GMR Classes

CHEMISTRY ASSIGNMENT -GOC , STOICHIOMETRY

NOT PUBLISHED

Total Marks : 140.0
Duration : 1:00 hrs

Chemistry XI

1. Which is larger quantity ?

(A) Mega

(B) Femto

(C) Milli

(D) Giga

2. Sulphur trioxide is prepared by the following two reactions $S_{8(s)} + 8O_{2(g)} \rightarrow 8SO_{2(g)}$, $2SO + O_{2(g)} \rightarrow 2SO_{3(g)}$ How many grams of SO_3 are produced form 1 mol of S_8?

(A) 1280.0

(B) 640.0

(C) 960.0

(D) 320.0

3. The number of primary alcohol isomers with the formula $C_4H_{10}O$ is

(A) 1

(B) 2

(C) 3

(D) 4

4. How much volume of 10 volume H_2O_2 required for reduction of 0.1 mole of $KMnO_4$ in acidic medium?

(A) 0.28 litre

(B) 0.56 litre

(C) 5.6 litre

(D) 0.056 litre

5. A mixture of $CaCl_2$ and NaCl weighing 4.44 g is treated with sodium carbonate solution to precipitate all the Ca^{2+} ions as calcium carbonate. The $CaCO_3$ so obtained is heated strongly to get 0.56 g of CaO. The percentage of NaCl in the mixture is

(A) 75

(B) 30.6

(C) 25

(D) 69.4

6. A_1 g of an element gives A_2 g of its oxide. The equivalent mass of the element is

(A) $\frac{A_2 - A_1}{A_1} \times 8$

(B) $\frac{A_2 - A_1}{A_2} \times 8$

(C) $\frac{A_1}{A_2 - A_1} \times 8$

(D) $(A_2 - A_1)8$

7. 4.4 g of CO_2 and 2.24 litre of H_2 at STP are mixed in a container. The total number of molecules present in the container will be:

(A) 6.022×10^{23}

(B) 1.2044×10^{23}

(C) 6.023×10^{26}

(D) 6.023×10^{24}

8. The order of stability of the following carbanions
o-nitro benzyl carbanion(I) m-nitro benzyl carbanion(II)
p-nitro benzyl carbanion(III) Benzyl carbanion (IV)

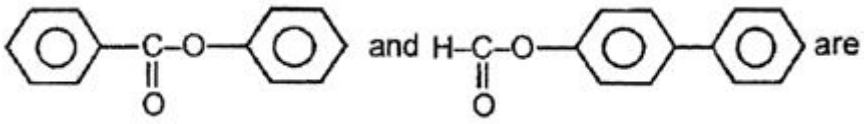
(A) I > II > III > IV

(B) IV > III > II > I

(C) I> III > II > IV

(D) I > II > IV > III

9.



(A) Position isomers

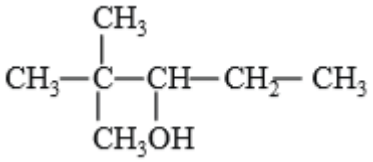
(B) Chain isomers

(C) Functional isomers

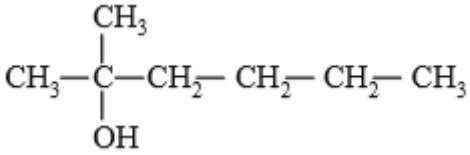
(D) Metameres

10. Neo-heptyl alcohol is correctly represented as

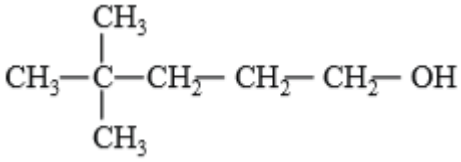
(A)



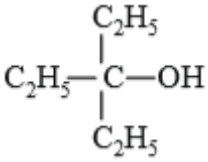
(B)



(C)



(D)



11. Which isomer of C_6H_{14} has two isopropyl groups

(A) 2-Methylpentane (B) 3-Methylpentane

(C) 2,3-Dimethylbutane (D) 2,2-Dimethylbutane

12. The instrument used for measuring specific rotation is

(A) Spectrometer (B) Polarimeter

(C) Lactometer (D) Ammeter

13. Which of the following is not chiral

(A) 3-bromo pentane (B) 2-hydroxy propanoic acid

(C) 2-butanol (D) 2,3-dibromopentane

14. 100 ml of 0.1 NI_2 oxidizes $Na_2S_2O_3$ in 50 ml solution to $Na_2S_4O_6$. The normality of this hypo solution against $KMnO_4$ (which oxidizes it to Na_2SO_4) would be

