CHEMISTRY

BOOKS - S DINESH & CO CHEMISTRY (HINGLISH)

PURIFICATION & CHARACTERISATION OF ORGANIC COMPOUND

Multiple Choice Questions

1. Naphthalene is a volatile solid. It is best purified by:

A. (A) sublimation

B. crysrtallistion

C. distillation extraction with solvent .

D.

Answer: A

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2. 0.2 g of a an organic compound on couplete combustion produces 0.44 of CO_2 ,then precantage of carbon it is

A. 50

B. 60

C. 70

D. 80

Answer: B

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3. Glycerol decomposes at its boiling point, the purification of glycerol can be affected by

A. crystallisation

B. simple distillation

C. distillation under reduced pressure

D. fractional crystallisation.

Answer: C

4. In Lassaigne's test, the organic compound is fused with sodium metal so as to

A. burn the compound

B. form a sodium derivative

C. convert N, S or halogen into soluble ionic compund

D. non of these

Answer: C

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5. Which of the following compound will give blood red colour while doing the Lassaigne's test of sulphur is due to

A. $(NH_2)_2C=O$

B. $H_2N(C_6H_4)SO_3H$

C. $C_6H_5SO_3H$

D. $CHCl_3$

Answer: B

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6. The violet colour in the Lassaigne's test of sulphur is due to

A. $Fecl_3$

B. $Na_2\left[Fe(CN)_6\right.$

C. $Na_4\left[Fe(CN)_5NOS\right]$

D. $Fe_4\left[Fe(CN)_6\right]_3$

Answer: C

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7. The function of boiling the sodium extract with concentrated nitric acid before testing halogens is

A. to make solution clear

B. to destroy CN^- and S^{2-} ion

C. to make the solution acidic

D. to bring common ion effect.

Answer: B

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8. The blue colour developed during the lassaigne's test for nitrogen is due to

A. $Fe_3\left[Fe(CN)_6\right]_4$

B. $Fe_4\left[Fe(CN)_6\right]_3$

C. $K_4\left[Fe(CN)_6\right.$

D. $Fe(CNS)$

Answer: B

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9. In Kjeldahl's method, the nitrogen present in the organics compund is coverted into

A. gaseous ammonia

B. ammonium sulphate

C. ammonium phosophate

D. ammonium nitrate

Answer: B

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10. A formula of a compound which gives whole number atomic ratio in one molecule g compound is called

A. structural formula

B. molecular formula

C. projection formula

D. empirical formula,

Answer: D

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11. The separation of mixture of two compounds by chromatographic technique is based upon

A. differential solubilities

B. different densites

C. different absorption

D. differential adsorption

Answer: D

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12. Steam distillation is applied for the separation of those compounds which are

A. steam volatile and soluble in water

B. steam volatile and decompose in water

C. steam volatile and insoluble in water

D. capable of chemical reaction with steam.

Answer: C

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13. Which of the following forms a criterion of purity of organic compound ?

A. Molecular mass

B. Empirical mass

C. Melting or boiling point

D. Solubility.

Answer: C

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14. The process of differential extraction is based upon

A. different solubilities

B. different molecular masses

C. different boiling points —

D. different chemical properties

Answer: A

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15. Which of the following method of separation can be applied to the mixture of liquids having different boiling points ?

A. solvent extraction —

B. differential crystallisation

C. fractional distillation

D. steam distillation

Answer: C

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16. Two solids A and B have appreciable different solubilities in water but their melting point are very close. The mixture of A and B can be separated by

A. sublimation

B. fractional crystallisation

C. distillation

D. specific method.

Answer: B

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17. In coloumn chromatography the moving phase is constitude of

A. a substance which have to be seprated

B. eluent

C. adsorbent

D. mixture of eluent and substance to be seprated

Answer: D

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18. Simple distrillation can be used to separate compound which

A. are highly volatile and have very close boiling points

B. are steam volatile

C. decomposes on heating

D. are volatile and have non volatile impuries

Answer: D

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19. A compound has simplest formula CH_2 To which hydrocarbon serices does it bleong ?

A. Alkanes

B. Cycloalkanes

C. Alkynes

D. non of these

Answer: B

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20. 60 g of oraganic compound on analysis gave following result C=24 g , H=4g and O=32g.

The compound can be

A. CH_2O_2

B. C_2H_2O

C. $C_2H_2O_4$

D. CH_2O

Answer: D

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21. A sturated liquid hydrocarbon can be converted into a mixture of gaseous hydrocabons by

A. Hydrolysis

B. Vaporisation

C. Pluverisation

D. Cracking

Answer: D

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22. In Kjeldahl's method,$CuSO_4$ acts as

A. oxidising agent

B. catalytic agent

C. reducing agent

D. hydrolysing agent

Answer: B

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23. Soda lime test is used to detect one of the following element of organic compound

A. C

B. H

C. N

D. S

Answer: C

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24. If empirical formula of an organic compound is CH_2O and its 6.02×10^{23} molecules weight 60 g then it can be

A. CH_3OH

B. C_2H_5OH

C. $HCOOH$

D. $HCOOCH_3$

Answer: D

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25. In steam distillation the vapour pressure of the volatalie organic compound is

A. Equal to atmospheric pressure

B. less than the atmospheric pressure

C. more than the atmospheric pressure

D. just double the atmospheric pressure

Answer: B

26. Latest technique for purification isolation and separation of organis substance is

A. Distillation

B. crysrtallistion

C. sublimation

D. Chromatography

Answer: D

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27. Sublimation is a process where a solid

A. melts

B. Changes into liquid from

C. Boils

D. Changes into vapur form directly

Answer: D

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28. Liquids with decompose below their normal boiling ponit can be distilled at lower temperature by

A. increasing the pressure

B. decreasing the pressure

C. heating in water bath

D. heating in sand bath

Answer: B

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29. Boiling point of a liquid can be increased by

A. increasing the pressure

B. decreasing the pressure

C. purifying the liquid

D. adding water it

Answer: A

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30. Which of the following statement apply best to vacuum distillation ?

