CHEMISTRY

BOOKS - UNIVERSAL BOOK DEPOT 1960 CHEMISTRY (HINGLISH)

Practical Organic Chemistry

Ordinary Thinking Chemical Analysis Of Organic Compounds

1. 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. $C_2H_7N_2$

B. CH_5N

C. CH_4N

D. C_2H_7N

Answer: C

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2. The decomposition of organic compounds, in the presence of oxygen without the development of odoriferous substances , is called

A. Decay

B. N_2 fixation

C. Nitrification

D. Denitrification

Answer: A

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3. Empirical formula of a compound is CH_2O and its vapour density is 30. Molecular formula of the compound is

A. $C_3H_6O_3$

B. $C_2H_4O_2$

C. C_2H_4O

D. CH_2O

Answer: B

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

A. Chromatography

B. Crystallisation

C. Distillatoin

D. Sublimation

Answer: B

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5. The LaSSaigen's extract is boiled with conc. HNO_3 while testing for halogens. By doing so it :

A. Increase the concentration of NO_3^-

B. Decomposes $Na_2S$and $NaCN$, if formed

C. Helps in the precipitation of $AgCl$

D. Increase the solubility product of $AgCl$

Answer: B

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

A. 18.20

B. 16.76

C. 15.76

D. 17.36

Answer: B

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7. If a compound on analysis was found to contain $C = 18.5\,\%$, $h = 1.55\,\%$, $Cl = 55.04\,\%$ and $O = 25.81\,\%$, then its empirical formul is

A. $CHClO$

B. CH_3ClO

C. C_2H_2Ocl

D. $ClCH_2O$

Answer: A

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8. The pair of species having same percentage of carbon is:

A. CH_3COOH and C_2H_5OH

B. $C_6H_{12}O_6$ and $C_{12}H_{22}O_{11}$

C. $HCOOCH_3$ and $C_{12}O_{22}O_{11}$

D. CH_3COOH and $C_6H_{12}O_6$

Answer: D

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

A. Chemical method

B. Sublimation

C. Fractional distillation

D. Extraction with a solvent

Answer: A

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10. A compound $(80g)$ on analysis gave $C = 24g, H = 4g, O = 32g.$ Its empirical formula is

A. $C_2H_4O_2$

B. C_2H_2O

C. CH_2O_2

D. CH_2O

Answer: D

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11. An organic compound containing $C = 38.8\,\%$, $H = 16\,\%$ and $n = 45.2\,\%$. Empirical formula of the compound is

A. CH_3NH_2

B. CH_3CN

C. C_2H_5CN

D. $CH_2(NH)_2$

Answer: A

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12. $0.2595g$ of an organic substance in a quantitative analysis yielded $0.35g$ of the barium sulphate. The percentage of sulphur in the subtance is

A. $18.52g$

B. $182.2g$

C. $17.5g$

D. $175.2g$

Answer: A

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13. Violet coloured complex obtained in the detection of sulphur is:

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

B. $Na_3\left[Fe(CN)_5NOS\right]$

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

D. $Na_2\left[Fe(CN)_5NO\right]$

Answer: A

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

A. Oxidising agent

B. Reducing agent

C. Hydrolysing agent

D. Catalytic agent

Answer: D

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

A. Sublimation

B. Filtration

C. Distillation

D. Crystallisation

Answer: C

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16. Styrene can be purified by:

A. Simple distillation

B. Fractional distillation

C. Steam distillation

D. Vacuum distillation

Answer: D

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17. $p-$ nitrophenol and $o-$ nitrophenol are separated by

A. Crystallisation

B. Fractional crystallisation

C. Distillation

D. Steam distillation

Answer: D

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

A. Fractional distillation

B. Chromatography

C. Vacuum distillation

D. Crystallisation

Answer: B

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19. The presence of halogen, in an organic compounds, is detected by

A. Iodoform test

B. Silver nitrate test

C. Beilstein test

D. Millon's test

Answer: C

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20. Accurate determination of atomic masses is done with the instrument called as

A. Spectrophotometer

B. Mass spectrometer

C. Atomic absorption spectrometer

D. Calorimeter

Answer: B

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21. Chromatography is a valuable method for the separation, isolation, purification and identification of the constituents of a misture and it is based on general principle of

A. Phase rule

B. Phase distribution

C. Interphase separation

D. Phase operation

Answer: A

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22. To differentiat between C-12, C-13 and C-14 the instrument that you would use is