(A) 0.1 (B) 0.2

(C) 1.0 (D) 1.6

15. 200 ml of 1 M H_2SO_4, 300 ml 3 M HCl and 100 ml of 2 M HCl is mixed and made up to 1 litre. The proton concentration in the resulting solution is

(A) 1.25 M (B) 1.5 M

(C) 2.5 M (D) 0.75 M

16. In Dumas' method of estimation of nitrogen 0.35 g of an organic compound gave 55 mL of nitrogen collected at 300 K temperature and 715

mm pressure. The percentage composition of nitrogen in the compound would be (Aqueous tension at 300 K = 15 mm)

(A) 14.45 (B) 15.45

(C) 16.45 (D) 17.45

17.

IUPAC name of the given compound is

(A) 1,1 - cyclobutylheotane (B) Bicycle [6,3,0] nonane

(C) Spiro [3,6] decane (D) Spiro [3,5] decane

18. How many assymmetric carbon atoms are present in
(i)-1,2-Dimethyl cyclohexane
(ii) 3-Methyl cyclopentene
(iii) 3-Methylcyclohexene

(A) 2,1,1 (B) 1,1,1

(C) 2,0,2 (D) 2,0,1

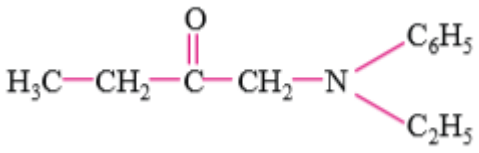
19. 5.3 g of M_2CO_3 is dissolved in 150 ml of 1 N HCl. Unused acid required 100 ml of 0.5 N NaOH. Hence the equivalent weight of "M" is

(A) 23 (B) 7

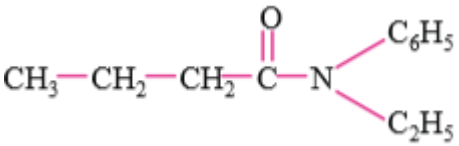
(C) 24 (D) 39

20. The structure of N-Ethyl-N-phenyl butanamide is

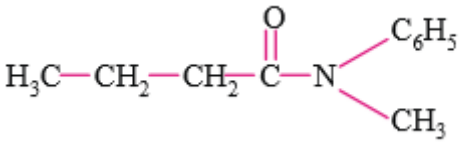
(A)



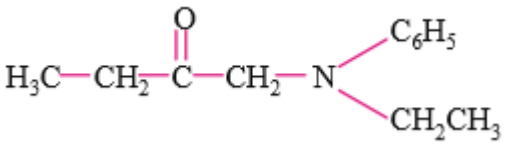
(B)



(C)



(D)



21. Which is an alicyclic compound?

(A) Benzene (B) cyclohexane

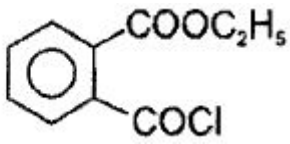
(C) pyridine (D) pyrrole

22. How many times an atom of sulphur is heavier than an atom of carbon?

(A) 32 times (B) 12 times

(C) 8/3 times (D) 12/32 times

23.

The IUPAC name of the following compound is 

(A) 2-(Ethoxycarbonyl) benzyl chloride

(B) Ethyl 2-(Chloroformyl) benzoate

(C) Ethyr2-(Chloromethanoyl) benzoate

(D) Ethyl 2-(Chlorocarbonyl) benzene carboxylate

24. Assertion: Number of moles of H_2 in 0.224 L of H_2 is 0.01 mol.
Reason: 22.4 litres of H_2 at STP contains 6.023×10^{23} mol.