A. Disstils liqiud as well as its decomposition products

B. Distils liquid by avoding decomposition and at alow temperature ?

C. Both A and B

D. Non of the above

Answer: B

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31. An organic compound is found to contain C=40.0%,H=6.66%.The empirical formula is

A. CH_2O

B. CHO_2

C. CHO

D. C_2H_6O

Answer: A

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32. 0.532 g of the platinitic chloric of a mono acid base left 0.195 g of plantiumas residue on ignition,.The equlivalnt weight of the base is

A. 32

B. 61

C. 122

D. 115

Answer: B

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33. The percentage of oxygen in CH_2O is

A. 0.4

B. 0.066

C. 0.534

D. 1

Answer: C

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34. An organic compound is found to have the formula $C_5H_{10}ONCl$. The percentage of nitogen in it is

A. 20.36

B. 10.3

C. 44.05

D. non of these

Answer: B

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35. A gas is found to have the formula $(CO)_n$ if its vapour density is 56 the value of n will be

A. 7

B. 5

C. 4

D. 3

Answer: C

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36. An organic compound contains carbon ,hydrogen and oxengen .The percentage of carbon is 36 while of hydrogen is 4.The percentage of oxygen will be

A. (100-36)

B. (100-4)

C. [100-(36+4)]

D. [100-36+4]

Answer: C

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37. 0.59 g of an organic substance when treated with caustic soda evolved ammonia ,Which requried 20 c.c of N/2 sulphuric acid of neutralization

The percentage of nitrogen is

A. 0.4

B. $53.6\ \%$

C. $63.6\ \%$

D. 0.2373

Answer: D

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38. Raw juice is generally concentrated by

A. Vacuum distillation

B. steam distillation

C. both

D. none

Answer: A

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39. In organic compound P is estimed as

A. H_3PO_4

B. p_2O_5

C. $Mg(PO_4)_2$

D. Magnesium pyrophosphate

Answer: D

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40. First Noble prize in chemistry was given to

A. Van't Hoff

B. Rutherford

C. Pasteur

D. Curie

Answer: A

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41. A mixture containg large number of componets is separated by

A. Distillation

B. Chromatography

C. vacuum distillation

D. Steam distillation

Answer: B

42. The ratio of molecular mass to empirical formula mass for glucose is

A. 2

B. 4

C. 6

D. 8

Answer: C

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43. Chromatography is used for the purification of

A. Solids

B. Gases

C. Liquids

D. all tha above

Answer: D

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44. Copper wire test is called

A. Dumas test

B. Liebig test

C. Belisten's test

D. Fusion test

Answer: C

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45. In lassaigne test thio urea is converted into

A. NaCNS

B. Na_2S

C. NaCN

D. Na_2SO_4

Answer: A

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46. Kjeldahl's method cannot be used for the estimation of nitrogen in

A. Pyridine

B. Nitro Compounds

C. Azo compounds

D. All tha three above

Answer: D

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47. The percentage of carbon in acetic acid is

A. 40

B. 33.3

C. 5

D. 20

Answer: D

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48. The most stisfactory method to separate sugars is to use

A. Fractional crystallisation

B. sublimation

C. Chromatography

D. Benedict's reagent

Answer: C

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49. There is no direct test for the detection 0? following in organic compound

A. Cl

B. N

C. S

D. O

Answer: D

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50. Positive Beilstein test shows that

A. halogen is surely present

B. halogen is absent

C. halogen may be present

D. none of these.

Answer: C

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51. A mixture of naphthalene and benzoic acid can be separated by

A. extraction with solvent

B. sublimation

C. fractional crystallisation

D. distillation.

Answer: A

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52. If two compounds have the same empirical formula but different molecular formulae they must have

A. Different percentage composition

B. Different molecular mass

C. Same viscosity

D. Same vapour density.

Answer: B

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53. Complete combustion of a sample of hydrocarbon Q gives 0.66 g of CO_2 and 0.36 g of H_2O.The emptical formula of the compound is

A. CH_2

B. C_3H_4

C. C_3H_8

D. C_4H_8

Answer: C

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54. 59 g of an amide obtained from a carboxylic cid, RCOOH, upon heating with alkali liberated, 17 g of ammonia. The acid is '

A.) Formic acid

B. Acetic acid

C. Propionic acid

D. Benzoic acid.

Answer: B

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55. An organic substance from its aqueous solution can be separated by

A. Distillation

B. Steam distillation

C. Solvent extraction

D. Fractional distillation

Answer: C

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56. A substance which is insoluble in water and possesses a vapour pressure of 10-15 mm Hg at 373 K can be conveniently

A. Sublimation

B. Crystallization

C. DiStiHation

D. Steam distillatirm

Answer: D

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57. The following is the percentage composition of a compound : Na = 16-08%, C 4.19%, 0 == 16'78% and H20 62'95% Its molecular formula is

A. Na_2CO_3

B. $Na_2CO_3.H_2O$

C. $Na_2CO_3.10H_2O$

D. $Na_2CO_3.5H_2O$

Answer: C

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58. Distillation under reduced pressure is employed for

A. C_6H_6

B. Petrol

C. $CH_2OHCHOHCH_2OH$

D. Organic compounds used in medicine.

Answer: C

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59. A gaseous hydrocarbon has 85% carbon and vapour density of 28. The possible formula of the hydrocarbon will be

A. C_6H_3

B. C_2H_8

C. C_2H_2

D. C_4H_8

Answer: D

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60. The element X (atomic weight = 75) and Y (atomic weight = 16) combine to give a compound containing 75.8% X. The molecular formula of the compound is

A. XY

B. X_2Y

C. X_2Y_2

D. X_2Y_3

Answer: D

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61. In the Lassaigne's test, the blood red colouration is due to the formation of

A. $Fe(CNS)_2$

B. NaCNS

C. NH_4CNS

D. $Fe(CNS)_3$

Answer: D

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62. When an organic compound containing 1 phosphorus is fused with fusion mixture, it gives is

A. Na_2HPO_4

B. Na_3PO_4

C. NaH_2PO_4

D. Na_3PO_3

Answer: A

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63. In Lassaigne's test, the organic compound is fused with a piece of sodium metal in order to

A. ncrease the ionisation of the compound

B. decrease the melting point of the compound

C. increase the reactivity of the compound

D. convert the covalent compound into a mixture of ionic compounds.

Answer: D

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64. Which of the following elements in an organic compound cannot be detected by Lassaigne's

A. N

B. S

C. Cl

D. H

Answer: D

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65. Refining of petroleum involves the process of

A. Simple distillation

B. Fractional distillation

C. Distillation under reduced pressure

D. Destructive distillation.

Answer: B

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66. substance which decomposes below its boiling Point can be best purified by 4

A. Steam distillation

B. Simple distillation

C. Fractional distillation

D. Distillation under reduced pressure.

Answer: D

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67. A mixture of acetone (b.p. 56) and methanol (b.p. 65° can be separated by

A. Vacuum distillation

B. Steam distillation

C. Fractional distillation

D. Distillation under reduced pressure.

Answer: C

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68. Simple distillation can be used to separate

A. a mixture of benzene (b.p. 80°C) and thiopene (b.p. 84°C)

B. a mixture of ethanol (b.p. 78°C) and water (b.p. $100^\circ C$

C. a mixture of ether (b.p. 35°C) and toluene

D. None of the above.

Answer: C

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69. The boiling point of a compound does not depend upon

A. Solubility of the compound in water

B. Hydrogen bonding

C. Size of the molecule

D. Polarity of the molecule.

Answer: A

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70. A mixture of benzoic acid and naphthalene can be separated by crystallization from

A. Hot water

B. Cold water

C. Benzene

D. Ether.

Answer: A

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71. The separation of organic compound from its aqueous solution can be done by

A. Distillation

B. Steam distillation

C. Solvent extraction

D. Fractional distillation.

Answer: C

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72. 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. Differentia1 absorption.

