θ} and I^{Θ}

B. Cl^{Θ} and Br^{Θ}

C. Cl^{Θ} and I^{Θ}

D. $Cl^{\Theta}, Br^{\Theta},$ and I^{Θ}

Answer: A

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23. An organic compound containing sulphur is estimated by Carius method in which furning HNO_3 is used to convert S into

A. SO_3^{2-}

B. SO_4^{2-}

C. SO_3

D. SO_2

Answer: B

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24. A compound (60 gm) on analysis gave C = 24 gm, H = 4 gm, and O = 32 gm. Its empirical formula is:

A. C_2H_2O

B. $C_2H_4O_2$

C. CH_2O

D. CH_2O_2

Answer: C

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25. An organic compound contains $C = 40\,\%$, $O = 53.5\,\%$ and $H = 6.5\,\%$.

The empirical formula of the compound is:

A. CH_2O

B. C_2H_4O

C. $C_6H_{12}O_6$

D. $C_2H_4O_2$

Answer: A

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26. In Dumas method for the estimation of nitrogen in an organic compound, nitrogen is determined in the form of:

A. Gaseous nitrogen

B. Sodium cyanide

C. Ammonium sulphate

D. Gaseous ammonia

Answer: A

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27. In paper chromatography:

A. mobile phase is liquid and stationary phase is solid

B. mobile phase is solid and stationary phase is liquid

C. both phases are solids

D. both phases are liquids

Answer: A

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28. Molar mass of acetic acid is 60. Its empirical formula is:

A. CH_2O

B. $C_2H_4O_2$

C. $C_3H_6O_3$

D. $C_2H_4O_3$

Answer: A

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29. $ClCH_2COOH$ is heated with fuming HNO_3 in the presence of $AgNO_3$ in Carius tube. After filtration and washing the precipitate obtained is:

A. $AgNO_3$

B. AgCl

C. Ag_2SO_4

D. $ClCH_2COOAg$

Answer: B

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30. A mixture of camphor and benzoic acid can be separated by

A. sublimation

B. chemical methods

C. fractional crystallization

D. extraction with solvent

Answer: B

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31. 15mL of a gaseous hydrocarbon required 45 mL of oxygen for complete combustion. 30 mL of CO_2 is formed. The formula of hydrocarbon is"

A. C_2H_6

B. C_2H_4

C. C_3H_6

D. C_2H_2

Answer: B

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32. To determine the mass of halogen in the organic compound, the compound is heated with fuming HNO_3 in presence of

A. Ag

B. $AgNO_3$

C. $AlCl_3$

D. Ag_2SO_4

Answer: B

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33. Two substances when separated out on the basis of their extent of adsorption by one material, the phenomenon is

A. chromatography

B. fractional distillation

C. sublimation

D. steam distillation

Answer: A

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34. 0.22 g of organic compound C_xH_yO which occupied 112 mL at NTP and on combustion gave 0.44 g CO_2. If the percentage of oxygen is 36.45%, then the ratio of x to y in the compound is:

A. $1:1$

B. $1:2$

C. $1:3$

D. $1:4$

Answer: B

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35. CH_3NH_2 is heated with sodium and extracted with water and then $AgNO_3$ is added. The white ppt. obtained is of:

A. $AgCN$

B. Ag_2SO_4

C. $AgCl$

D. $ClCH_2COOAg$

Answer: A

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36. A mixture contains four solid organic compounds A, B, C, D. On heating only C changes from solid to vapour state. C can be separated from other present in a mixture by :

A. distillation

B. crystallization

C. sublimation

D. fractional distillation

Answer: C

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37. 20 mL of CH_4 is burnt with 60 mL of O_2. If all measurement are made at the same P and T, what is the volume of unreacted oxygen?

A. 10 mL

B. 20 mL

C. 30 mL

D. 40 mL

Answer: B

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38. For a compound to be purified by steam distillation.

A. impurities must be non-volatile

B. the liquid must be completely immiscible with water

C. the vapour pressure of the liquid must be sufficiently high

D. all of the above are correct

Answer: D

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39. Which among the following is not correctly match with their colour?

A.

