

Model Question of HSC Examination 2015

(English Version)

Subject : Chemistry 2nd Paper (Creative)

Time : 2 Hours 10 Minutes

Full Marks—40

1. ▶

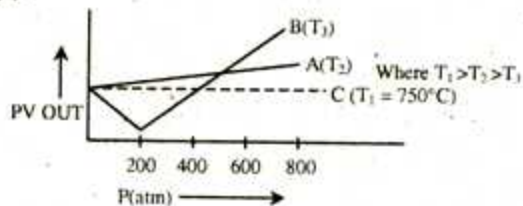


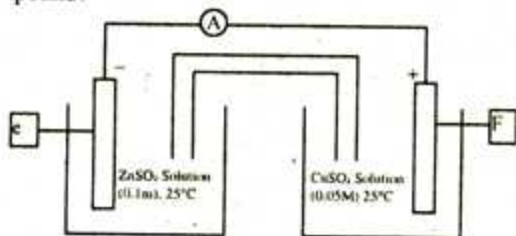
Fig : A Part of Amaga's curve

- a. What is called ideal gas? 1
- b. Write down the law of Dalton's partial pressure. 2
- c. When will lines of A and B mix with line C? Explain with your logic. 3
- d. Why A and B show deviation from C. Explain and establish the Vander waals equation. 4

2. ▶ 2-amino propanoic acid and maleic acid both are organic compound but show different geometrical isomcrism.

- a. What is functional group? 1
- b. Write down the name and structure of possible isomers of C_2H_6O . 2
- c. Write down different geometrical isomerism of above compounds. 3
- d. How will you differentiate between the isomers of 2nd compound? 4

3. ▶



$$E^{\ominus}_{Zn/Zn^{+2}} = 0.76V, E^{\ominus}_{Cu/Cu^{+2}} = -0.34V$$

- a. Write down one the name of high quality coal. 1
- b. What down the principle of preparation of Urea? 2
- c. Discuss the half cell of F & F with reactions. 3
- d. Determine the cell potential of the given stem. 4

4. ▶ A and B are two aromatic hydrocarbon having molecular mass 78 and 92 respectively. Both undergo electrophillic substitution reaction with catalytic Cl_2 .

- a. Write down the formula of Dettol. 1
- b. What is aromiticity? Explain. 2
- c. In compound B, substitution occur at ortho and para position. Why? 3
- d. How A can by extracted from light oil? 4

5. ▶ Two different gases A and B pass through a tube whose volume is V, molecular mass of A is 44 and its diffusion time is 30s and molecular mass of B is 28.

- a. What is called absolute temperature? 1
- b. Find out the value of R in SI unit. 2
- c. Calculate the RMS velocity of A at 25°C. 3
- d. Analyze the comparative rate of diffusion of A and B in the above stem. 4

6. ▶ A piece of Iron is dissolved in dilute H_2SO_4 solution and obtained $FeSO_4$ solution which completely titrated with 0.02M $KMnO_4$ 100ml solution.

- a. What is glass? 1
- b. Write down the blenching process of pulp. 2
- c. Balance the reaction happen in the stem by ion-electron method. 3
- d. Determine the amount of Iron in gram of the stem. 4

Subject : Chemistry 2nd Paper (MCQ)

Time: 35 Minutes

Full Marks — 35

[Darken the circle (O) with black ball point pen from the alternatives]