Answer: D

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73. A mixture of camphor and benzoic acid can be separated by which of the following techniques

A. Chemical methods

B. Sublimation

C. Fractiona1 distillation

D. Extraction with a solvent.

Answer: A

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74. Separation of two substances by fractional crystallisation depends upon their difference in

A. Densities

B. Solubilities

C. Meting points

D. Boilinigipoints.

Answer: B

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Assorted Q

1. For which of the following compounds steam distillation can be used for purification

A. p-Hydroxyphenol

B. Phenol

C. Salicylaldehyde

D. All of these.

Answer: C

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2. Two organic compounds A and B, both containing only .C and H yield on analysis, the same percentage composition by mass C=92-3% and H = 77%. A decolourises bromine water and B does not. Identify A and B

A. $A = C_2H_2, B = C_6H_6$

B. $A = C_6H_6, B = C_2H_2$

C. $A = C_2H_4, B = C_2H_6$

D. $A = C_2H_2, B = C_3H_8.$

Answer: A

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3. If the percentage of nitrogen in an organic compound is 125%, then how much of the organic compound should be taken so as to produce 50 mL of N_2 at 300 K and 715 mm pressure (Aq. tension = 15 mm).

A. 0.419 g

B. 0.149 g

C. 0.914. g

D. 0.941 g

Answer: A

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4. Sugar containing an impurity of common salt can be purified by crystallisation from

A. Benzene

B. Alcohol '

C. Petroleum ether

D. Water.

Answer: B

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5. The technique of gas chromatography is suitable for compounds which are

A. Liquids

B. Highly volatile

C. Soluble in water 1

D. Vaporised without decomposition.

Answer: D

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6. Amongst the following elements present in an organic compound, the element which does not have a direct test is

A. Cl

B. O

C. S

D. N

Answer: B

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7. 0.44 gm of organic compound C_xH_y O which occupied 224 ml at NTP and on combustion gave 0.88 gm CO_2. The ratio of X to Y in the compound 1s

A. $1:1$

B. $1:2$

C. $1:3$

D. $1:4$

Answer: B

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8. Gas liquid chromatography is suitable for compounds which

A. are highly volatile

B. are soluble in water

C. are liquid

D. vaporize without decomposition.

Answer: A

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9. When one of the following hydrocarbon is burnt in excess of oxygen, the volume of CO_2 evolved is just three times to that of hydrocarbon taken.

The hydrocarbon is

A. CH_4

B. C_2H_6

C. C_2H_2

D. C_3H_6

Answer: D

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10. Ellution in the chromatography is the process for .

A. crystallization of compound

B. separation of compound

C. extraction of compound

D. distillation of compound. '

Answer: B

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11. Silica gel is used for keeping away the moisture because it

A. adsorbs water

B. absorbs water

C. reacts with water

D. none of the above

Answer: A

12. Simple distillation involves all the following process except

A. change of state

B. boiling

C. condensation

D. evaporation.

Answer: D

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13. A mixture of two immiscible liquids may be easily separated by using a

A. Leibig's condenser

B. fractionisation column

C. separating funnel

D. none of these.

Answer: C

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14. An organic compound contains C, H ‘and S.

An organic compound contains C, H ‘and S.

A. copper spiral

B. silver spiral

C. potassium chromate

D. lead chromate.

Answer: D

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15. In the estimation C & H if the compound contains halogen, the combustion tube at the exit should contain a

A. copper spiral

B. silver spiral

C. lead spiral

D. iron spiral.

Answer: B

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16. Lassaigne's extract is heated with cone. HNO_3 before testing for halogens because

A. silver halides are insoluble in HNO_3

B. Na_2S and $NaCN$ are decomposed by HNO_3

C. Ag_2S is soluble in HNO_3

D. $AgCN$ is soluble in HNO_3.

Answer: B

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17. Vapour density of a volatile substance is $4(O_2 = 1)$. Its molecular weight would be

A. 8

B. 2

C. 64

D. 128

Answer: D

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18. Which is useful for separating benzoic acid from ethyl benzoate

A. dil. HCl

B. aq. $NaHCO_3$

C. dil H_2SO_4

D. dil. HNO_3

Answer: B

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19. 0.99 g of an organic compound containing halogen when heated with fuming nitric acid in the presence of silver nitrate in a carius tube gave 0.287 g of white precipitate. The percentage of halogen in the compound is about

A. 29.6

B. 71.7

C. 35.4

D. 64.2

Answer: B

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20. Aniline is insoluble in water and prossesses low vapour pressure. It can be purified by ‘

A. vacuum distillation

B. simple distillation

C. fractional distillation ' .

D. steam distillation.

Answer: D

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

A. chromatography '

B. paper chromatography

C. sublimation

D. steam distillation.

Answer: A

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Revision Q F Competitive Exams

1. Which process is suitable for the purifucation of aniline ?

A. Simple distillation

B. Steam distillisation

C. Fractional distillation

D. fractional crystallisation.

Answer: B

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2. In a Lassaigne's test for sulphur in the organic compound with sodium nitroprusside solution the purple colour formed is due to

A. $Na_4\left[Fe(CN)_5NOS\right.$

B. $Na_3\left[Fe(CN)_5S\right]$

C. $Na_2\left[Fe(CN)_5NOS\right]$

D. $Na_3\left[Fe(CN)_6\right]$

Answer: C

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3. Anthracene is purified by

A. Filtration

B. Crystallization

C. Distillation

D. Sublimation

Answer: D

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4. In Carius tube the compound $ClCH_2 - COOH$ was heated with fuming HNO_3 and $AgNO_3$.After

filtration and washing,a white ppt.was formed

The ppt. is

A. AgCl

B. $AgNO_3$

C. Ag_2SO_4

D. $CH_2(Cl)COOAg$

Answer: A

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5. In Duma's method,the gas which is collected in Nitromer is

A. N_2

B. NO

C. NH_3

D. H_2

Answer: A

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6. If on adding $FeCl_3$ solution to acidified Lassaigne solution ,a blood red colouraton is produced of

A. S

B. N

C. N and S

D. S and Cl

Answer: C

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7. If 0.32 g of an organic compound containing sulphur produces 0.233 g of $BaSO_4$ Then the percentage of sulphur in it is