Compound	Colour
$Na_4\left[Fe(CN)_5NOS\right]$	purple

B.

Compound	Colour
$Fe_4\left[Fe(CN)_6\right]_3$	blue

C.

Compound	Colour
$Fe(CNS)_3$	blood red

D.

Compound	Colour
AgCl	light yellow

Answer: D

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40. The sulphur content of cystine is 26.7%. Give that cystine contains two sulphur atoms, molecular weight of cystine is approximately:

A. 120

B. 240

C. 100

D. 60

Answer: B

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Level Ii

1. A certain compound has the molecular formula X_4O_6. If 10g of X_4O_6 has 5.72g X, the atomic mass of X is:

A. 32 amu

B. 37 amu

C. 42 amu

D. 98 amu

Answer: A

Watch Video Solution

2. An organic compound on analysis gave C = 42.8%, H = 7.20%, and N = 50%. Volume of 1g of the compound was found to be 200 ml at STP. Molecular formula of the compound is:

A. $C_4H_8N_4$

B. $C_{16}H_{32}N_{16}$

C. $C_{12}H_{24}N_{12}$

D. $C_2H_4N_2$

Answer: A

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3. 0.24 g of a volatile liquid on vapourisation gives 45 ml of vapours at STP. What will be the vapour density of the substance? (Density of $H_2 = 0.089 gL^{-1}$)

A. 9.539

B. 59.93

C. 5.993

D. 95.39

Answer: B

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4. The empirical formula of an acid is CH_2O_2, the probable molecular formula of the acid may be

A. $C_2H_4O_2$

B. $C_3H_6O_4$

C. $C_2H_2O_4$

D. CH_2O_2

Answer: D

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5. 4g of hydrocarbon on complete combustion gave 12.571g of CO_2 and 5.143g of water. What is the empirical formula of the hydrocarbon?

A. CH

B. C_2H_3

C. CH_2

D. CH_3

Answer: C

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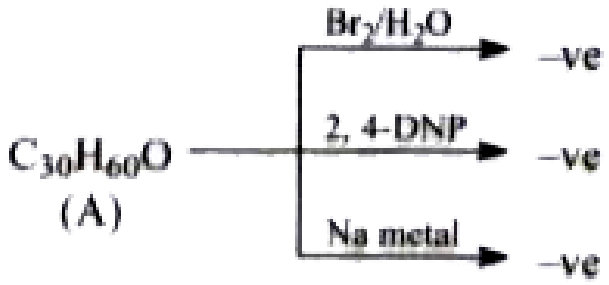
6. In compound $A(C_{30}H_{60}O)$ following tests are observed negatively, A can be



A. an unsaturated ether

B. an epoxide

C. cyclic ketone

D. a cycloalkanol

Answer: B

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7. In Kjeldahl's method, 29.5 mg of an organic compound containing nitrogen was digested and the evolved ammonia was absorbed in 20 mL of 0.1 N HCl solution. The excess of the acid required 15 mL of 0.1 N NaOH solution for complete neutralization. The percentage of nitrogen in the compound is

A. 29.5

B. 59.0

C. 47.4

D. 23.7

Answer: D

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8. 1.4 g of an organic compound was digested according to Kjeldahl's method and the ammonia evolved was absorbed in 60 mL of M/10 H_2SO_4 solution. The excess sulphuric acid required 20 mL of M/10 NaOH solution for neutralization. The percentage of nitrogen in the compound is

A. 3

B. 5

C. 10

D. 24

Answer: C

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9. The ammonia evolved from the treatment of 0.30 g of an organic compound for the estimation of nitrogen was passed in 100 mL

of 0.1 M sulphuric acid. The excess of acid required 20 mL of 0.5 M sodium hydroxide solution for complete neutralization. The organic compound is

A. acetamide

B. thiourea

C. urea

D. benzamide

Answer: C

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10. Analysis of organic compound (0.36 g) containing phosphorus gave 0.66 g of $Mg_2P_2O_7$ when treated with concentrated nitric acid followed by magnesia mixture. Calculate the amount of phosphorus present in the compound.