A. Infra-red spectrometer

B. Atomic absorption spectrometer

C. Mass spectrometer

D. Ultraviolet spectrometer

Answer: C

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23. Lassigne's test is used to detect

A. Nitrogen and halogens

B. Sodium and halogens

C. Halogensand sulphur

D. All the above

Answer:

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24. Victor Meyer's method, $0.2g$ of an organic substance displaced $56ml$ of air at STP. The molecular weigth of the compound of

A. 56

B. 112

C. 80

D. 28

Answer: C

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25. A compound has an empirical formula C_2H_4O. An independent analysis gave a value of 132.16 for its molecular mass. What is the correct molecular formula

A. $C_4H_4O_5$

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

C. C_7O_3

D. $C_6H_{12}O_3$

Answer: D

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26. When 32.25 g of ethyl chloride is subjected to dehydrohalogenation reaction, the yield of alkene formed is 50%.

The mass of the product formed is (atomic mass of Cl = 35.5)

A. 14 gm

B. 28 gm

C. 64.5 gm

D. 7 gm

Answer:

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27. The prussian blue colour obtained in the Lassaigne's test for nitrogen is due to formation of :

A. Iron (II) hexacyanoferrate (III)

B. Iron (III) hexacyanoferrate (II)

C. Iron (III) hexacyanoferrate (III)

D. Iron (II) hexacyanoferrate (II)

Answer: B

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28. Two oraganic compounds X and Y on analysis gave the same percentage composition , namely, $C = (12/13) \times 100\,\%$ and bromine water while compound Y does not. The two compounds X and Y may be respectively.

A. Acetylene and ethylene

B. Acetylene and benzene

C. Ethylene and benzene

D. Toluene and benzene

Answer: B

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29. 29.5 mg of an organic compound containing nitrogen was digested according to Kjeldahl's method and the evolved ammonia was absorbed in 20mL of 0.1M HCL solution. The excess of the acid required 15 mL of 0.1 M 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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30. How much sulphur is present in organic compound if on analysis $0.53g$ of this compound gives $1.158g$ of $BaSO_4$

A. $10\ \%$

B. $15\ \%$

C. $20\ \%$

D. $30\ \%$

Answer:

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31. 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

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32. Which one of the following reagents is used for detection of unsaturation in alkenes

A. $NaOH + CaO$

B. Cold dilute alkaline $KMnO_4$

C. Cl_2 / hv

D. KOH / C_2H_5OH

Answer: B

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33. Precentage composition of an organic compounds is as follows, $C = 10.06, H = 0.84, Cl = 89.10.$ Which of the following corresponds to its molecular formula if the vapour density is 60.0

A. CH_2Cl_2

B. $CHCl_2$

C. CH_3Cl

D. None of these

Answer: B

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34. In Lassaigne 's test , the organic compound is fused with sodium metal . Which of the following is NOT the possible product of this fusion reaction ?

A. NaX

B. $NaCN$

C. $NaNC$

D. Na_2S

Answer: C

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35. The estimation of available chlorine in bleaching powder is done by

A. Acid-base titration

B. Permagnometric titration

C. Iodimetric titration

D. Iodometric titration

Answer: D

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36. The purification of a organic compound is varified with

A. Melting point

B. Molecular weight

C. Density

D. Solubility in water

Answer: A

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37. An organic compound on analysis gave $C = 48g$, $H = 8g$ and $N = 56g$. Volume of $1.0g$ of the compound was foud to be $200ml$ at

NTP. Molecular formula of the compound is

A. $C_4H_8N_4$

B. $C_2H_4N_2$

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

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

Answer: A

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38. Indulin contains 3.4% suplhur.The minimum molecular mass of insulin is:

A. 350

B. 470

C. 560

D. 940

Answer: D

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39. 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. Urea

B. Benzamide

C. Acetamide

D. Thiourea

Answer: A

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40. An organic veolved from the treatement of $0.30g$ ofan organic compound for the estimation for the of nitrogen was passed in $100ml$of $0.1M$ sulphuric acid. The excess of acid required 20ml of $0.5M$ sodium hydroxide solution for complete neutralization . The organic compound is

A. CH_3NXO

B. CH_3CONH_2

C. $(NH_2)CO$

D. $CH_3CH_2CONH_2$

Answer: C

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41. Nitrating mixture is

A. Fuming nitric acid

B. Mixture of conc. H_2SO_4 and HNO_3

C. Mixture of nitric acid and anhydrous zinc chloride

D. None of these

Answer: B

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42. Which of the substance is purified by sublimation?

