

**PUNJAB BOARD CLASS 12 CHEMISTRY(C)
PREVIOUS YEAR PAPER- 2017**

Roll No. 2017058745..

053/C

Total No. of Questions : 26]

[Total No. of Printed Pages : 4

SS

2037

ANNUAL EXAMINATION SYSTEM

CHEMISTRY (Theory)

(Common for Science & Agriculture Groups)

(English Version)

(Evening Session)

Time allowed : Three hours

Maximum marks : 70

- Note :**
- (i) You must write the subject code/paper code **053/C** 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 serialized as soon as you receive it.
 - (iii) Question/s attempted after leaving blank page/s 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 to each question are indicated against it.
 - (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 Q. 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.

All questions are compulsory.

1 ✓ Under what conditions the van't Hoff factor is equal to one ?

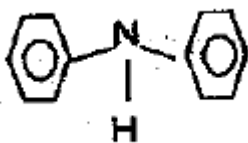
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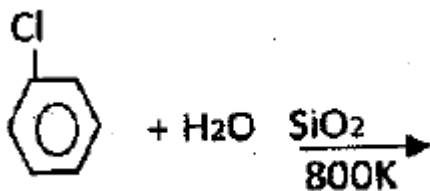
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2. Define Half life period of a reaction? 1

3. Write down IUPAC name of 1



4. Complete the following reaction:- 1



5. Write down the chain isomer of $\text{CH}_3\text{-CH}_2\text{-CH}_2\text{-CH}_3$. 1

6. Write down name of one antibiotic. 1

7. What are analgesics? 1

8. What are monosaccharides? 1

9. A solid has NaCl structure. If the radius of a cation A is 100 pm, what is the radius of anion B? 2

10. Calculate the time required for the completion of 90% of a reaction of first order kinetics
 $t_{1/2} = 44.1$ minutes 2

11. What is magnetic separation method for concentration of ore? 2

12. Write down differences between thermosetting polymers and thermoplastic polymers. 2

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13. Express coordination isomerism in $[\text{CO}(\text{NH}_3)_6] [\text{Cr}(\text{CN})_6]$. 2
14. What do you mean by inversion of cane sugar? 2
15. Write down Hinsberg's test for primary amines. 2
16. Write down the reaction involved in preparation of potassium permanganate from pyrolusite ore. 2
17. The density of chromium metal is 7.2 gm cm^{-3} . If the unit cell is cubic with an edge length of 289pm, determine the type of unit cell. (Atomic mass of chromium = 529amu) 4
18. (i) Prove that elevation in boiling point is a colligative property.
(ii) The boiling point of benzene is 353.23K. When 1.80g of a non-volatile solute was dissolved in 90g of benzene, the boiling point is raised to 354.11K. Calculate the molar mass of solute. (K_b for benzene = $2.53 \text{ K kg mol}^{-1}$) 2+2
19. What is corrosion? What are factors affecting corrosion? 4
- Or
- Write the Nernst equation and calculate the emf of the following cell at 298K:- 4
- $$\text{Cu(s)}/\text{Cu}^{2+}(0.130\text{M}) \parallel \text{Ag}^+(1.0 \times 10^{-1}\text{M})/\text{Ag(s)}$$
- Given $E^\circ (\text{Cu}^{2+}/\text{Cu}) = +0.34\text{V}$
 $E^\circ (\text{Ag}^+/\text{Ag}) = +0.80\text{V}$
20. Define Colloidal solution. Differentiate between lyophilic colloids and lyophobic colloids 4
21. (i) SO_2 act as both oxidising and reducing agent but H_2S acts as only reducing agent. Why? 2
(ii) Why halogens are coloured?
22. (i) Why do ethers possess dipole moment? 2
(ii) Boiling points of ether are lower than their corresponding isomeric alcohols. Why? 2
23. (i) Write Clemmensen reduction reaction. 1
(ii) Write Rosenmund reaction. 1
(iii) Formaldehyde gives Cannizzaro reaction whereas acetaldehyde does not. Why? 2

Or

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- (i) Aldehydes and ketones undergo a number of nucleophilic addition reactions. Why? 2
 (ii) Acetic acid is liquid while aromatic acids are solids. Give reasons. 2

24. (i) Unlike phosphorus, nitrogen shows a little tendency for catenation. Why? 2
 (ii) SF_6 is known but SH_6 is not known. Explain. 2
 (iii) Give hybridization and draw structure of XeF_4 . 2

Or

- (i) Explain the steps involved in manufacture of sulphuric acid by contact process. 3
 (ii) Write down the reaction of Ozone with Potassium Iodide. 2
 (iii) Draw the structure of ClF_3 . 1

25. (i) Why do transition elements show catalytic properties? 2
 (ii) Calculate Equivalent weight of $KMnO_4$ in neutral medium. 2
 (iii) What is the cause of Lanthanoid Contraction? 2

Or

- (i) Write down any 3 similarities between lanthanoids and actinoids. 3
 (ii) Out of CO^{2+} and ZN^{2+} , which will be paramagnetic and why? 2
 (iii) Draw the structure of permanganate ion. 1

26. Write the following reactions:

- (i) Balz-Scheimann Reaction 1
 (ii) Fittig's Reaction 1
 (iii) Gattermann Reaction 1
 (iv) Finkelstein Reaction 1
 (v) Diazotisation Reaction 1
 (vi) Grooves Process 1

Or

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- (i) The treatment of alkylhalide with aqueous KOH leads to the formation of alcohols while in presence of alcoholic KOH, alkenes are formed as a major product. Explain. 3
- (ii) How aryl halides react with sodium metal? Explain why alkyl halides show nucleophilic substitution reaction? 3