A. $51.20\ \%$

B. $61.20\ \%$

C. $73.5\ \%$

D. $68.3\ \%$

Answer: A

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11. If a compound on analysis was found to contain C = 18.5%, H = 1.55%, Cl = 55.04% and O = 24.81%, then its empirical formula is

A. CHClO

B. CH_2ClO

C. C_2H_2OCl

D. $ClCH_2O$

Answer: A

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12. $\frac{5}{19}g$ of an organic compound gave 22.4 cm^3 of moist nitrogen measured at 280 K and 732.7 mm pressure. The percentage of nitrogen in the substance is approximately (Aqueous tension at 280 K = 12.7 mm)

A. 9.8

B. 19.6

C. 4.9

D. 9.0

Answer: A

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13. An organic compound contains C, H and S. The minimum molecular weight of the compound containing 8% sulphur is: (atomic weight of S = 32 amu)

A. $600 gmol^{-1}$

B. $200 gmol^{-1}$

C. $400 gmol^{-1}$

D. $300 gmol^{-1}$

Answer: C

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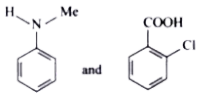
14. Correct pair of compounds which gives blue colouration/precipitate and white

precipitate, respectively, when their Lassaigne's test is separately done is

A. $NH_2NH_2.HCl$ and $ClCH_2COOH$

B. NH_2CSNH_2 and $PhCH_2Cl$

C. NH_2CH_2COOH and NH_2CONH_2

D. 

Answer: D

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15. In duma's method of estimation of nitrogen, 0.25 g of an organic compound gave 40 mL of nitrogen collected at 300 K temperature and 725 mm pressure. If the aqueous tension at 300 K is 25 mm, the percentage of nitrogen in the compound is

A. 16.76

B. 15.76

C. 17.36

D. 18.20

Answer: A

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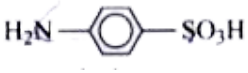
16. Which of the following will give blood red colour while doing Lassaigne's test for nitrogen?

A. 

B. $(NH_2)_2C = 0$

C. $C_6H_5SO_3H$

D. $(NH_4)_2SO_4$

Answer: A

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17. A gaseous hydrocarbon gives upon combustion 0.72 g of water and 3.08 g of CO_2. The empirical formula of the hydrocarbon is:

A. C_7H_8

B. C_2H_4

C. C_3H_4

D. C_6H_5

Answer: A

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18. Ten millilitre of a gaseous hydrocarbon was burnt completely in 80 ml of O_2 at STP. The volume of the remaining gas is 70 ml. The volume became 50 ml on treatment with NaOH. The formula of the hydrocarbon is:

A. C_2H_6

B. C_2H_4

C. C_3H_8

D. C_3H_6

Answer: B

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19. In the estimation of of nitrogen by Kjeldahl's method, 2.8 gm of an organic compound required 20 millimole of H_2SO_4 for the complete neutralisation of NH_3 gas

evolved. The percentage of nitrogen in the simple is:

A. $20\ \%$

B. $10\ \%$

C. $40\ \%$

D. $30\ \%$

Answer: A

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20. 0.3 gm of platinichloride of an organic diacidic base left 0.09 gm of platinum on ignition. The molecular weight of the organic base is:

A. 120

B. 240

C. 180

D. 60

Answer: B

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21. A compound contains 38.8%C, 16%H, and 45.2%N. The formula of the compound would be:

A. CH_3NH_2

B. C_2H_5CN

C. CH_3CN

D. $CH_2(NH_2)_2$

Answer: A

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22. An organic compound on analysis gave C = 42.8%, H = 7.2%, and N = 50%. Volume of 1 gm of the compound was found to be 200 ml at STP. Molecular formula of the compound is

A. $C_4H_8N_4$

B. $C_{16}H_{32}N_{16}$

C. $C_{12}H_{24}N_{12}$

D. $C_2H_4N_2$

Answer: A

 Watch Video Solution

23. 0.14 gm of an acid required 12.5 ml of 0.1 N NaOH for complete neutralisation. The equivalent mass of the acid is:

A. 63

B. 56

C. 45

D. 112

Answer: D

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24. 0.24 g of a volatile liquid on vapourisation gives 45 ml of vapours at STP. What will be the vapour density of the substance? (Density of $H_2 = 0.089 g L^{-1}$)

A. 9.539

B. 59.7

C. 5.993

D. 95.39

Answer: B

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25. Liquid benzene (C_6H_6) burns in oxygen according to

$2C_6H_6(l) + 15O_2(g) \rightarrow 12CO_2(g) + 6H_2O(g)$

How many litres of O_2 at STP are needed for complete combustion of 39 gm of liquid benzene?

