Page 1 of 2		IN UNIVERSITY JATION BOAR	, D	Total Time 3.5 hour Total Marks: 100		
Class: XII Time Allowed: 35 minutes Q1:	MODEL PAPER SUBJECT SE	EXAMINATION 2025 C: CHEMISTRY CCTION "A"		Marks: 17		
Note: Attempt all questions from	m this section. Each que	stion carries <u>ONE</u> mark.				
1. Which of the following alcoho	ols has the highest boiling r	point?				
A. Ethyl	B. N-pentyl	C. Iso-pentyl	D. Neo-pentyl			
2. The main objective of green cl	hemistry is to:					
A. Maximize industrial produc	ction	B. Minimize waste gener	ation			
C. Reduce energy consumptio	n	D. Develop environmentally friendly chemicals				
3. Catechol and resorcinol are ex	amples of:					
A. Chain isomers	B. Position isomers	C. Metamers	D. Functional group is	omers		
4. The region of the atmosphere	that extends from 11 km to	50 km above the Earth's su	urface is known as:			
A. Troposphere	B. Stratosphere	C. Mesosphere	D. Thermosphere			
5. All elements corrode except:						
A. Iron	B. Copper	C. Zinc	D. Gold			
6. The IUPAC name of isopropy	l alcohol is:					
A. 1-Propanol	B. 2-Propanol	C. 1-Butanol	D. 2-Butanol			
7. Alkanes are also known as:						
A. Olefins	B. Paraffins	C. Proteins	D. Acetylene			
8. The chemical commonly used	in fireworks is:					
A. Sodium bicarbonate	B. Bleaching powder	C. Potassium nitrate	D. Potash alum			
9. The pH of acid rain is:						
A. Between 7 and 8	B. Between 6 and 7	C. Below 5	D. Above 8			
10. The meta-directing group amo	ong the following is:					
AOH	BNH2	CCH3	DNO2			
11. Which of the following is a tri	hydric phenol?					
A. Resorcinol	B. Cresol	C. Pyrogallol	D. Catechol			
12. The number of five-membered	l and six-membered rings i	n a C60 Buckyball is:				
A. 12 and 12	B. 5 and 15	C. 12 and 20	D. 40 and 20			
13. The number of alpha amino ac	cids is:					
A. 19	B. 22	C. 25	D. 28			
14. The chief constituent of natura	al gas is:					
A. CH ₄	B. C_2H_6	$C. C_3H_8$	D. C_4H_{10}			
15. The oxidation of manganese in	n air results in the followin	g oxide:				
A. MnO	B. MnO ₃	C. Mn_2O_3	D. Mn_3O_4			
16. The most reactive molecule to	wards nucleophilic additio	n among the following is:	5 4 4 4			
A. Formaldehyde	B. Acetaldehyde	C. Diethyl ketone	D. Acetophenone			
17. Blood cancer is caused by:						
A. Methane	B. Ethane	C. Butane	D. Benzene			
(Practical Based Assessment) Marks: 15						
O2: Attempt ALL questions.						

1. Hira is comparing the reactivity of halogens in her chemistry notebook. She finds that chlorine can displace bromine and iodine from their respective salts, but iodine cannot displace chlorine or bromine.

A.	Arrange Cl ₂ , Br ₂ , and I ₂ in order of oxidizing strength.	[1 mark]
В.	Explain why halogens act as oxidizing agents.	[1 mark]
C.	Why is iodine a weaker oxidizing agent than chlorine?	[2 marks]

2. Amaan's father is a mechanic who explains the benefits of using alloys. He mentions brass, stainless steel, and duralumin.

А.	Name the constituent metals of any two of the above alloys.	[2 marks]
В.	State one use of each alloy in daily life.	[2 marks]
C.	Explain any two advantages of using alloys over pure metals.	[2 marks]

- 3. In a water testing lab, a student uses Mohr's method to test chloride levels in tap water using silver nitrate and potassium chromate.
- A. Write the balanced chemical reaction between chloride ions and silver nitrate. [1 mark] [1 mark]
- B. What color change indicates the endpoint of this titration?
- C. If 25 mL of tap water requires 20 mL of 0.1 M AgNO₃, calculate the concentration of Cl⁻ ions in the sample.

