

12181
CHEMISTRY (New Book)
PART-II

NOTE: There are three sections of this paper. Carefully read the instructions for each section and attempt accordingly. Attempt all questions of Section-A and return it to the Superintendent within given time, even if you have not attempted any question. Select the correct choice and write only A, B, C or D, whichever is appropriate, in the answer box. No marks will be awarded for cutting/erasing or overwriting.

SECTION-A

Time: 20 Minutes

Marks: 18

1. Thiols contain which of the following elements? A) N, B) Cl, C) S, D) Mg C
2. Which one is more reactive? A) acetaldehyde, B) propane, C) aldehyde, D) 3-propanone C
3. Ethanol is produced from starch by the process of: A) hydrolysis, B) hydrogenation, C) decomposition, D) fermentation D
4. Photochemical smog is primarily caused by: A) CO, B) CO₂, C) O₃, D) NO₂ B C
5. In DNA, adenine forms a complementary pair with which nitrogen base? A) uracil, B) cytosine, C) thymine, D) guanine C
6. Carboxylic acids on decarboxylation give: A) alcohol, B) ether, C) alkane, D) amine C
7. Resonance stabilizing energy of benzene is kJ/mol. A) 36.8, B) 152, C) 208, D) 360 B
8. Which one of the following is meta directing group? A) -CH₃, B) -NH₂, C) -CN, D) -Cl C
9. Trypsin is present in: A) stomach, B) saliva, C) bile, D) pancreatic juice D
10. Hot adhesive particularly popular for crafts contain: A) ethylene vinyl acetate, B) poly chloroprene, C) epoxy urethane, D) polyols-poly urethane A
11. An electron pair donor is classified as: A) Lewis acid, B) Lewis base, C) Bronsted acid, D) Bronsted base B
12. The inert pair effect is dominated in: A) Pb, B) Sn, C) C, D) Si A
13. Oxidation of secondary alcohol produces: A) organic acid, B) ether, C) aldehyde, D) Ketone D
14. Which of the following compounds can react with ammonical silver nitrate to form silver mirror? A) acetone, B) ethanol, C) ether, D) ethanal D
15. Which one is the strongest acid? A) ethanol, B) acetic acid, C) chloroacetic acid, D) fluoroacetic acid D
16. RNA is primarily seen in: A) nucleus, B) cytoplasm, C) cell wall, D) cell membrane B
17. Which of the following hydrocarbons produces an NMR spectrum with more than one peak? A) methane, B) ethane, C) butane, D) cyclobutane C
18. How many isomers are possible for C₂H₆O? A) 2, B) 4, C) 8, D) 5 A

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Time: 2 Hours 40 Minutes

SECTION-B

Marks: 40

1. Attempt any ten of the following. All carry equal marks.

- i. What is E.N? Explain.
- ii. Write chemical reactions of phenol with the following: (i) Cl_2 (ii) HNO_3 (iii) CH_3COCl (iv) CH_3Cl
- iii. Write IUPAC names of the following: (i) $\text{Na}_3[\text{Fe}(\text{CN})_6]$ (ii) $[\text{Co}(\text{en})_2\text{Cl}_2]$
- iv. Complete and balance the following reactions: (i) $\text{NaOH} + \text{H}_2\text{SO}_4 \longrightarrow$ (ii) $\text{H}_2\text{SO}_4 + \text{Mg} \longrightarrow$
- v. Explain magnetic and catalytic properties of transition compounds.
- vi. Write a note on alloy.
- vii. What do you know by acid rain?
- viii. State and explain Markownikoff's rule.
- ix. Explain acid base behaviour of group IV oxides.
- x. Explain the difference between alcohol and phenol.
- xi. Discuss the Fehling and Tollen tests.
- xii. What is glycoside linkage?
- xiii. What are addition polymers? How do they differ from condensation polymers?

SECTION-C

Marks: 27

NOTE: Attempt any three of the following questions. All questions carry equal marks.

2. i. Discuss the structure of benzene on the basis of MOT.
ii. How would you prepare the following compounds from benzene?
(i) Acetophenone (ii) Toluene (iii) Trinitrobenzene (iv) Benzene Sulphonic Acid
3. What are complex ions? Explain their shapes and colours.
4. i. How can you prepare Grignard reagent?
ii. Discuss the reaction of Grignard reagent with following:
(i) Acetaldehyde (ii) ketone (iii) Ester (iv) Carbondioxide (CO_2)
5. i. Give IUPAC names of the following compounds:
(i) $\text{CH}_3-\text{C} \equiv \text{C}-\text{CH}(\text{CH}_3)_2$ (ii) $(\text{C}_6\text{H}_5)_3\text{CH}$ (iii) HCOOCH_3
(iv) $\text{CH}_2=\text{CHCO}_2\text{H}$ (v) $\text{CH}_3\text{CF}_2\text{COOH}$
ii. Draw the structures of the following compounds:
(i) Anthracene (ii) 2,3,4 trimethyl hexane (iii) Methanamide (iv) Ethyl nitril