A. 10

B. 15

C. 20

D. 25

Answer: A

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8. 0.2 g of an organic compound on comptete combustion produces 0.18 g of water ,then the percentage of hydrogen in it is

A. 5

B. 10

C. 15

D. 20

Answer: B

9. The siplest formula of a compound containning 50% of element X (at. Wt. 10) and 50% of element Y (at.wt. 20) is

A. XY

B. XY_2

C. X_2Y

D. X_2Y_3

Answer: C

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10. Distillation is used to separate liquids which differ in their b.pt by

A. $5^\circ C$

B. 10°

C. $30^\circ - 80^\circ$ C

D. $100^\circ C$

Answer: C

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11. Impure glycerine is purified by

A. Steam distillation

B. Simple distillation

C. vacuum distillation

D. None

Answer: C

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12. Absolute alcohol is prepared by

A. Fraction distillation

B. Kolbe's Method

C. Azeotropic distillation

D. vacuum distillation

Answer: C

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13. Duma's method involves the determination of content of nitrogen in the organic compound in the form os

A. gaseous NH_3

B. gaseous NH_2

C. NaCN

D. $(NH_4)_2SO_4$

Answer: B

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14. A dibasic acid containing C,H and O was found to contain C=26.7% and H=2.2%.The vapour density of dienthyl ester was found to be 73. What is Molecular formula of acid ?

A. CH_2O_2

B. $C_2H_2O_4$

C. $C_3H_3O_4$

D. $C_4H_4O_4$

Answer: B

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15. Leibing method is used for the estimation of

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16. In Lassaigne's test for nitrogen,the blue colour is due to the formation of

A. Potassium ferrocyanide

B. Sodium cyanide

C. Sodium ferrocyanide

D. Ferri-ferrocyanide

Answer: D

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17. Nitrogen in an organic compound can be estimated by

A. Kejldahl's method only

B. Duma's method only

C. Both the methods

D. Non of these methods

Answer: C

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18. Distillation is used to separate liquids which differ in their boiling point by

A. $5^\circ C$

B. $10^\circ C$

C. $30 - 50^\circ C$

D. $15^\circ C$

Answer: C

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19. Which of the following organic compounds contains about 52 % carbon ?

A. Ethanal

B. Dismethly ether

C. Acetic acid

D. Phenol

Answer: B

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20. The purity of an organic compound is determined by

A. Density

B. m.pt.

C. mixed m.pt.

D. molecular weight

Answer: C

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21. During Lassaigne's test N and S present in an organic compound changes into

A. Na_2S and $NaCN$

B. NaSCN

C. $Na_2SO_4$and $NaCN$

D. $Na_2SO_4$and Na_2S and $NaCNO$

Answer: A

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22. Which of the follom'ng technique is most suitable for purification of cyclohexanone from a mixture containing benzoic acid, isoamylalcohol, cyclohexane and cyclohexanone ?

A. Crystallisation

B. IR spectroscopy

C. Sublimation

D. Gas chromatography

Answer: D

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23. The best method to separate the mixture of ortho and para nitrophenol (1:1) is

A. steam distillation

B. crystallization

C. vaporisation

D. colour spectrum.

Answer: A

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24. Chloroform and benzene form a pair of miscible liquids. These can be separated by

A. sublimation

B. filtration

C. a separating funnel

D. distillation

Answer: D

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25. Which one of the following is not used for the purification of solid impurities ?

A. Distillation

B. Sublimation

C. Crystallisation

D. None of these

Answer: D

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26. The compound that does not give a blue colour is Lassaigne's test is

A. Aniline

B. Glycine

C. Hydrazine

D. Urea

Answer: C

Watch Video Solution

27. Absolute alcohol is prepared by

A. Fractional distillation

B. Kolbe's method

C. Vacuum distillation

D. Azeotropic distillation.

Answer: D

Watch Video Solution

28. If 0.24 g of a volatile liquid upon vaporization gives 45 ml of vapours at NTP.What will be the vapour density of the substance ? (Density of $H_2 = 0.089 gL^{-1}$)

A. 95.39

B. 5.993

C. 95.93

D. 56.0

Answer: D

Watch Video Solution

29. An organic compound containing C,H and N gave the following analysis

C=40 %,H=13.33 %,N=46.67 %

What would be its empirical formula ?

A. C_2H_7N

B. $C_2H_7N_2$

C. CH_4N

D. CH_5N

Answer: C

Watch Video Solution

30. Emprical formula of a hydrocarbon containing 80 % corbon and 20 % hydrogen is

A. CH

B. CH_2

C. CH_3

D. CH_4

Answer: C

Watch Video Solution

31. If 0.2 g of an organic compound containing carbon,hydrogen and oxygen on combustion yielded 0.147 g CO_2 and 0.12 g water ,What will be the content of oxygen in substence ?

A. 0.7329

B. 0.7845

C. 0.8323

D. 0.895

Answer: A

32. A mixture contains four solid organic compounds containing A, B, C and D. On heating only C changes from solid to vapour state .C can be separated from the rest in the mixture by

