

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, PESHAWAR

Higher Secondary School Certificate (H.S.S.C.) Examination — Inter Part-II

Inter Part-II	CHEMISTRY Paper - XII (01) (19) · PR XII (01) 19	Fresh / Reappear 2019
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Instructions (printed in Urdu on the sheet): 1. Each question has four circles; fill in only the circle of the correct answer. 2. Use a blue or black pen to fill the circles. 3. Filling more than one circle will be treated as a wrong answer.

SECTION - A

Time Allowed: 20 Minutes

Marks: 18

1	Which of the given technique is used for determination of functional group in a compound? ☐ IR ☐ UV ☐ NMR ☐ Mass spectroscopy
2	Pollutants have adverse effect over..... ☐ Biosphere ☐ Ecosystem ☐ Hydrosphere ☐ All these
3	Which is true for DDT? It is..... ☐ Not a pollutant ☐ An antibiotic ☐ An antiseptic ☐ A non-degradable pollutant
4	Ethanol is produced from starch by the process of..... ☐ Hydrolysis ☐ Hydrogenation ☐ Decomposition ☐ Fermentation
5	Which of the given orders of relative strengths of acids is correct? ☐ $\text{ClCH}_2\text{COOH} > \text{FCH}_2\text{COOH} > \text{BrCH}_2\text{COOH}$ ☐ $\text{ClCH}_2\text{COOH} > \text{BrCH}_2\text{COOH} > \text{FCH}_2\text{COOH}$ ☐ $\text{BrCH}_2\text{COOH} > \text{FCH}_2\text{COOH} > \text{ClCH}_2\text{COOH}$ ☐ $\text{FCH}_2\text{COOH} > \text{ClCH}_2\text{COOH} > \text{BrCH}_2\text{COOH}$
6	Clemmensen reduction is carried out with..... ☐ LiAlH_4 ☐ Zn-Hg and HCl ☐ LiAlH_4 and HCl ☐ All these
7	Which of the given has highest solubility in water? ☐ $(\text{CH}_3)_2\text{CHOH}$ ☐ $(\text{CH}_3)_3\text{COH}$ ☐ $\text{C}_2\text{H}_5\text{OH}$ ☐ MeOH
8	The strongest reducing agent in these is..... ☐ HI ☐ HF ☐ HBr ☐ All these
9	Aqueous KOH causes S_N -reaction in alkylhalide. On which of the given alkylhalides KOH_{aq} would like to attack easily? ☐ $\text{CH}_3\text{-CH}_2\text{-Cl}$ ☐ $\text{CH}_3\text{-CH}_2\text{-Br}$ ☐ $\text{CH}_3\text{-CH}_2\text{-F}$ ☐ $\text{CH}_3\text{-CH}_2\text{-I}$
10	Which of the given is more stable? ☐ Cyclo Propane ☐ Cyclo Butane ☐ Cyclo Pentane ☐ Cyclo Hexane
11	The order in the ease of dehydration of alcohol is..... ☐ Tertiary > Secondary > Primary ☐ Primary > Secondary > Tertiary ☐ Secondary > Primary > Tertiary ☐ Primary > Tertiary > Secondary
12	Which of the given is an organic compound? ☐ KCN ☐ NH_4OCN ☐ CS_2 ☐ None of these
13	Furan is.....organic compound. ☐ Homocyclic ☐ Aromatic ☐ Heterocyclic ☐ Both B and C
14	Which of the given is diamagnetic ion? ☐ Cu^{++} ☐ Mn^{++} ☐ Sc^{+++} ☐ Co^{+++}
15	Which of the given ions exhibits colour in aqueous solution? ☐ Ni^{2+} ☐ Ti^{4+} ☐ Zn^{2+} ☐ Sc^{3+}
16	Alkali metals have high oxidation potential and hence they behave as..... ☐ Electrolytes ☐ Lewis bases ☐ Oxidizing agents ☐ Reducing agents
17	Which of the given has the lowest melting point? ☐ Cs ☐ K ☐ Na ☐ Li
18	Lithium is the strongest reducing agent among alkali metals due to which of the given factors? ☐ Ionization energy ☐ Electron affinity ☐ Lattice energy ☐ Hydration energy

Note: Time allowed for Section - B and Section - C is 2 Hours and 40 minutes.

SECTION - B

Marks: 40

Q-II Answer any TEN parts. Each part carries FOUR marks.

1. Why fall in ionization energy occurs at Al and S in the same period?
2. Transition elements show variable oxidation states, why?
3. How coal can be converted into petroleum?
4. Why cyclopropane is more reactive than propane?
5. Why benzene is less reactive than ethene?
6. Ethyl alcohol is liquid while ethyl chloride is gas at room temperature, give reasons.
7. What is Lucas test?
8. What is silver mirror test?
9. Carboxylic acids have high boiling points than corresponding alcohol, give reasons.
10. Vegetable oil is sensitive to rancidity, give reasons.
11. How DDT reaches to animal fatty tissue?
12. Why acid rain is considered as threat to historical monument?
13. Explain the use of ionization chamber in mass spectrometer.

SECTION - C

Marks: 27

Note: Attempt any THREE questions. All questions carry equal marks.

- Q-III (a) Explain the reaction of group II-A elements with oxygen.
 (b) What is meant by atmosphere, explain the importance of troposphere.
- Q-IV (a) Explain the acidity of carboxylic acid. How their acid strength is affected by substitution?
 (b) Why O/P group activate the ring for further substitution? Explain.
- Q-V (a) Give IUPAC names.
 i. $\text{Na}_2[\text{Fe}(\text{NO})(\text{CN})_5]$
 ii. a benzene ring carrying a CH_3 group and a Cl group on adjacent positions (drawn on the sheet)
 iii. $\text{CH}_2\text{-CH}_2\text{-CH}_2$ with -OH on the first and third carbons
 iv. $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{-CHO}$
 v. $\text{HOOC-(CH}_2)_2\text{-COOH}$
 vi. $\text{CH}_3\text{-CO-Cl}$ (drawn with the C=O shown)
 (b) Draw structural formula for the given compounds.
 i. Potassium Hexachloroplatinate ii. 3 - Hexene - 1 - yne
 iii. p-xylene iv. Methoxyethane
 v. hexane - 2, 4 vi. Acetamide
- Q-VI (a) Discuss Bimolecular Elimination (E_2) reaction in Alkyl Halides.
 (b) Using Grignard reagent and appropriate aldehyde or ketone, how each of the following can be prepared?
 i. 1 - butanol ii. Ethyl alcohol iii. 2 - butanol

Notes

1. Typeset from the board paper. Board wording, spelling and notation are reproduced as printed, including slips; nothing has been corrected.
2. The source answer sheet arrived with the bubbles already shaded in. Options are given unmarked; no answer key is included.
3. The Section A instructions are printed in Urdu on the board sheet; an English rendering is given here.
4. **Class:** this pair is the Inter **Part-II** (12th class) paper — the subjective sheet is headed “PR XII (01) 19 — Chemistry (New), Inter Part-II”, and the syllabus is organic and inorganic Part-II. It supersedes the earlier subjective-only file for this paper; the objective half arrived with this batch.
5. Q-V(a) parts ii, iii and vi are drawn as structures on the sheet; they are described in words here rather than redrawn. Q-V(b) part v is printed as “hexane - 2, 4” with no suffix — reproduced as printed.
6. Kept as printed: Q.5’s acid-strength orders; Q.9 “alkylhalide”; Section B 9 “high boiling points than corresponding alcohol”.