A. 11.2 litres

B. 74 litres

C. 84 litres

D. 22.4 litres

Answer: C

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26. Some organic compounds are purified by distillation at low pressure because the compound are:

A. low boiling liquids

B. high boiling liquids

C. highly volatile

D. dissociated before reaching their boiling points

Answer: D

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27. Which is useful for separating benzoic acid from a mixture of benzoic acid and methyl benzoate?

A. $NaHCO_3(aq)$.

B. Dil.HCl

C. Dil. H_2SO_4

D. Dil. HNO_3

Answer: A

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28. 500 mL of a hydrocarbon gas burtn in excess of oxygen yielded 2500 mL of CO_2 and 3.0 litre of water vapour (all volumes measured at the same temperature and pressure). The formula of the hydrocarbon is:

A. C_3H_6

B. C_2H_4

C. C_5H_{12}

D. CH_4

Answer: C

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29. Which compound present in sodium extract prepared using thio urea, gives red colour with $FeCl_3$?

A. $NaCN$

B. Na_2S

C. $NaCNS$

D. Na_2SO_4

Answer: C

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30. The sodium extract on acidification with acetic acid and then adding lead acetate solution gives a black precipitate. The organic compound contains:

A. nitrogen

B. halogen

C. sulphur

D. phosphorous

Answer: C

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31. An organic compound is fused with fusion mixture and extracted with HNO_3. The extract gives yellow precipitate with ammonium molybdate. It shows the presence of which element?

A. P

B. As

C. S

D. May be P or As or Both

Answer: D

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32. Which one of the following hydrocarbons is burnt in excess of oxygen, the volume of CO_2 evolved is just double to that of hydrocarbon taken. The hydrocarbon is:

A. CH_4

B. C_2H_6

C. C_3H_8

D. C_3H_6

Answer: B

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33. Sodium nitroprusside reacts with sulphide ion to give a purple colour due to the formation of

A. $\left[Fe(CN)_5NO\right]^{3-}$

B. $\left[Fe(NO)_5CN\right]^{+}$

C. $\left[Fe(CN)_5NOS\right]^{4-}$

D. $\left[Fe(CN)_5NOS\right]^{3-}$

Answer: C

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34. 1.575 g of an organic acid was dissolved in 250 mL of water. 20 mL of this solution required 16 mL of N/8 alkali solution for

complete neutralisation. If the basicity of the acid is two, find its molecular mass.

A. 182

B. 136

C. 126

D. 148

Answer: C

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35. In the Kjeldahl's method for estimation of nitrogen in a soil sample, ammonia evolved from 0.75 g of sample neutralised 10 ml of 1 M H_2SO_4. The percentage of nitrogen in the soil is

A. 37.33

B. 45.33

C. 35.33

D. 43.33

Answer: A

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36. 0.0833 mole of a carbohydrate of empirical formula CH_2O contains 1.00 g of hydrogen. The molecular formula of the carbohydrate is:

A. $C_5H_{10}O_5$

B. $C_3H_4O_3$

C. $C_{12}H_{22}O_{11}$

D. $C_6H_{12}O_6$

Answer: D

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37. Analysis of an organic compound gave 74% C, 8.65% H and 17.3% N. What is the empirical formula of the compound.