A. distillation

B. sublimation

C. Fractional distillation

D. crystallisation

Answer: B

 Watch Video Solution

33. In Kjedhal's method„ the nitrogen presence is estimed as

A. N_2

B. NH_3

C. NO_2

D. N_2O_3

Answer: A

34. An organic compound with C =40 % and H= 6.7% will have the empirical formula

A. CH_2

B. CH_2O

C. $C_3H_6O_3$

D. $C_2H_4O_2$

Answer: B

Watch Video Solution

35. The equivalent wieght of an acid is equal to

A. Molecula weight $\times$ acidity

B. Molecula weight $\times$ basicity

C. Molecula weight/basicity

D. Molecula weight/basicity

Answer: C

Watch Video Solution

36. A compound with empirical formula `O_(2) has a vapour density of 30.Its molecular formula is

A. $C_2H_2O_2$

B. $C_2H_4O_2$

C. $C_3H_6O_3$

D. $C_6H_{12}O_6$

Answer: B

Watch Video Solution

37. The latest techique used for purification of organic compound is

A. Chromatography

B. Vacuum distiliation

C. fractional distiliation

D. crystallisation

Answer: A

Watch Video Solution

38. Empricial formula of a hydrocarbon containing 80 % carbon and 20% hydrogen is

A. CH

B. CH_2

C. CH_3

D. CH_4

Answer: C

Watch Video Solution

39. Molecular mass of a volatile substance mat be obtained by

A. Kejldahl's method only

B. Duma's method

C. Victor-Meyer's method

D. Liebig's method

Answer: C

Watch Video Solution

40. An organic compound with C =40 % and H= 6.7% will have the empirical formula

A. CH_4

B. CH_4O

C. $C_3H_6O_3$

D. $C_2H_4O_2$

Answer: B

Watch Video Solution

41. An organic compound with C =40 % and H= 13.33 % and N=46.67 % Its empirical empirical formula would be

A. CHN

B. C_2H_2N

C. CH_4N

D. C_3H_7N

Answer: C

Watch Video Solution

42. Empirical formula of compound is CH_2O.If its molecular weight is 180 then the molecular formula of the compound is

A. $C_6H_{12}O_6$

B. $C_5H_{10}O_5$

C. $C_3H_6O_3$

D. $C_3H_8O_4$

Answer: A

Watch Video Solution

43. The Beilstein test for organic compounds is used to detect

A. Nitrogen

B. Sulphur

C. Carbon

D. Halogens

Answer: D

Watch Video Solution

44. Which of the following is the scientific method to test presence of water in a liquid ?

A. Smell

B. Taste

C. Use of litmus paper

D. Use of anhydrous copper sulphate

Answer: D

Watch Video Solution

45. Which of the following has molecular weight of 92 ?

A. Toluene

B. Benzene

C. Methylene

D. Propene

Answer: A

Watch Video Solution

46. Empirical formula of a compound is CH_2O. If its vapour density is 90, then the molecular formula of the compound is

A. $C_5H_{10}O_5$

B. $C_3H_6O_3$

C. $C_6H_{12}O_6$

D. $C_4H_8O_4$

Answer: C

View Text Solution

47. Which of the following compounds does not show Lassaine's test for nitrogen ?

A. Urea

B. Hydrazine

C. Phenylhydrazine

D. Azobenzene

Answer: B

Watch Video Solution

48. 0.1914 g of an organic acidi s dissolved in about 20 ml of water. 25 ml of 0.12 N NaOH is required for the complete neutralizatioonf the acid solution. The equivalent weight of the acid is

A. 65.0

B. 64.0

C. 63.8

D. 62.5

Answer: C

Watch Video Solution

49. An organic compound contains 49.3 % carbon,6.84 % hydrogen and its vapour density is 73 Molecular formula of the compound is

A. $C_3H_5O_2$

B. $C_6H_{10}O_4$

C. $C_3H_{10}O_2$

D. $C_4H_{10}O_2$

Answer: A

Watch Video Solution

50. The empirical formula of an acid is CH_2O_2 the probable molecular formula of the simplest acid may be

A. CH_2O

B. CH_2O_2

C. $C_2H_4O_2$

D. $C_3H_6O_4$

Answer: B

Watch Video Solution

51. In paper chromatography,

A. Moving phase is liquid and stationary phase is solid

B. Moving phase is liquid and stationary phase is liquid

C. Moving phase is solid and stationary phase is solid

D. Moving phase is solid and stationary phase is solid

Answer: B

Watch Video Solution

52. If $0.765g$ of an acid gives $0.535g$ of CO_2 and $0.138g$ of H_2O, then the ratio of the percentage of C to H is

A. $19:2$

B. $18:11$

C. $70:17$

D. $1:7$

Answer: A

Watch Video Solution

53. Percentage of Se (at. mass 3 78.4) in peroxidase anhydrase enzyme is 0.5% by weight, then minimum molecular mass of peroxidase anhydrase enzyme is

A. 1.568×10^4

B. 1.568×10^3

C. 15.68

D. 2.136×10^4

Answer: A

Watch Video Solution

54. In a hydrocarbon, mass ratio of hydrogen and carbon is 1 : 3, the empirical formula of, hydrocarbon is

A. CH

B. CH_2

C. C_2H

D. CH_4

Answer: D

Watch Video Solution

55. The empirical formula of a compound is CH_2 . One mole of compound has a mass of 42 g, its molecular- formula is

A. CH_2

B. C_2H_2

C. C_3H_6

D. C_3H_8

Answer: C

Watch Video Solution

56. An organic compound containing carbon hydrogen and oxygen contains 52 .2 % carbon and 13.04 % hydrogen .Vapour density of the compound is 23 .Its molecular formula will be

A. C_2H_6O

B. C_3H_6O

C. C_4H_8O

D. $C_5H_{10}O$

Answer: A

Watch Video Solution

57. In a compound C, H, N atoms are present in $9:1:3.5$ by weight. Molecular weight of compound is 108. Its molecular formula is:

A. $C_2H_6N_2$

B. C_3H_4N

C. $C_6H_8N_2$

D. $C_9H_{12}N_3$

Answer: C

Watch Video Solution

58. Empirical formula of a compound is CH_2O and its molecular mass is 90. The molecular formula of the compound is

A. $C_3H_6O_3$

B. $C_2H_4O_2$

C. $C_6H_{12}O_6$

D. CH_2O

Answer: A

Watch Video Solution

59. An organic compound on analysis gave C=39.9 % ,H= 6.7 % and O =53.4 % .The empricial formula of the compound is

A. CHO_2

B. CH_2O

C. $C_2H_2O_2$

D. CHO

Answer: B

Watch Video Solution

60. Which of the following statements is wrong ?

A. Using Lassaignes test nitrogen and sulphur present in an organic compound can be tested

B. Using Beilsteins test, the presence of halogens in a compound can be tested

C. In Lassaignes filtrate, the nitrogen in an organic compound is converted to NaCN.

D. In the estimation of carbon, an organic compound is heated with CaO in a combustion tube.

Answer: D

Watch Video Solution

61. If we want to study the relative arrangement of atoms in a molecule, we study

A. empirical formula

B. molecular formula

C. stuctural formula

D. None of the above.

Answer: C

Watch Video Solution

Watch Video Solution

62. In Victor Meyers method, 0.2 g of an organic substance displaced 56 mL of air at STP.The molecular mass of the compound is

A. 56

B. 112

C. 80

D. 28

Answer: C

Watch Video Solution

63. 116 mg of a compound on vaporisation in a victor Meyer's apparatus displaces 44.8 mL of air measured at S.T.P The molecular mass of the compound is

A. 116

B. 232

C. 58

D. 44.8

Answer: C

Watch Video Solution

64. The compound formed in the positive test for neitrogen with Lassaigne solution of an organic compound

A. $Na_4\left[Fe(CN)_5NOS\right]$

B. $Na_3\left[Fe(CN)_6\right]$

C. $Fe(CN)_6\Big]$

D. $Fe_4\left[Fe(CN)_6\right]_3$

Answer: D

Watch Video Solution

65. 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 NaOH solution for complete neutralisation.The organic compound is

A. Thiourea

B. Benzamide

C. Urea

D. Acetamide

Answer: C

Watch Video Solution

66. Sodium nitoprusside when added to an alkaline solution of sulphide ions produce a

A. red colouration

B. blue colouration

C. pruple colouration

D. brown colouration

Answer: C

Watch Video Solution

67. How will you separate a solution (miscible) of benzene + $CHCl_3$?

A. Sublimation

B. filtration

C. Distillation

D. crystallisation

Answer: C

Watch Video Solution

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

A. Chromatography

B. Crystallization

C. Distillation

D. Sublimation

Answer: B

Watch Video Solution

69. How much of sulphur is present in an organic compound ,if 0.53 g of the compound gave 1.158 g of $BaSO_4$ on analysis ?