A. Benzoic acid

B. Camphor

C. Naphthalene

D. All of these

Answer: D

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43. The percentage of nitrogen in urea is about:

A. 18.05

B. 28.29

C. 46.66

D. 85.56

Answer: C

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44. Chromatography is used for the purification of

A. Solids

B. Liquids

C. Gases

D. All of these

Answer: D

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

A. Chlorobenzene

B. Benazaldehyde

C. Aniline

D. Benzoic acid

Answer: A

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46. The one which has least iodine value is

A. Gingeroil

B. Ghee

C. Groundnut oil

D. Sunflower oil

Answer: B

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47. 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

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48. An organic compound made of C, H and N contains 20% of nitrogen. Its molecular weight is

A. 70

B. 140

C. 100

D. 65

Answer: A

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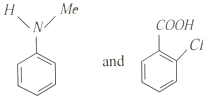
49. Correct pair of compounds which gives blue colouration/precipitate and white precipitate, re- spectively, when their Lassaigne's test separately

A. $NH_2NH_2.HCl$ and $ClCH_2COOH$

B. NH_2CSNH_2 and $PhCH_2Cl$

C. NH_2CH_3COOH and NH_2CONH_2

D. (d)  and

Answer: D

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

A. Empirical formula

B. Molecular formula

C. Structural formula

D. None of these

Answer: C

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51. 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. Phenyl hydrazine

D. Benzamide

Answer: A

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52. Which of the following is the best scientific method to test the presence of water in liquid ?

A. Use of anhdrous copper sulphate

B. Use of litmus paper

C. Taste

D. Smell

Answer: A

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53. In the estimation of sulphur organic compound on treating with conc. HNO_3 is converted to

A. SO_2

B. H_2S

C. H_2SO_4

D. SO_3

Answer: C

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54. In Carius method, $0.099g$ organic compound gave $0.287gAgCl$. The percentage of chlorine in the compound will be

A. 28.6

B. 71.7

C. 35.4

D. 64.2

Answer: B

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55. $58ml$ of $\frac{N}{5}H_2SO_4$ are used to neutralize ammonia given by 1 g of organic compound. Percentage of nitrogen in the compoundis

A. 34.3

B. 82.7

C. 16.2

D. 21.6

Answer: C

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56. Assertion : Potassium can be used in Lassaigne test.

Reason : Potassium reacts vigorously.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer:

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57. Assertion : During test for nitrogen with Lassaigne extract on adding $FeCl_3$ solution sometimes a red precipitate is obtained.

Reason : Sulphur is also present.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: A

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58. Assertion: Magnetic resonance imaging (MRI) is a useful diagnostic tool for producing images of various parts of human body.

Reason: Protons of various tissues of the human body play a role in MRI.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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59. (A) Oils are purified by steam distillation.

(R) The compounds which decompose at their boiling points can be purified by steam distillation.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: C

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60. Assertion : Moving phase is liquid and stationary phase is solid in paper chromatography.

Reason : Paper chromatography is used for analysis of polar organic compounds.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If assertion is false but reason is true.

Answer:

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61. Assertion : During digestion with concentrated H_2SO_4, Nitrogen of the organic compound is converted into $(NH_4)_2SO_4$.

Reason : $(NH_4)_2SO_4$On heating with akali liberatesNH_3.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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62. Assertion : Thiophene present in commercial benzene as an impurity can be removed by shaking the mixture with cold concentrated H_2SO_4.

Reason : Thiophene is a heterocyclic aromatic compound.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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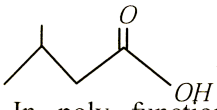
63. Assertion :

Assertion :  is 3-methyl butanoic acid.

Reason : In poly functional group, the substituent should be given lower number than the principal functional group.

is 3-methyl butanoic acid.

Reason : In poly functional group, thesubstituent should be given lower number than the principal functional group.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: C

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64. Assertion : Refining of petroleum involves fractional distillation.

Reason : Fractional distillation involves repeated distillation.