1. Which functional group is more reactive?
 (a) -CHO (b) -CO-
 (c) -COOH (d) -OH
2. Which is used for production of PVC?
 (a) Ethene (b) Ethyne
 (c) Ethane (d) Benzene
3. Indified by the carbilamine test _
 i. Amine ii. Chloroform
 iii. Alkane
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
4. Which organic compound is prepared at first in the laboratory?
 (a) Methane (b) Urea
 (c) Ethanol (d) Benzene
5. Which is the functional group of ester?
 (a) -CHO (b) -CONH₂
 (c) -COOH (d) -COOR
6. Used for preparation of explosive—
 i. Detol ii. TNT
 iii. Nitroglycerine
 Which one of the following is correct?
 (a) i (b) ii
 (c) ii and iii (d) i, ii and iii
- Observe the following stem & answer the question number 7 & 8.
 $R-CH_2OH \rightarrow R-CHO \rightarrow \text{Alkane}$
 X Y
7. Which is used for identification of 'X'?
 (a) Tollen's reagent
 (b) Fehling's reagent
 (c) Grignard reagent
 (d) PCl_5
8. By the addition of which reagent with aldehyde to form alkane?
 (a) $Zn-Hg + HCl$ (conc.)
 (b) $Na-Hg + H_2O$
 (c) $ZnCl_2$ (dry) + HCl (conc.)
 (d) $Pb + BaSO_4$
9. Which one is heterocyclic compound?
 (a) Pyridine (b) Benzene
 (c) Ethelene oxide (d) Napthaline
10. 16g CH_4 means _
 i. One mole CH_4 molecules
 ii. Equal to Avogadro's number CH_4 molecules
 iii. 22.4L CH_4
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
11. What is the molar volume at STP any gas?
 (a) 21.4L (b) 22.4L
 (c) 23.4L (d) 24.4L
12. What is the oxidation number of 'Cr in $K_2Cr_2O_7$?
 (a) +6 (b) -6
 (c) +12 (d) -12
13. How many molecules present in 09g water?
 (a) 3.011×10^{23} (b) 6.023×10^{23}
 (c) 9.039×10^{23} (d) 18.069×10^{23}
14. When propyne is treated with 20% H_2SO_4 in presence of $HgSO_4$, the main product is _
 (a) Propanal (b) Acetone
 (c) Propanol (d) Propyl hydrogen sulphate
15. How many percent of N_2 present in urea?
 (a) 46% (b) 44%
 (c) 42.44% (d) 48.50%
16. Which is the chemical formula of urea?
 (a) $H_2N-CO-NH_2$ (b) $NH_2-CO-NH_4$
 (c) $CH_3-CO-NH_2$ (d) $NH_2-CO-CH_2-NH_2$
17. $N_2 + 3H_2 \rightarrow X$; 'X' compound is _
 i. It is used for production of urea
 ii. It is covalent bond compound
 iii. It is used as fertilizer
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
- $NH_3 + CO_2 \rightarrow \text{Ammonium carbamate} \rightarrow X$
 Answer to the question number 18 & 19 according to the stem:
18. Which is the 'X' compound?
 (a) $(NH_4)_2CO_3$ (b) $(NH_2)_2CO$
 (c) $NH_4-CO-NH_2$ (d) $NH_2(CO)_2$
19. 'X' compound is
 i. It is used as fertilizer
 ii. Main constituent is N_2
 iii. Molecular mass is 60
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
20. Which is non electrolyte?
 (a) Lime water (b) Glucose solution
 (c) H_2SO_4 solution (d) $NaCl$ solution
21. $C_{12}H_{22}O_{11}$ compound is _
 i. Electrolyte
 ii. Covalent bond compound
 iii. Non electrolyte
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
22. $1F = ?$
 (a) 96500C (b) 95000C
 (c) 96000C (d) 95600C
23. Molar gas constant (R) –
 i. Depends on the nature of gas
 ii. It is same for all gas
 iii. Unit of it is $Jk^{-1}mole^{-1}$
 Which one of the following is correct?
 (a) i (b) i and iii
 (c) ii and iii (d) i, ii and iii
24. Which is the critical temperature of O_2 gas?
 (a) -118.8°C (b) -240°C
 (c) -31.1°C (d) -80°C
25. Which compound play main role in the acid rain?
 (a) CO_2 (b) SO_2
 (c) CO (d) NO_2
26. How many volume of CO_2 gas form by heating of 50g $CaCO_3$ at STP?
 (a) 44.8L (b) 11.2L
 (c) 20L (d) 22.4L
27. Which is not depend on temperature?
 (a) Molarity (b) Normality
 (c) Molality (d) Rate of percentage
28. Which act as both of oxidizing & Reducing agent?
 (a) $CuSO_4$ (b) SO_2
 (c) $FeSO_4$ (d) H_2
29. What happen for oxidant in a oxidation reduction reaction?
 (a) It is oxidized by accepting of electron
 (b) It is oxidized by donating of electron
 (c) It is reduced by accepting of electron
 (d) It is reduced by donating of electron
30. $NaOH + Cl_2 \rightarrow NaCl + NaOCl + H_2O$
 In this reaction Cl_2 is _
 i. Oxidized
 ii. Reduced
 iii. Oxidized & Reduced
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
- Observe the following stem and answer the question number 31 & 32.
 'A' an element whose atomic number is 17, reacts with oxygen of air to form light oxide 'B'.
31. What is the nature of 'B' compound?
 (a) Acidic (b) Basic
 (c) Amphoteric (d) Neutral
32. In the 'B' compound _
 i. The oxidation number is +7 of 'A' element
 ii. The percentase of oxygen is 63
 iii. It forms $HClO_3$ acid with water
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii
33. For proction of glass which is used as flux?
 (a) SiO_2 (b) K_2O
 (c) CaO (d) Cu_2O
34. What is the value of e.m.f in the galvanic cell?
 (a) 1.10V (b) 0.42V
 (c) 0.62V (d) 1.80V
35. Produce from brine _
 i. $NaOH$ ii. Cl_2
 iii. H_2
 Which one of the following is correct?
 (a) i (b) i and ii
 (c) ii and iii (d) i, ii and iii

1	(c)	2	(b)	3	(b)	4	(b)	5	(d)	6	(c)	7	(d)	8	(a)	9	(d)	10	(d)	11	(b)	12	(a)	13	(a)	14	(b)	15	(a)	16	(b)
17	(b)	18	(b)	19	(d)	20	(b)	21	(c)	22	(a)	23	(c)	24	(a)	25	(b)	26	(b)	27	(c)	28	(b)	29	(c)	30	(d)	31	(a)	32	(d)
33	(d)	34	(a)	35	(d)																										