A. 0.1

B. 0.15

C. 0.2

D. 0.3

Answer: D

Watch Video Solution

70. 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

Watch Video Solution

71. An organic compound having molecular mass 60 is found to contain $C = 20\,\%$, $H = 6.67\,\%$, and $N = 46.67\,\%$, while rest is oxygen. On heating, it gives NH_3 along with a solid residue. The solid residue gives violet color with alkaline copper sulphate solution. The compounds is

A. CH_3NCO

B. CH_3CONH_2

C. $(NH_2)_2CO$

D. $CH_3CH_2CONH_2$

Answer: C

Watch Video Solution

72. An organic compound weighing $0.31g$ gave $0.444g$ of magnesium pyrophosphate in the estimation of phosphorus by the Carius method. The percentage of P in the compound is

A. 20

B. 60

C. 15

D. 40

Answer: D

Watch Video Solution

73. Fractional distillation is a process by which the separation of different from a liquid mixture is carried out by making use of difference of

A. Freezing point

B. Boiling point

C. Metling point

D. Solubblity

Answer: B

Watch Video Solution

74. $0.1mol$ of a carbonhydrate with empirical formula CH_2O contains $1g$ of hydrogen. What is its molecular formula?

A. $CH_5H_{10}O_5$

B. $C_6H_{12}O_6$

C. C_4H_8 _ (4)

D. $C_3H_6O_3$

Answer: A

Watch Video Solution

75. An organic compound contains carbon, hydrogen and oxygen. Its chemical analysis gave C, 38.71% and H, 9.67%. The empirical formula of compound would be

A. CHO

B. CH_4O

C. CH_3O

D. CH_2O

Answer: C

Watch Video Solution

76. In Lassaigne's test, a blood red colouration with Fe^{3+} ions indicates the presence of

A. Nitrogen

B. Sulphur

C. both nitrogen and sulphur

D. both nitrogen and halgens .

Answer: C

Watch Video Solution

77. The compound formed in the positive test for nitrogen with Lassaigne's solution of an organic compound is

A. $Fe_4\left[Fe(CN)_6\right]_3$

B. $Na_3\left[Fe(CN)_6\right.$

C. $Fe(CN)_3$

D. $Na_4\left[Fe(CN)_5COS\right]$

Answer: A

Watch Video Solution

78. In sodium fusion test of organic compounds, the nitrogen of an organic compound is converted to

A. $NaNO_2$

B. $NaNH_2$

C. NaCN

D. NaNC

Answer: C

Watch Video Solution

Watch Video Solution

79. An organic compound which produces a bluish green colored flame on heating in the presence of copper is

A. Chlorobenzene

B. benzaldehyde

C. aniline

D. benzoic acid .

Answer: A

Watch Video Solution

80. Which of the following complex formation indicates presence of sulphur in the organic compound .When sodium nitroprusside is added to sodium extract of the compound

A. $Fe_4\left[Fe(CN)_6\right]_3$

B. $Na_2Fe(NO)(CN)_5\Big]$

C. $Fe(CNS)_3$

D. $Na_4\left[Fe(CN)_5NOS\right]$

Answer: D

Watch Video Solution

81. Which of the following compounds gives blood red colouration when its Lassaigne's extract is treated with alkali and ferric chloride .

A. Thiourea

B. Diphenyl sulphide

C. Phenylhydrazine

D. Benzamide

Answer: A

Watch Video Solution

82. In the Duma's method of estimation of the organic compound is finaly converted into

A. NO

B. N_2

C. NH_3

D. HNO_3

Answer: A

Watch Video Solution

83. Which of the following compounds will not give Lassaigne's test for nitrogen ?

A. NH_2NH_2

B. $C_6H_5NHNH_2$

C. phN=Nph

D. NH_2CONH_2

Answer: A

Watch Video Solution

84. An organic compound on analysis was found to contain 10.06 % Carbon,0.84 % Hydrogen and 89.10 % Chloride .What will be empirical formula of the substance ?

A. CH_2Cl_2

B. $CHCl_3$

C. CCl_4

D. CH_3Cl

Answer: B

Watch Video Solution

85. In Kjeldahl's method , ammonia from 5 g of food neutralizes $30cm^3$ of 0.1 N acid .The percentage of nitrogen in the food is .....

A. 0.84

B. 8.4

C. 16.8

D. 1.68

Answer: A

Watch Video Solution

86. In Lassaigne's test for the detection of halogen , the sodium fusion extract is first boiled with concentrated nitric acid . This is

A. to remove silver halides

B. to decompose $Na_{2_{\square}}CN$ and NaCN if present

C. to dissolve Ag_2S

D. to dissolve AgCN are if formed

Answer: B

Watch Video Solution

87. In Duma's method,the gas which is collected in Nitromer is 0.35 g of an organic compound gave 55 mL of nitrogen collected at 300 K temperature and 715 mm pressure .The precentage composition of nitrogen in the compound would be :

(Aqueous tension at 300 K= 15 mm)

A. 17.45

B. 14.45

C. 15.45

D. 16.45

Answer: D

Watch Video Solution

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

A. increases the solubility product of AgCl

B. increasing the concentation NO_3, ions

C. decomposes Na_2S and NaCN, if formed

D. helps in the precipitation of AgCl

Answer: C

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89. Kjeldahl method for estimation of nitrogen is not applicable to

A. pyridine

B. hexamethylene diamine

C. Propan-I-amine

D. 2-phenylethanamine.

Answer: A

Watch Video Solution

90. A compound contains 38. 8 % C, 16 % H, 42 5 % N. The formula of compound will be:

A. CH_3NH_2

B. CH_3CN

C. C_2H_5CN

D. $CH_2(NH_2)_2$

Answer: A

Watch Video Solution

91. The positive Lassaigne test for nitrogne of any compound from sodium fusion is due to the formation of

A. $Fe_4\left[Fe(CN)_6\right]_3$

B. $Na_4\left[Fe(NSC)(CN)_5\right]$

C. $Na_4\left[Fe(CN)_6\right]$

D. $Na_4\left[Fe(NOS)(CN)_5\right]$

Answer: A

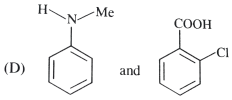
Watch Video Solution

92. Correct pair of compounds which gives blue colouration/precipitate and white precipitate, respectively, when their Lassaigne's test separately

A. NH_2NH_2HCl and $ClCH_2COOH$

B. NH_2CSNH_2 and $phCH_2Cl$

C. NH_2CH_2COOH and NH_2CONH_2

D. 

