

Version No.			

ROLL NUMBER						



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Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

CHEMISTRY HSSC-II
SECTION – A (Marks 17)
Time allowed: 25 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

Q.1 Fill the relevant bubble for each part. Each part carries one mark.

- The first ionization energy is higher for the:
 - Alkali metals
 - Alkaline earth metals
 - Halogens
 - Noble gases
- Crimson red is characteristic flame color of:
 - Li
 - Na
 - Ca
 - Ba
- The catalyst used for synthesis of ammonia by Haber process is:
 - Fe
 - TiCl₄
 - Cr₂O₃
 - ZnO
- Aerosols and lotions are used as:
 - Fungicides
 - Repellents
 - Herbicides
 - Miticides
- Due to inert pair effect _____ oxidation state is more stable than for _____ Pb.
 - 2+,4+
 - 1+,4+
 - 4+,2+
 - 2+,3+
- Ozone is destroyed by:
 - SO₂
 - CO₂
 - CFCs
 - HCl
- Which one of the following is used as reference in NMR spectroscopy?
 - Tetra chloromethane
 - Tetra methylsilane
 - Tetra silanemethane
 - Tri iodomethane

8. Which one of the following technique does not involve interaction of electromagnetic radiations with matter?
- A. IR spectroscopy B. NMR spectroscopy
C. Mass spectroscopy D. UV spectroscopy
9. Benzoic acid is obtained by oxidation of:
- A. m-Xylene B. p-Xylene
C. Toluene D. Phenol
10. The structural formula for carboxylic anhydride is:
- A. RCOOCOR B. RCOR
C. RCOOR D. RCOOH
11. Which one of the following is not a nucleophile?
- A. H₂O B. H₂S
C. BF₃ D. NH₃
12. Oxonium ion is formed when:
- A. Ethanol react with Na metal
B. Phenol react with NaOH
C. Ether is treated with HI
D. Ethanol treated with NaOH/I₂
13. Which one of the following reagents reacts with both aldehyde and ketone?
- A. Grignard reagent B. Tollen's reagent
C. Fehling's reagent D. Benedict's reagent
14. Which one of the following reagents is used for reduction of carboxylic acid?
- A. H₂/Ni B. H₂/Pt
C. NaBH₄ D. LiAlH₄
15. Which one of the following is used as major component of soap?
- A. Fatty acid B. Palm oil
C. Proteins D. Saccharides
16. IUPAC name of Glutaric acid is:
- A. Butane dioic acid B. Pentane dioic acid
C. Propane dioic acid D. Hexane dioic acid
17. Which one of the following nuclei is NMR active?
- A. C¹² B. C¹³
C. O¹⁶ D. Ne¹⁰
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Federal Board HSSC-II Examination
Chemistry Model Question Paper
(Curriculum 2006)

Time allowed: 2:35 hours

Total Marks: 68

Note: Answer all parts from Section 'B' and all questions from Section 'C' on the **E-sheet**.
Write your answers on the allotted/given spaces.

SECTION – B (Marks 42)

Q.2 Attempt all parts from the following. All parts carry equal marks. (14 × 3 = 42)

- i. The thermal stability of carbonates of alkaline earth metals increases down the group. Justify this behavior. (3)

OR

What information are obtained from number of peaks and area under the peaks in NMR spectrum? (1+2)

- ii. Ammonia act as both ligand and base. Justify this statement by the reactions with copper ion. (1.5+1.5)

OR

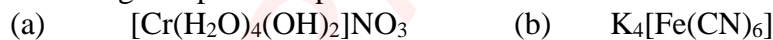
What are ligands? Give example of tridentate and hexadentate ligand. (1+1+1)

- iii. How will you prepare glycerol from hydrolysis and saponification of fats and oils? (1.5+1.5)

- iv. How can nylon-6,6 be prepared from Adipic acid? Give complete chemical reaction. (1+2)

- v. How does tetraethyl lead cause air pollution? Give a reason (1+2)

- vi. What are the oxidation number and coordination number of the metals in the following complex compounds? (1.5+1.5)



OR

Demonstrate the chemical reaction of $\text{K}_2\text{Cr}_2\text{O}_7/\text{H}_2\text{SO}_4$ with the FeSO_4 Salt and show the color change. (2+1)

- vii. The order as reducing agent of Halide ions is $\text{F}^- < \text{Cl}^- < \text{Br}^- < \text{I}^-$. Interpret the order. (1+1+1)

- viii. What are adhesives? How does hot Glue work? (1+2)

- ix. Summarize the concept of optical Isomerism by drawing different isomeric structures of tartaric acid showing their optical behavior. (1.5+1.5)

OR

How can the following acid derivative be prepared from carboxylic acid? Write reaction of each. (1+1+1)

- a. Acid anhydride b. Acyl halide c. Acid amide

Q.5 How does arrangement of electrons affect the magnetic properties of transition elements? How can it be calculated? Calculate magnetic moment of Fe = 26. (2+2+2)

OR

Define isomerism. Make all possible structural isomers of $C_4H_{10}O$, classify each giving IUPAC names. (2+2+2)

Q.6 What is beta-elimination reaction? Explain reaction mechanism for the Unimolecular and Bimolecular elimination reactions of R – X. (1+3+3)

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FBISE PAST PAPERS