A. If both assertion and reason are true and the reason is the correct explanation of the assertion.

B. If both assertion and reason are true but reson is not the correct explanation of the assertion.

C. If assertion is true but reason is false.

D. If the assertion and reason both are false.

Answer: B

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Critical Thinking Objective Questions

1. Lassaigne's test for the detection of nitrogen fails in

A. $NH_2CONHNH_2.HCl$

B. $NH_2NH_2.HCl$

C. NH_2CONH_2

D. $C_6H_5NHNH_2.HCl$

Answer: B

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2. Camphor is often used in molecular mass determination because

A. It is volatile

B. It is a good solvent for organic substances

C. It is readily avilable

D. It has a vary high cryoscopic constant

Answer: A

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3. In Dumas' method of estimation of nitrogen $0.35g$ of an organic compound gave $55mL$ of nitrogen collected at $300K$ temperature and $715mm$ pressure. The percentage composition of nitrogen in the compound would be : (Aqueous tension at $300K = 15mm$)

A. 14.45

B. 15.45

C. 16.45

D. 17.45

Answer: C

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4. If $0.228g$ of silver salt of dibasic acid gabe a residue of $0.162g$ of silver on ignition then molecular weight of the acid is

A. 70

B. 80

C. 90

D. 100

Answer: C

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5. The reagent used for the separation of Acetadehyde from acetophenone is

A. NH_2OH

B. $NaOH_2$

C. $NaHSO_3$

D. $C_6H_5NHNH_2$

Answer: C

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6. 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

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7. A gas mixture contains 50% helium and 50% methane by volume. What is the percent by weight of methane in the mixture.

A. 19.97%

B. 20.05%

C. 50%

D. 80.03%

Answer:

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8. 0.0833mol of carbohydrate of empirical formula CH_2O contain $1g$ 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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9. Im Kjedahl's method, the nitrogen present in the organic compound is quantitatively converted into

A. Gaseous ammonia

B. Ammonium sulphate

C. Ammonium phosphate

D. Ammonia

Answer: D

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10. How many $H-$ atoms are present in $0.046g$ of ethanol ?

A. 6×10^{20}

B. 1.2×10^{21}

C. 3×10^{21}

D. 3.6×10^{21}

Answer: D

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11. A gas is found to have a formula $[CO]_x$. If its vapour density is 70, then value of x is

A. 2.5

B. 3

C. 5

D. 6

Answer: C

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

A. The tetranionic complex of iron (II) coordinating to one NOS^- ion

B. The dianionic complex of iron (II) coordinating to one NOS^- ion

C. The trianionic complex of iron (III) coordinating to one NOS^- ion

D. The tetranionic complex of iron (III) coordinating to one NCS^- ion

Answer: A

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13. Automatic estimation of elements in organic compound is done by

A. ENT-analyser

B. CHN-analyser

C. MRI-analyser

D. X-ray-analyser

Answer: B

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Jee Ssection Only One Choice Correct Answer

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

A. Different percentage composition

B. Different molecular weight

C. Same viscosity

D. Same vapour density

Answer: B

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2. An organic compound $\%$ of C and % of H in the ratio $6:1$ and $\%$ of C and % of O in the ratio $3:4$. The compound is

A. $HCHO$

B. CH_3OH

C. CH_3CH_2OH

D. $(COOH)_2$

Answer: A

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3. Compound A (molecular formula C_3H_8O) is treated with acidified potassium dichromate to form a product B (molecular formula C_3H_6O) . B forms a shining silver mirror on warming with ammonical silver nitrate , B when treated with an aqueous solution of $NH_2NHCONH_2$ and sodium acetate gives a product C . identify the structure of C .

A. $CH_3CH_2CH = \mathbb{N}NHCONH_2$

B. $CH_3 - \underset{\underset{CH_3}{|}}{C} = \mathbb{N}HCONH_2$

C. C_3H_4O

D. C_4H_8O

Answer: A

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4. An organic compound on analysis gave the following results : $C = 54.5\,\%$, $O = 36.4\,\%$ $H = 9.1\,\%$. The empirical formula of the compound is ____.

A. C_2H_4

B. C_3H_4O

C. C_3H_4O

D. C_4H_8O

Answer: B

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5. 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_2H_4

B. C_3H_4

C. C_6H_5

D. C_7H_8

Answer: D

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6. For the estimation of nitrogen, 1.4 g of an organic compound was digested by Kjeldahl method and the evolved ammonia acid absorbed in 60 mL of $\frac{M}{10}$ sulphuric acid. The unreacted acid required 20 mL of $\frac{M}{10}$ sodium hydroxide for complete neutralization. the percentage of nitrogen in the compound is

A. $6\ \%$

B. $10\ \%$

C. $3\ \%$

D. 5%

Answer: B

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7. Which of the following will give blood red colour with $FeCl_5$ in sodium extract?