A. C_5H_8N

B. $C_{10}H_{12}N$

C. C_5H_7N

D. $C_{10}H_{14}N$

Answer: C

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38. 0.16 g of a dibasic organic acid required $25cm^3$ of 0.1 M NaOH for complete neutralization. The molecular mass of the acid is:

A. 45

B. 90

C. 64

D. 128

Answer: D

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39. 9.9 g amide with molecular formula $C_4H_5N_xO_y$ on heating with alkali liberated 1.7 g of ammonia. If the percentage of oxygen is 33.33% then the ratio of 'N' and 'O atoms in the compound is:

A. $1:1$

B. $1:2$

C. $2:3$

D. $3:2$

Answer: B

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40. In a compound C, H and N atoms are present in 9 : 1 : 3.5 by weight. Mol wt. of compound is 108, its mol. formula is

A. $C_2H_6N_2$

B. C_3H_4N

C. $C_6H_8N_2$

D. $C_9H_{12}N_3$

Answer: C

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Level Ii Assertion Reason Type

1. Assertion : Sulphur present in an organic compound can be estimated quantitatively by

Carius method.

Resaon : Sulphur is separated easily from other atoms in the molecule and gets precipitated as light yellow solid.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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2. Assertion : Simple distillation can help in separating a mixture of propan-1-ol (boiling piont $97^\circ C$) and propanone (boiling point $56^\circ C$)

Reason : Liquids with a difference of more than $25^\circ C$ in their boiling points can be separately by simple distillation.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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3. Assertion : Oils are purified by steam distillation.

Reason : The compounds which decompose at their boiling points can be purified by steam distillation.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: D

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4. Assertion : $NH_2 - \overset{\overset{S}{||}}{C} - NH_2$ gives red colour in Lassaigne's test.

Reason : Compounds having N along with C give red colour in Lassaigne's test.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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5. Assertion : Lassaigne's tests is not shown by diazonium salts.

Reason : Diazonium salts lose N_2 on heating much before they have a chance to react with fused sodium.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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6. Assertion : In organic layer test, Cl_2 water is added to the sodium extract, which oxidises which oxidises Br^{Θ} and I^{Θ} ions to Br_2 and I_2, respectively.

Reason : Reduction potential of Cl_2 is greater than that of Br_2 and I_2.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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7. Assertion : Mixed melting point can be used to test the purity of an organic compound.

Reason : Impurities raise the melting point of the organic compound.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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8. Assertion : Impure glycerine is purified by vacuum distillation.

Reason : Glycerine is soluble in water.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: B

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9. Assertion : Criteria of purity of an organic liquid is its boiling point.

Reason : An organic compound has a fixed and sharp boiling point.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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10. Assertion : Glycerol is purified by distillation under reduced pressure.

Resaon : Method of distillation under reduced pressure is used to purify liquids having very high boiling points and those, which decompose at or below their boiling points.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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11. Assertion : Paper chromatography is a type of partition chromatography.

Reason : Moving phase is liquid and stationary phase is solid.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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12. Assertion : Components of a mixture of red and blue inks can be separated by distributing the components between stationary and mobile phases in paper chromatography.

Reason : The coloured components of inks migrate at different rates because paper selectively retains different components according to the difference in their partition between the two phases.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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13. Assertion : A mixture of o-nitrophenol and p-nitrophenol can be separated by steam distillation.

Reason : p-Nitrophenol is steam volatile while o-nitrophenol is not steam volatile.

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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14. Assertion : Ethanol and water mixture cannot be completely separated by fractional distillation.

Reason : Ethanol and water forms azeotropic mixture. : If both (A) and (R) are correct and (R) is the correct explanation of (A), If both (A) and (R) are correct, but (R) is not the correct explanation of (A), If (A) is correct, but (R) is incorrect, If both (A) and (R) are incorrect

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: A

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15. Assertion : Nitrogen cannot be estimated in nitrobenzene by Kjeldahl's methods.

Resaon : Nitrobenzene evolves ammonia gas on acid treatment. : If both (A) and (R) are correct and (R) is the correct explanation of (A), If both (A) and (R) are correct, but (R) is not the correct explanation of (A), If (A) is correct, but (R) is incorrect, If both (A) and (R) are incorrect

A. If both (A) and (R) are correct and (R) is the correct explanation of (A)

B. If both (A) and (R) are correct, but (R) is not the correct explanation of (A)

C. If (A) is correct, but (R) is incorrect

D. If both (A) and (R) are incorrect

Answer: C

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