Answer: D

Watch Video Solution

93. The reaction of nitroprusside anion with sul- phide ion gives purple colouration due to the formation of

A. the tetranionic complex of iron (I1) Coordination to one NOS ion

B. the dianionic complex of iron (II) coordination to one NCS ion

C. the trianionic complex of iron (III) coordination to one NCS ion

D. the tetranionic complex of iron (III) Coordination to one NCS ion

Answer: D

Watch Video Solution

Selected Straight Mcq

1. Absolute alcohol can be prepared from rectified spirit by

A. distillation under reduced pressure

B. azeotropic distillation with benzene

C. Fractional distillation

D. Keeping over fresh CaO for few hours followed by distilling .

Answer: B::D

 Watch Video Solution

2. The empirical formula of a compound is CH_2 . To which of the following series can it belong ?

A. Alkenes

B. Alkynes

C. Alkane

D. Cycloalkanes

Answer: A::D

Watch Video Solution

3. Kjeldhal's method cannot be used for the estimation of nitrogen is

A. $C_6H_5NO_2$

B. $C_6H_5NHCOCH_3$

C. $C_6H_5 - N = N - C_6H_5$

D. Pyridine .

Answer: A::C::D

Watch Video Solution

4. The weight of carbon ,hydrogen and oxygen in an organic compound are in the ratio 6 : 1 : 8 respectively .The molecular formula of compound may be

A. CH_2O

B. $C_3H_6O_3$

C. CH_2O_2

D. $C_2H_4O_4$

Answer: A::B

Watch Video Solution

5. During the test of halogens by silver nitrate test, the sodium extract is first boiled with a few drops of conc. HNO_3 to

A. decompose sodium halides present

B. decompose sodium cyanide if present

C. decompose sodium sulphide if present

D. acidify the sodium extract.

Answer: B::C::D

Watch Video Solution

6. In organic compounds, halogens are estimated

A. Liebig method

B. Duma's method

C. Carius method

D. Schiffs and Piria method.

Answer: C::D

Watch Video Solution

7. For which of the following compounds Lassaigne's test of nitrogen fails ?

A. Nitrobenzene

B. Hydroxylamine

C. Dimethyl lamine

D. Hydrazine

Answer: B::D

Watch Video Solution

8. A clear solution is heated in a china dish where upon a solid separates from the hot solution. It is due to the fact that

A. the solid has a positive enthalpy of solution

B. the solid has a negative enthalpy of solution

C. solvent has evaporated

D. the solute is volatile.

Answer: A::C

Watch Video Solution

9. For which of the following ,the Lassaigne's test for nitrogen will not be positve ?

A. Nitrobenzene

B. Urea

C. Diazene

D. Ethanamide.

Answer: C

Watch Video Solution

10. Steam distillation is used for the extraction of

A. Fatty acids

B. Higher alkanes

C. Mineral oils

D. Essential oils

Answer: D

Watch Video Solution

11. A mixture of o-nitrophenol and p- nitrophenol can be separated by

A. Fractional crystallisation

B. sublimation

C. Chemical disttillation

D. steam distillation

Answer: D

Watch Video Solution

Watch Video Solution

12. A compound which does not give positive test in the Lassaignes' test for nitrogen is

Watch Video Solution

13. If two compounds have the same empirical formula but different molecular formulae they must have

A. Different percentage composition

B. different molecular weights

C. same viscosity

D. same vapour pressure

Answer: B

14. Carbon and hydrogen are estimated by

A. Leibig method

B. Duma's method

C. Carius method

D. Kjeldahl's method

Answer: A

Watch Video Solution

15. For which of the following compounds Lassaignes' test of notrogen will fail ?

A. $H_2NCONH.NH_2.HCl$

B. $H_2NNH_2.HCl$

C. H_2NCONH_2

D. $C_6H_5-N=N-C_6H_5$

Answer: B

Watch Video Solution

Linked Comprehension Mcq

1. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both

nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium molybdate.

An organic compound containing N, S and O as extra elements is fused with sodium metal and then extracted with water. The species which is not present in the solution of the extract is

A. CN_-

B. CNS^-

C. NO_3^-

D. S^{2-}

Answer: C

Watch Video Solution

2. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic

compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium molybdate.

Which of the following compound will answer Lassigne's test for nitrogen ?

A. NH_2NH_2

B. NaCN

C. $NaNO_3$

D. NH_4Cl

Answer: B

Watch Video Solution

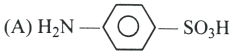
3. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium

molybdate.

Which of the following will give blood red colour in Lassaigne's test for nitrogen

A. 

B. $(NH_2)_2C = O$

C. $C_6H_5SO_3H$

D. $(NH_4)_2SO_4$

Answer: A

Watch Video Solution

4. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose

Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium molybdate.

During detection of phosphours in an organic compound,yellow precipitate are formed due to the formation of

A. $(NH_4)_3PO_4$

B. $(NH_4)_2MoO_4$

C. $MgNH_4PO_4$

D. $(NH_4)_3PO_4.12moO_3$

Answer: D

Watch Video Solution

5. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test

blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium molybdate.

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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6. Here paragraphs are given. Based upon the paragraphs some multiple choice questions are given. Each question has 4 choices A, B, C and D. Out of which one is correct. Choose the correct option

Paragraph/comprehension

In the detection of elements by Lassaigne's test, the covalent compounds are converted into ionic

compounds on fusion with sodium metal. The nitrogen, sulphur and halides present in the organic compounds are test with their usual tests. In this test blue or green colour is obtained when only nitrogen is present whereas red colour is obtained when both nitrogen and sulphur are present. The Lassaigne's extract is boiled with HNO_3 so as to decompose Na_2 and NaCN if present. Phosphorus is detected in the organic compound by fusing it with sodium peroxide. When sodium phosphate formed is detected with cone. HNO_3 and ammonium molybdate.

The Lassaigne's extract is boild with dil. HNO_3 before testing for halogens because

A. silver halides are insoluble in HNO_3

B. Na_2S and NaCN are decomposed by HNO_3

C. Ag_2S is soluble in HNO_3

D. AgCN is solbule in HNO_3

Answer: B

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Matrix Match Type Mcq

1. Here each question contain statements given in two columns which have to be matched. Statements in

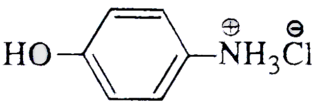
column I are labelled as A. B, C and D where as the statements in the column II are labelled as p, q, r and s. The answers to these questions are to be appropriately bubbled as illustrated below.