[3 marks]

END OF SECTION A

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32 Marks

Class: X	XII (III)	MODEL PAPER E	XAMINATION 2025				
Time: 2	hours 55 minutes	SUBJECT: CHEMISTRY SEC SECTION "B" SHORT	TION "B" AND SECTION "C" ANSWER QUESTIONS	Total Marks 68 36 Marks			
Q3: Note:	: Answer and <u>NINE</u> Part question. Select <u>FOUR</u> -part question from inorganic-General Chemistry and Five questions from Organic Chemistry. All question Carry equal marks.						
		INORGANIC – GENE	RAL CHEMISTRY				
i. ;;	Discuss the group trend o	f ionization energy in Group IIIA o	of the periodic table.				
11.	 Explain why: a. the boiling points of halogens increase as you move down the group in the periodic table. b. the binding energy of zinc is the least in the 3d series. c. the acidity of hydrogen halides increases from HF to HI. d. transition elements exhibit variable oxidation states. 						
iii. iv. v.	 Explain the four fundamental methods for testing wastewater. What is a flame test? Mention the flame colors of alkali metals. Write the balanced equations for the following reactions: a. Reaction of dichromate with ferrous sulfate b. Reaction of sodium hydroxide with chlorine 						
vi.	c. Reaction involvi Write down any three phy	ng bleaching powder /sical properties of bleaching powd	er.				
vii.	What is meant by the diag	gonal relationship? Mention three p	airs of representative elements that e	xhibit this relationship.			
		ORGANIC CH	IEMISTRY				
viii.	Convert the following:	n bromido into acotono	C. Ethyl chloride into othyl amina				
ix.	C. Ethyl chloride into Write four essential funct	o ethyl alcohol ions of proteins in the body.	D. Ethylamine into imine				
x. xi.	What is vital force theory Define the molecular orbi	? Why was it disapproved? ital structure of benzene.					
xii.	Write down the basic rule	es for IUPAC naming of organic co	mpounds.				
xiii. xiv.	Mention four functions of Define the following term	f lipids. is:					
	A. Catenation		B. Isomerism				
		SECTION "C" DETAILED AN	SWER QUESTIONS	32 Marks			
Note:	Attempt and Two questio question carry equal mark	ns one question from Inorganic – C ss.	General Chemistry and the other from	Organic Chemistry. Bothe			
		INORGANIC – GENH	RAL CHEMISTRY				
Q4.							
a) Discu b) Analy	ss the group trends of ator yze the chemical reactions	nic radii, ionization energy, and ele caused by the presence of nitrogen	ectronegativity for alkali metals. and sulfur oxides in the troposphere.				
Q5. a) Descr b) Defin	ibe the process of obtainin e binding energy. Explain	g 99.99% pure copper from chalco the trend of binding energy across	pyrite ore. the 3d series of transition elements.				
06		ORGANIC CH	IEMISTRY				
a) What	ara organomatallia compo	unde? How is Grignard rangent pro	morad				
b) Outlin	ne the structure of each of	the following:	spareu :				
i) 3,3-D v) 3-But	imethyl-1,4-pentadiyne en-1-ol	ii) α , β -dimethyl butyric acid vi) α -Methylbutyraldehyde	iii) Picric acid vii) 2,3,5-Trimethylhexane	iv) Butanoyl iodide viii) Methylphenol			
Q7.							
a) Descr b) Write	ibe the molecular orbital s the equations for the follo	tructure of benzene. wing possible conversions:					
i) Ethyl iv) 2°- a	alcohol to diethyl ether lcohol to carboxylic acid	ii) Phenol to benzoquinone	iii) Ethyl bromide to ethanol				
		END OF PA	PER				