(A) Both A and R are correct and R is correct explanation of A

(B) Both A and R are correct and R is not the correct explanation of A

(C) A is correct and R is wrong (D) A is wrong and R is correct

25. which of the following the bond energy between carbon atom is highest

(A) $CH_3 - CH_3$

(B) $CH_2 = CH_2$

(C) $CH \equiv CH$

(D) $CH_3 - CH_2 - CH_3$

26. 1000 g aqueous solution of $CaCO_3$ contains 10 g of calcium carbonate. Concentration of solution is

(A) 10 ppm

(B) 100 ppm

(C) 1000 ppm

(D) 10000 ppm

27. How many significant figures are present in 0.0000135?

(A) 7

(B) 8

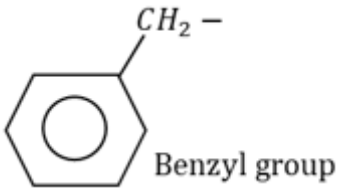
(C) 4

(D) 3

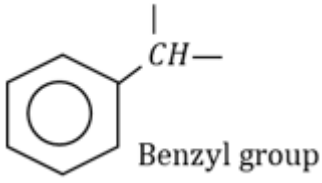
28. Identify the correct matching of the group with its name

(A) $CH_2 = CH -$ *vinylgroup*

(B)



(C)



(D) All the above

29. One mole of white phosphorus contains (At. mass of P = 31)

(A) 6×10^{23} atoms

(B) 2.4×10^{23} atoms

(C) 2.4×10^{24} atoms

(D) 31 gm phosphorus

30. Assertion: 1 mole H_2SO_4 contains same mass of oxygen and sulphur.
Reason: 1 mole H_2SO_4 represents 98 g mass

(A) Both A and R are correct and R is correct explanation of A

(B) Both A and R are correct and R is not the correct explanation of A

(C) A is correct and R is wrong

(D) A is wrong and R is correct

31. Organic liquid vaporizes at a temperature below its boiling point in steam distillation because

(A) Mixture boils when sum of vapour pressure of water and organic liquid becomes equal to atmospheric pressure

(B) Steam distillation is actually distillation under increased pressure

(C) Water vapour does not contribute to its boiling point

(D) Atmospheric pressure is reduced

32. The ratio of pure and hybrid orbitals $H_2C=CH-CH=CH_2$

(A) 7:12

(B) 14:13

(C) 12:10

(D) 5:6

33. In Lassaigne's extract, nitrogen in organic compound is converted to

(A) 2N

(B) NH_3

(C) NO

(D) CN^-

34. If 0.1 g of an organic compound containing phosphorus gave 0.222 g of $Mg_2P_2O_7$, then the percentage of phosphorus in the compound is

(A) 31

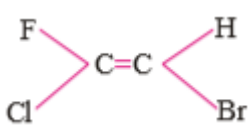
(B) 0.2

(C) 66

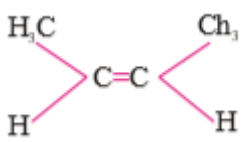
(D) 62

35. The E - isomer is

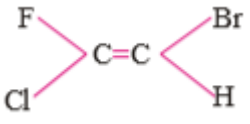
(A)



(B)



(C)



(D)

GMR Classes

CHEMISTRY ASSIGNMENT -GOC , STOICHIOMETRY

NOT PUBLISHED

Total Marks : 140.0
Duration : 1:00 hrs

KEY

1. (D)	**2.** (B)	**3.** (B)
4. (A)	**5.** (A)	**6.** (C)
7. (B)	**8.** (C)	**9.** (D)
10. (C)	**11.** (C)	**12.** (B)
13. (D)	**14.** (D)	**15.** (B)
16. (C)	**17.** (C)	**18.** (A)
19. (A)	**20.** (B)	**21.** (B)
22. (C)	**23.** (D)	**24.** (A)
25. (C)	**26.** (D)	**27.** (D)
28. (D)	**29.** (C)	**30.** (D)
31. (A)	**32.** (D)	**33.** (D)
34. (D)	**35.** (C)	

SOLUTIONS

Deca (D) = $10^1 m$	Deci (d) = $10^{-1} m$
Hecto (h) = $10^2 m$	Centi (c) = $10^{-2} m$
Kilo (k) = $10^3 m$	Milli (m) = $10^{-3} m$
Mega (m) = $10^6 m$	Micro(μ) = $10^{-6} m$
Giga (g) = $10^9 m$	Nano(n) = $10^{-9} m$
Tera (T) = $10^{12} m$	1 A^o = $10^{-10} m$
Peta (p) = $10^{15} m$	Pico(p) = $10^{-12} m$
Exa (E) = $10^{18} m$	Femto = $10^{-15} m$
Zetta (z) = $10^{21} m$	Atto = $10^{-18} m$
Yotta (y) = $10^{24} m$	Zepto = $10^{-21} m$

1.