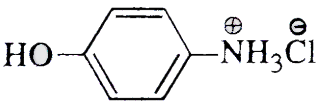
If the correct matches are A-p, A-s, Bq, B-r, C-p, C-q and D-s. Then correctly labelled 4×4 matrix should look

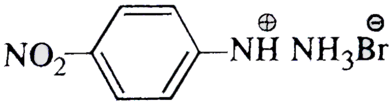
like the following

1. **Column I** **Column II**

A $H_2N-\overset{\oplus}{N}H_3\overset{\ominus}{Cl}$

B. 

C. 

D. 

p Sodium fusion extract of the compound gives prussian blue colour with $FeSO_4$

q Gives positive $FeCl_3$ test

r Gives white precipitate with $AgNO_3$

s Reacts with aldehydes to form corresponding hydrazone derivative

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Reason Assertion Type Mcq

1. Assertion (A) The Duma's method is of more general application to nitrogen containing organic compounds than the Kjeldahl's method.

Reason (R) The Kjeldahl's method does not give satisfactory results for eompomds in which nitrogen is directly linked to oxygen.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: B

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2. Assertion (A) Mixed melting point can be used to test the purity of an organic compound.

Reason (R) Impurities raises the melting point of the organic compound.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: C

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3. Assertion (A) o-and p-nitrophenol can be separated by steam distillation.

Reason (R) o-Nitrophenol is steam volatile whereas p-nitrophenol is not steam volatile.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: A

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4. Assertion (A) Impure glycerine is purified by vacuum distillation.

Reason (R) Glycerine is soluble in water.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: B

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5. Assertion (A) Criteria of purity of a liquid o'rganic compound is its boiling point.

Reason (R) An organic compound has a fixed and sham boiling point.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: A

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6. Assertion (A) Hydrazine contains nitrogen but does not give Lassaigne's test for nitrogen.

Reason (R) Hydrazine reacts with acetone to form corresponding aldimine.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: C

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7. Assertion (A) Aniline is purified by steam distillation.

Steam distillation is used for purification of substances which are insoluble in water but volatile in steam.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: A

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8. Assertion (A) Nitrogen is detected in nitro and diazo compounds by soda lime test.

Reason (R) Organic compounds containing 'nitrogen when heated with soda lime (NaOH+CaO) usually give smell of ammonia.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: D

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9. Assertion (A) Appearance of blue or green colour in the name in Beilstein test indicates the presence of halogen in the given organic compound.

Reason (R) Certain compounds such as urea or thio

urea respond to Beilstein test even in the absence of halogen.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: B

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10. Assertion (A) Naphthalene, anthracene, benzoic acid, camphor and other such substances which sublime can be purified from other substances by sublimation.

Reason (R) There are certain substances which decompose when sublimed under ordinary pressure.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not a correct explation of A

C. A is true but R is false

D. A is false but R is true

Answer: B

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Ultimate Preparatory Package

1. The molecular mass of a compound containing only one nitrogen atom can be

A. 63

B. 64

C. 164

D. 630

Answer: A

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2. A gaseous hydrocarbon with empirical formula CH_2 has a density of 12.5 g gL^{-1} at N.T.P The molecular formula of the compound is

A. C_2H_2

B. C_6H_6

C. C_2H_4

D. C_3H_6

Answer: C

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3. The haemoglobin contains 0:33% iron by weight. Its molecular mass is 67200. The number of iron atoms in one molecule of haemoglobin are (At. mass of Fe-56)

A. 2

B. 3

C. 4

D. 5

Answer: C

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4. The density of a gaseous organic compound is $1.3 \times 10^{-3} gmL^{-1}$ at N.T.P. Its vapour densit

A. 0.00065

B. 0.65

C. 14.4816

D. 14.56

Answer: D

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5. 9 " mL of " a mixture of methane and ethylene was exploded with 30 mL (excess) of oxygen. After cooling, the volume was 21.0 mL. Further treatment with caustic potash solution reduced the volume to 7.0 mL. Determine the composition of the mixture.

A. 5 mL of $CH_4 + 4mLofC_2H_4$

B. 4 mL of $CH_4 + 5mLofC_2H_4$

C. 3 mL of $CH_4 + 6mLofC_2H_4$

D. 6 mL of $CH_4 + 3mLofC_2H_4$

Answer: B

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6. A compound which does not give a positive test in Lassaigne's test for nitrogen is:

A. Sodium cyanide

B. Hydroxyl amine

C. Hydrazine

D. Ammonia

Answer: A

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7. An organic compound contains, C, H and S. The minimum molecular weight of the compound containing 8% sulphur is :

$(\text{atomic weight of} S = 32\text{amu})$

A. 200

B. 400

C. 800

D. 600

Answer: C

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8. If $0.24g$ of a volatile liquid upon vaporization gives $45ml$ of vapors at NTP, what will be the vapor density of the substance? (Density of $H_2 = 0.089fL^{-1}$)

A. 95.39

B. 39.95

C. 99.53

D. 59.93

Answer: D

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9. A saturated hydrocarbon contains 82.66% carbon. Its molecular formula is

A. C_2H_6

B. C_3H_{18}

C. C_4H_{10}

D. C_2H_5

Answer: c

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10. A purified pepsin was subjected to amino acid analysis. The amino acid present in smallest amount

was lysine, $C_6H_{14}N_2O_2$ and the amount of lysine was found to be 0.43 g per 100 g of protein. The minimum molecular mass of protein is

A. 34000

B. 14600

C. 43000

D. None to these.

Answer: A

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11. Thiophene can be removed from commercial benzene by

A. Shaking with NaOH solution

B. Shaking with ether

C. Shaking with conc. H_2SO_4.

D. Steam Distillation.

Answer: C

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12. An organic compound is extracted from its aqueous solution with 100 mL of chloroform. The extraction will be maximum when

A. 100 mL of chloroform is used in one litre

B. two 50 mL portions of chloroform are used

C. four 25 mL portions of chloroform are used

D. ten 10 mL portions of chloroform are used. can be removed from commercial

Answer: D

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13. Positive Beilstein test for halogen shows that

A. pyridine

B.

C. halogen

D. all the above .

Answer: D

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14. A disbasic acid containing C, H, and O was found to contain $C = 26.7\,\%$ and $H = 2.2\,\%$. The vapor

density of diethyl ester was found to be 73. What is the molecular formula of the acid?

A. $C_2H_2O_4$

B. $C_4H_4O_4$

C. $C_3H_3O_4$

D. none of the these

Answer: A

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15. An organic compound has C and H percentage in the ratio 6:1 and C and O percentage in the 3:4. The

compound is

A. HCHO

B. CH_3OH

C. CH_3CH_2OH

D. $(COOH)_2$

Answer: A

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