

**PUNJAB BOARD CLASS 12 CHEMISTRY (B)
PREVIOUS YEAR PAPER- 2018**

X

2038

ਸਲਾਨਾ ਪਰੀਖਿਆ ਪ੍ਰਣਾਲੀ

CHEMISTRY (Theory)

(Common for Science and Agriculture Groups)

Time: 03 Hours

Maximum Marks: 50

(ENGLISH VERSION)

- Note:
- (i) You must write the subject-code/paper-code 053/B in the box provided on the Title page of your answer-book.
 - (ii) Make sure that the answer-book contains 30 pages (including title page) and are properly serialied as soon as you receive it.
 - (iii) Question/s attempted after leaving blank pagels in the answer-book would not be evaluated.
 - (iv) Log tables may be asked for if needed.
 - (v) Use of simple calculator is allowed.
 - (vi) Marks allotted
 - (vii) The paper comprises of 26 questions. Attempt total 26 questions. Internal choice is given in Q. No. 19, 23, 24, 25 and 26.
 - (viii) Question No. 1 to 8 carry one mark each. Answer in one line.
 - (ix) Question No. 9 to 16 will be of two marks each. All questions are compulsory. They are short answer type questions.
 - (x) Question No. 17 to 23 will be of 4 marks each. All questions are compulsory. Internal choice is given for Question No. 19 and 23.
 - (xi) Question No. 24, 25 and 26 (Three questions) will be of 6 marks each. All questions are compulsory. Full internal choice is given.
 - (xii) Punjabi and Hindi versions of questions are translations of English version. Since translation is based on approximations, so in the case of any confusion consider English version to be correct.

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1. How is benzamide converted into benzylamine? 1
2. The chemical name of Vitamin E is _____ 1
3. Soft soaps are potassium salts of higher fatty acids. True/False 1
4. Out of 1M urea solution and 1M KCl solution, which one has higher freezing point? 1
5. What is Tollen's reagent? 1
6. Predict the products in the following reaction :

7. What are the units of Rate constant for First Order reaction? 1
8. The class of drugs used for the treatment of cut or wound is : 1
(a) Tranquillizers (b) Antiseptics (c) Antihistamins (d) Antipyretic
9. Why do transition metals have high enthalpies of atomization? 2
10. Why does acetylation of -NH₂ group of aniline reduce its activity? 2
11. Write two structural differences between DNA and RNA. 2
12. In a metallic oxide, oxide ions are arranged in cubic close packing. One sixth of the tetrahedral voids are occupied by cations P and one third of octahedral voids are occupied by cation Q 2
13. Explain Mond's process used for refining of nickel. 2
14. $[\text{Fe}(\text{CN})_6]^{-3}$ is low spin complex but $[\text{Fe}(\text{H}_2\text{O})_6]^{-3}$ is high spin complex. Explain.
15. For a reaction rate law expression is :
$$\text{Rate} = k[\text{A}]^{1/2} [\text{B}]^2$$

Can the reaction be an elementary? Explain.
16. What are biodegradable polymers? Give chemical equation for the preparation of any one biodegradable polymer. 4

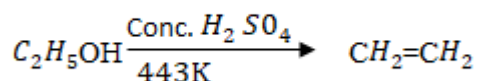
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17. Give reason : 4

- (a) H_3PO_4 is triprotic acid but H_3PO_3 , is diprotic acid. Why?
(b) PCl_3 and PCl_5 are hydrolysed differently. Why?

18. (a) Why phenols are acidic in nature? 4

(b) Explain the mechanism of the following reaction:



19. (a) What are Etard Reaction and Gattermann Koch Reaction? Give one example of each. 4

(b) Aldehydes are more reactive towards nucleophilic addition reactions than Ketones. Justify

Or

- (a) What are Claisen-Schmidt condensation and Kolbe's Reaction? Give one example of each.
(b) NH_3 and its derivative do not show nucleophilic addition reactions with aldehydes and ketone in high acidic medium. Justify.

20 (a) Analysis shows nickel oxide has the formula $Ni_{0.98}O_{1.00}$ What fraction of Ni exists as Ni^{3+} and Ni^{2+} ions in given oxide? 4

(b) Explain metal deficiency defect due to cation vacancies.

21. (a) When HgI_2 is added to the aqueous solution of KI, why there is an increase in osmotic pressure of solution? Commercially available HCl contains 38% HCl by mass.

(b) Commercially available HCl contains 38% HCl by mass. Calculate molarity of the solution.

22. (a) Give two differences between macromolecular colloids and associated colloids. 4

(b) Explain the term dialysis. How can it be increased?

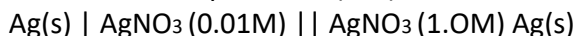
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23. (a) Explain Normal or Standard hydrogen electrode.

(b) How much amount of substance is deposited by passing one Faraday of electricity? 4

Or

Calculate the cell potential (EIN) of the following cell at 298K.



24. (a) Why do Zr and Hf have similar properties? 6

(b) What happens when $\text{K}_2\text{Cr}_2\text{O}_7$ is treated with H_2SO_4 and NaCl solution?

(c) Why transition metal forms alloys easily?

Or

(a) What happens when $\text{K}_2\text{Cr}_2\text{O}_7$ is heated strongly?

(b) Transition elements form complexes easily? Justify

(c) Why 5d transition series elements have higher ionization enthalpies than 4d transition series elements?

25. (a) Explain with example S_y mechanism.

(b) Dipole moment of chlorobenzene is lower than that of cyclohexylchloride. Give reason.

Or

How will you convert the following?

(a) Ethyl bromide to Ethylisocyanide

(b) Isopropylbromide to propene

(c) Aniline to Fluorobenzene

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- (d) Chlorobenzene to D.D.T.
- (e) Bromoethane to iodoethane
- (f) Chlorobenzene to Aniline

26. (a) Why ClF_3 exists but FCl_3 does not?

(b) Why ICl_3 is more active than I_2 ?

(c) Using VBT theory describe the shape of XeO_4

Or

(a) Why does fluorine shown anomalous behaviour?

(b) Why sulphuric acid is oily and viscous liquid?

(c) What happens when Cu reacts with cold dilute HNO_3 ?