$S_{8(s)} + 8O_{2\,(g)} \rightarrow 8SO_{2\,(g)}$

1 mole 8 mole

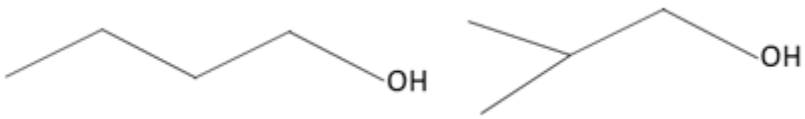
$2SO_2 + O_2 \rightarrow 2SO_3(g)$

8g 8g

Mole=$\frac{W_A}{M_w}$

2. $\Rightarrow 8 = \frac{W_A}{80} = 640g$

3.



$CaCl_2 + NaCl + NaCO_3 \rightarrow CaCO_3$

4.44 3.44

$CaCO_{3_{milli}} = CaO_{milli}$

$\Rightarrow \frac{4.44-x}{50} = \frac{0.56}{28}$

$\Longrightarrow 4.44 - x = \frac{28}{28} = 1$

$x = 3.44$

%purity= $\frac{3.44}{4.44} \times 100$

5. =75%

6.

Number of equivalents of metal = no of equivalents of oxygen

$$\frac{\text{weight}}{\text{equivalent weight}} = \frac{\text{weight}}{\text{equivalent}}$$

$$\frac{A1}{\text{equivalent weight of metal}} = \frac{A_2 - A_1}{8}$$

$$\therefore \text{Equivalent weight of metal} = \frac{A_1}{A_2 - A\_1} \times 8$$

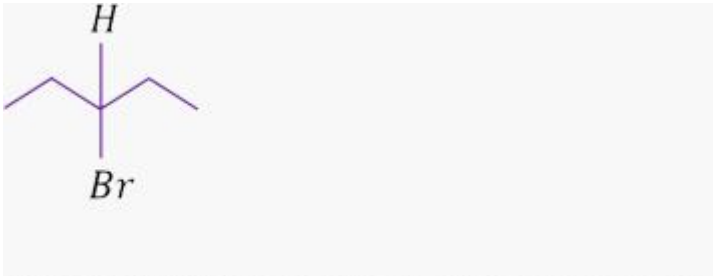
8. Conceptual

9. All isomeric esters are metamers.

10. Conceptual

11. Conceptual

12. Conceptual



13. B-bromo Pentane is not chiral molecule.

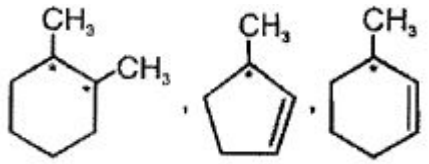
15. All are acids so it shows additive properties

$$H^+ = \frac{H_1V_1 + N_2V_2 + N_3V_3}{V_1 + V_2 + V_3}$$

$$\frac{400+900+200}{1000} = \frac{1500}{1000} = 1.5$$

17. Conceptual

18.

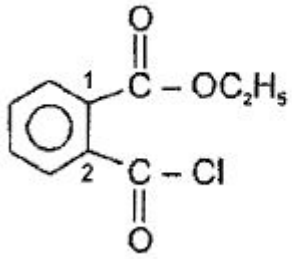


20. Conceptual

21. Conceptual

22. Mwt of Sulphur =32
MWt of Carbon Sulphur and Carbon=32/12=8/3

23.



Ethyl 2-(Chlorocarbonyl) benzene carboxylate

24. At STP one mole of any gas occupies 22.4 litre of volume.

25. Conceptual

26.

$$\text{ppm} = \frac{1}{100} \times 10^6 = 10^4 \text{ppm}$$

28. Conceptual

29.

white phosphorus exists as p_4 molecules:
$P_4 = 4 \times 6.02 \times 10^{23}\ atoms$
$2.4 \times 10^{24}\ atoms$

30. mass of O and S depends on atomic mass of respective atoms.

31. Conceptual

32. Conceptual

33. Conceptual

35. Highest priority groups on opposite side of double bond