A. NH_3CONH_2

B. NH_2CSNH_2

C. $C_6H_5NHNH_2$

D. $CH_3C = N$

Answer: B

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8. A mixture of acetone and CCl_4 can be separated by

A. Azoeotropic distillation

B. Fractional distillation

C. Steam distillation

D. Vacuum distillation

Answer: B

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9. Phenol and benzoic acid is separated by :

A. $NaHCO_3$

B. $NaOH$ solution

C. $FeCl_3$ solution

D. All of these

Answer: A

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10. Anthracene can be purified by

A. Distillation

B. Sublimation

C. Filtration

D. Fractional distillation

Answer: B

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11. KOH can be used as drying agent for

A. Amines

B. Phenols

C. Acids

D. Esters

Answer: A

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12. Silver salt method is used to determine molecular weight of

A. Organic acids

B. Organic bases

C. Both acids and bases

D. None of these

Answer: A

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13. Which of the following observations is correct and is used in the identification of carboxylic acids

A. Carboxylic acids liberates CO_2 gas from $NaHCO_3$ solution

B. They produce fruity smell of esters when heated with alcohol in presence of conc. H_2SO_4.

C. Both (a) and (b)

D. Iodoform test

Answer: C

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14. An organic compound is heated with HNO_2 at $0^\circ C$ and then the resulting solution is added to a solution of β-naphthol whereby a brilliant red dye is produced. The observations indicate that the compound possesses.

A. $-NO_2$ group

B. $-CONH_2$ group

C. Aromatic NH_2 group

D. Aliphatic NH_2 group.

Answer: C

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15. An organic compound contains C, H, N, S and Cl. For the detection of chlorine the sodium extract of the compound is first heated with a few dropsof concentrated HNO_5 and then $AgNO_3$ is

added to get a white ppt of $AgCl$. The digestion with HNO_3 before the addition of $AgNO_3$ is

A. To prevent the formation of $AgNO_3$ is

B. To create a common ion effect

C. To convert CN^- and S^{2-} to volatile $HCN$and H_2S, or else they will interfere with the test forming $AgCN$ or Ag_2S.

D. To prevent the hydrolysis of $NaCN$ and Na_2S

Answer: C

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16. Aniline can be separated from phenol using

A. Na_2CO_3

B. $NaNO_2 + HCl$ at $0^\circ C$

C. $NaCl$

D. Acidified $KMnO_4$

Answer: B

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17. Thiophene can be removed from commercial benzene by

A. Shaking it with mixture of conc. HNO_3 and H_2SO_4

B. Shaking it with mixture of conc. HNO_3 and H_2SO_4

C. Distillation under reduced pressure

D. Steam distillation

Answer: B

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18. In the Kjeldahl's method, the nitrogen in the organic compound is converted to

A. NH_4Cl

B. $(NH_4)_2SO_4$

C. NH_4NO_3

D. NH_3

Answer: B

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19. The molecular mass of an organic compound which contains only one nitrogen atom can be

A. 41

B. 76

C. 146

D. 152

Answer: A

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20. An organic compound having carbon, hydrogen andsulphus contsains 4% of sulphur. The minimum molecular weight of the compound is

A. 200

B. 400

C. 600

D. 800

Answer: D

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21. $0.46g$ ofan organic compound containing C,H oxygen was heated stronglyin steam of N_2 gas . The gaseous mixture thus obtained was passed over heated coke at $1373K$ and then passed through warm solution of iodine pentoxide when $2.54g$ of iodine. The percentage of O_2 in the compound is

A. 69.59

B. 34.78

C. 47.38

D. 38.47

Answer: A

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22. A hydrocarbon has density $1.25gL^{-1}$ at STP . The hydrocarbon is

A. C_2H_4

B. C_2H_2

C. C_2H_6

D. C_3H_6

Answer: A

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Jee Ssection More Than One Choice Correct Answer

1. The products of reaction of alcoholic silver nitrite with enthyl bromide are

A. Ethane

B. Ethene

C. Nitroethane

D. Ethyl nitrite

Answer: C

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2. A positive carbylamine test is given by:

A. N, N-dimethylaniline

B. 2, 4-dimethylaniline

C. N-methyl - o - methylaniline

D. p-methylbenzylamine

Answer: B::D

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3. In Lassaigne's test, the organic compoundis first fused with sodium metal. The sodium is used because.

