

International Indian School - Buraidah

TERM EXAMINATION (2019- 20)

Subject: **Chemistry**

Date: 23/06/19

Set-A

Duration: **3 Hours**

Class: **XII**

Max. Marks: **70**

General Instructions

1. Question no: 1 to 20 are very short answer type questions carrying 1 mark each.
2. Question no: 21 to 27 are short answer type questions carrying 2 marks each.
3. Question no: 28 to 34 are short answer type questions and carry 3 marks each.
4. Question no: 35 to 37 are long answer type questions and carry 5 marks each.
5. Use log table if necessary.

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- | | |
|---|---|
| 1. Give the IUPAC name of the following compound: $\text{CH}_2(\text{Cl})\text{COCH}(\text{CH}_3)\text{CONH}_2$ | 1 |
| 2. What is the role of graphite in the electrometallurgy of aluminum? | 1 |
| 3. What happens when D-glucose is treated with the bromine water? | 1 |
| 4. What are ambident nucleophiles? Explain giving an example. | 1 |
| 5. Draw the structure of the following compound: 4-Methylpent-3-en-2-one. | 1 |
| 6. Define the term, "homopolymerisation" giving an example. | 1 |
| 7. Give one example of an artificial sweetener used by the diabetic patients. | 1 |
| 8. State the condition resulting in reverse osmosis? | 1 |
| 9. What is the composition of copper matte? | 1 |
| 10. What type of linkage holds together the monomers of D.N.A. | 1 |
| 11. Name a substance which can be used as an antiseptic as well as disinfectant. | 1 |
| 12. What happens when $\text{CH}_3\text{-Br}$ is treated with KCN ? | 1 |
| 13. How can you describe this designation 6, 6, mean in the name nylon -6, 6? | 1 |
| 14. What is tincture of iodine ? What is it's use ? | 1 |
| 15. Name the main constituents of dettol. | 1 |
| 16. Name the method used for refining of copper metal. | 1 |
| 17. State Raoult's law for a solution of volatile liquids. | 1 |

18. Give one example of a condensation polymer. 1
19. Write the structural formula of Hex-2-en-4-ynoic acid 1
20. Why is use of aspartame limited to cold foods and drinks? 1
21. What is a biodegradable polymer? Give an example of a biodegradable aliphatic polyester. 2
22. How will you prepare the following compounds starting with benzene
(i) Benzaldehyde (ii) Acetophenone 2
23. Give one example of (i) Wurtz reaction (ii) Wurtz-Fittig reaction 2
24. Describe the following giving one example for each :
(i) Food preservatives (ii) Antacids 2
25. Describe the role of (i) SiO_2 in the extraction of copper from copper matte.
(ii) Iodine in the refining of zirconium. 2
26. What is essentially the difference between α – form of glucose and β – form of glucose? Explain. 2
27. Differentiate between molarity and molality for a solution. How does a change in temperature influence their values? 2
28. Describe how the following changes are brought about:
(i) Pig iron into steel.
(ii) Zinc oxide into metallic zinc.
(iii) Impure titanium into pure titanium 3
29. How would you obtain
(i) but-2-enal from ethanal,
(ii) butanoic acid from butanol,
(iii) benzoic acid from ethylbenzene? 3
30. (i) How is Dacron obtained?
(ii) Give one example of a synthetic rubber.
(iii) Write the names of the monomer of nylon-6,6. 3

OR

- Mention two important uses of each of the following polymers: 3
- (i) Bakelite (ii) PVC (iii) Nylon 6,6
31. What is meant by positive and negative deviations from Raoult's law and how is the sign of ΔH_{mix} related to positive and negative deviations from Raoult's law? 3
 32. Account for the following:
(i) Aspirin drug helps in the prevention of heart attack. 3

Diabetic patients are advised to take artificial sweeteners instead of natural sweeteners.

i) Detergents are non-biodegradable while soaps are biodegradable.

33.(i) Write the zwitter ion structure of glycine.

3

(ii) Name the vitamin in each case whose deficiency causes

(a) Night Blindness (b) Poor coagulation of blood

(iii) What is meant by inversion of sugar?

34. The following compounds are given to you :

3

2-Bromopentane, 2-Bromo-2-methylbutane, 1-Bromopentane

(i) Write the compound which is most reactive towards S_N2 reaction.

(ii) Write the compound which is optically active.

(iii) Write the compound which is most reactive towards β -elimination reaction.

35. Illustrate the following reactions giving a suitable chemical equation for each:

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(i) Sandmeyer's reaction

(ii) Friedel-Crafts (a) alkylation and (b) acylation of chlorobenzene

(iii) Write structures of the following organic halogen compounds.

