

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, PESHAWAR

Secondary School Certificate (S.S.C.) Examination 2021 · 10th (Fresh/Reappear)

Class 10th	CHEMISTRY	PR X (01) 21
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Time Allowed: 15 Minutes

SECTION - A

Marks: 12

Four circles are given against each question. Fill only the circle of the correct answer. Use a blue or black marker/pen. Filling more than one circle will be treated as a wrong answer.

- The equilibrium constant (K_c) is:

☐ Sum of two reactions	☐ Difference of two rate constants
☐ Ratio of two rate constants	☐ Product of two rate constants
- Lactic acid is mostly found in:

☐ Lemons	☐ Insects	☐ Spinach	☐ Sour milk
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- Which one of the given is a Lewis base?

☐ HCl	☐ AlCl ₃	☐ BF ₃	☐ F ⁻
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- Which of the given compounds responds to C_nH_{2n+2} formula?

☐ C ₂ H ₂	☐ C ₂ H ₄	☐ C ₂ H ₆	☐ C ₂ H ₃
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- Oxygen is attached on both sides to carbon atom in:

☐ Alcohol	☐ Ketone	☐ Aldehyde	☐ Ether
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- Baeyer's test is commonly used for the detection of:

☐ Cycloalkanes	☐ Aromatic compounds
☐ Alkanes	☐ Alkenes
- On hydrolysis lactose gives glucose and:

☐ Sucrose	☐ Galactose	☐ Maltose	☐ Fructose
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- Stearic acid (C₁₇H₃₅COOH) is found in:

☐ Butter	☐ Animal fat	☐ Vinegar	☐ Vitamins
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- Which pair of gases is found in atmosphere with 99% of amount?

☐ Carbondioxide and Neon	☐ Helium and Hydrogen
☐ Argon and Hydrogen	☐ Nitrogen and oxygen
- The coldest region in atmosphere is:

☐ Troposphere	☐ Stratosphere	☐ Mesosphere	☐ Thermosphere
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- Chlorine acts as bleaching agent in the presence of:

☐ HCl	☐ H ₂ O	☐ NaOH	☐ HNO ₃
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- The impurity present in mineral is called:

☐ Gangue	☐ Mineral	☐ Ore	☐ Metal
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Note: Time allowed for Section – B and Section – C is 2 Hours and 45 minutes.

Section – B

Marks: 32

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

- In the equilibrium mixture, the concentration of hydrogen and iodine is 0.04 moles per dm³ each while that of hydrogen iodide is 0.08 moles per dm³. Find K_c of the given reaction: $H_{2(g)} + I_{2(g)} \rightleftharpoons 2HI_{(g)}$.
- Discuss the concept of Lewis acids and bases with examples.
- What are alkanes? Why alkanes are also called “Paraffins”?
- Define function group. Write at least three function groups containing oxygen.
- Write balance equations for the preparation of ethene from ethyl alcohol and ethyl chloride.
- Differentiate between glucose and fructose.
- Sketch and briefly discuss the composition of atmosphere by mentioning the percentage of each component.
- Explain hydrogen bonding in water with the help of structure of water molecules.
- How blister copper is purified?
- Write any four physical properties of water.
- Compare the different macroscopic characteristics of forward and reversible reactions.

Section – C

Marks: 21

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

- Q-III** (a) Differentiate between different organic compounds on the basis of alcoholic and ether functional groups. (4)
 (b) Discuss any three effects of ozone layer depletion. (3)
- Q-IV** (a) Define hard and soft water and discuss the causes of hardness of water. (4)
 (b) Complete the reactions: (3)
 i) Sucrose $\xrightarrow{H_2O}$ Glucose + ? ii) Lactose $\xrightarrow{H_2O}$ Glucose + ?
 iii) Maltose $\xrightarrow{H_2O}$ Glucose + ?
- Q-V** (a) Explain the graphical presentation of dynamic equilibrium with its proper example. (4)
 (b) Calculate the pOH and pH of 0.01 M solution of potassium hydroxide (KOH). (3)
- Q-VI** (a) What is petroleum. Name any three fractions showing the number of carbon atoms per molecules. (4)
 (b) Write a note on stratosphere. (3)

Transcribed and typeset by Tayarri from a publisher's scan of the board paper. The scan arrived with the correct options already shaded in; every option is given here unmarked. No answer key is included.

Section A's instructions are printed in Urdu on the original sheet; they are given here in English.

Board spellings and wording are kept exactly as printed.

Section A is an original answer sheet with a candidate name/roll-number block, omitted here.

Verbatim board slips: “AlCl₃” (Section A Q.3), “0.08 moles per dm³” and “function group” (Section B), “Sum of two reactions” beside three “rate constants” options (Section A Q.1). Section A Q.4 prints C₂H₃ as an option.