A. The melting point of sodium metal is low

B. sodium metal reacts with elements present in organic compounds to form inorganic compounds.

C. All sodium salts are solubleiin water

D. All sodium salts are soluble in water

Answer: A::B::C

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4. Molecular weight of acids can be determined by

A. Silver salt method

B. Volumetric method

C. Plants chloride method

D. Victor mayer's method

Answer: A::B

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5. Ethanol and ethanal are distinguished by

A. Fehling's solution test

B. Tollen's reagent test

C. Iodoform test

D. Cerric ammonium nitrate

Answer: A::B::D

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6. Which of the following statements are correct

A. An organic compound is pure if mixed melting point is same

B. Ethanol and water can be separated by azetropic distillation because if forms azotrope

C. Impure aniline is purified by steam distillation as it is steam volatile

D. Glycerol is purified by vacuum, distillation it decomposes at its normal boiling point

Answer: A::B::C::D

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7. Which of the following will respond to iodoform test

A. $CH_3 - \overset{\overset{O}{||}}{C} - COOH$

B. $CH_3 - \overset{\overset{OH}{|}}{C}H - COOH$

C. $CH_3 - \overset{\overset{OH}{|}}{C}H - CH_3$

D. CH_3CH_2OH

Answer: A::B::C::D

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8. Which of the following will not show iodoform test

A. $CH_3 - \overset{\overset{O}{||}}{C} - CH_3$

B. $CH_3 - \overset{\overset{O}{||}}{C} - Cl$

C. $CH_3 - \overset{\overset{O}{||}}{C} - NH_2$

D. $CH_3 - COOH$

Answer: B::C::D

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9. $HCOOH$ and CH_3COOH can be distinguished by

A. Tollen's reagent

B. Fehling's solution

C. $KMnO_4$

D. $NaHCO_3$

Answer: A::B::C

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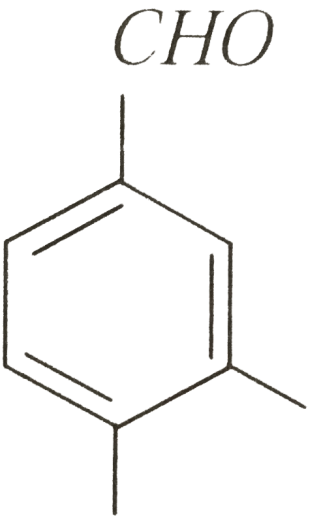
10. An organic compound has the structure



. It will give

A. Cerric ammonium nitrate test

B. Give brisk effervescence with sodium bicarbonate

C. It will give a characteristic colouration with neutral ferric chloride after decarboxylation and reduction by Clemmenson's method

D. It will give Fehling's test

Answer: B::C

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11. The desiccants used for absorbing water during Liebig's method for estimation of carbon and hydrogen are

A. Anhydrous $CaCl_2$

B. Anhydrous Na_2SO_4

C. $Mg(ClO_4)_2$

D. $MgSO_4.7H_2O$

Answer: A::C

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12. Which of the following organic compounds will give white precipitate with $AgNO_3$?

A. $C_6H_5NH_3^+Cl^-$

B. $NaCl$

C. $2, 4, 6$-trinitrochlorobenzene

D. Benzyl chloride

Answer: A::B::C::D

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13. Which of the following reactions occur during the detection of nitrogen in organic substances by Lassaigne's test

A. $Na + C + N \rightarrow CaCN$

B. $FeSO_4 + 6NaCN \rightarrow Na_4\left[Fe(CN)_6\right] + Na_2SO_4$

C.

$$3Na_4\left[Fe(CN)_6\right] + 2Fe(SO_4)_3 \rightarrow Fe_4\left[Fe(CN)_6\right]_3 + 6Na_2SO_4$$

D. None of these

Answer: A::B::C

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14. Acetic acid and CH_3COCl can be distinguished by

A. $NaHCO_3$ test

B. Na metal test

C. Ester formation est

D. Br_2 (aq) test

Answer: A::B

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15. Chromatographic technique can be used for separation of

A. Volatile solids

B. Amino acids

C. Plant pigments

D. Sugars

Answer: B::C::D

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16. An organic compound contain 54% carbon. It could be

A. Ethanol

B. Dimethyl ether

C. diethyl ether

D. Acetic acid

Answer: A::B

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