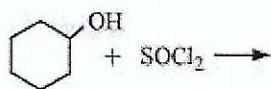
(a) 2-Chloro-3-methylpentane

(b) 1,4-Dibromobut-2-ene

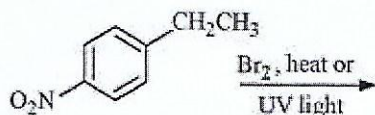
(OR)

Complete the following reaction equations.

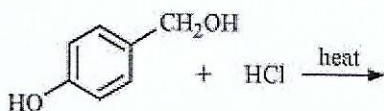
(i)



(ii)



(iii)



(iv) What happens when

(i) n-butyl chloride is treated with alcoholic KOH.

(ii) bromobenzene is treated with Mg in the presence of dry ether.

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36. Define the following terms :

(i) Mole fraction

(ii) Isotonic solutions

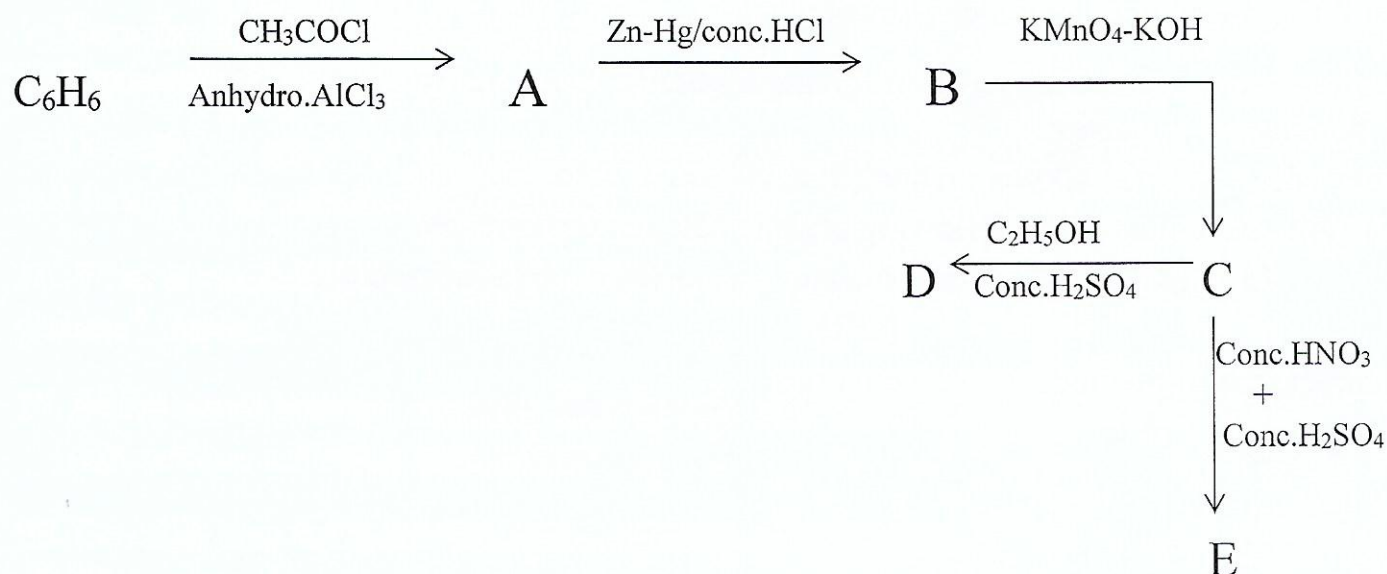
(iii) Van't Hoff factor

- (iv) azeotrope
(v) colligative properties

(OR)

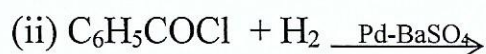
- (a) Define the term osmotic pressure. Describe how the molecular mass of a substance can be determined by a method based on measurement of osmotic pressure?
(b) Determine the osmotic pressure of a solution prepared by dissolving 2.5×10^{-2} g of K_2SO_4 in 2L of water at $25^\circ C$, assuming that it is completely dissociated.
($R = 0.0821 \text{ L atm K}^{-1} \text{ mol}^{-1}$), molar mass of $K_2SO_4 = 174 \text{ g mol}^{-1}$

37. Write the structures of A, B, C, D and E in the following reactions: (5)



OR

(a) Complete the following chemical equations:



(b) Write short notes on .

- (i) Decarboxylation (ii) Cannizzaro reaction
