

BSEB CAREER

Guess question pdf

Class: 12th

Bihar Board पर आधारित सवाल

Subject: chemistry

1. What do you mean by Frenkel's Defect?
 2. What do you mean by an Ideal solution ?
 3. Define Osmotic pressure ?
 4. Why Copper sulphate is not stored in zinc pot?
 5. In Nernst equation $E = E^0 - \frac{RT}{nF} \ln [M^{n+}]$, R and F stands for ?
 6. Define Cell constant ?
 7. What are Enzymes ?
 8. Why does PH_3 fumes in moist air ?
 9. Why H_2O is liquid and H_2S is gas at room temperature ?
 10. On what ground you will say that, scandium ($Z = 21$) is a transition metal ?
 11. Which ore is stronger reducing agent Cr^{2+} or Fe^{2+} ? Explain.
 12. What do you mean by inner-transition elements ?
 13. What do you mean by co-ordination number?
 14. Define Bidentate ligand?
 15. Aldehyde on oxidation will give ?
 16. Name one water soluble and one fat soluble Vitamin.
 17. Define molality and mole fraction.
 18. Differentiate between Condensation and Polymerisation.
 19. Explain ideal and non-ideal solution.
 20. Define Osmotic pressure.
 21. What do you mean by a Primary cell ?
 22. What do you mean by order of reaction?
 23. Physisorption decreases on increasing temperature. Why ?
 24. State and explain Faraday's 2nd law of electrolysis.
 25. Write the name and chemical composition of one important ore of each of Aluminium and copper.
 26. Name two Vitamins and their deficiency diseases.
 27. Define standard electrode potential.
 28. Write the structural formulae of the following :-
A. 2-Butanol
B. Ethyl acetate
 29. Differentiate between Molarity and Molality of a solution.
- बोर्ड परीक्षा की संपूर्ण तैयारी फ्री में करने के लिए **BSEB CAREER App** को डाउनलोड कीजिए। **Contact Number - +91 8920713254**
30. Discuss Raoult's law of relative lowering of vapour pressure.
 31. What is Tyndall effect? Explain.
 32. How would you convert the following ?
A. Formic Acid to Formaldehyde
B. Benzene to Aniline
 33. Explain, why the valency of inert gases is zero?
 34. What is carbocation ? Explain.
 35. Which one is stronger acid, HF or HCl ? why?
 36. What do you mean by unit cell?
 37. What is electrochemical cell? Explain with one example.

38. Discuss electrochemical principle about rusting of iron.
39. Explain in brief electro refining of metals.
40. How would you convert ethyl alcohol into chloroform?
41. Write IUPAC names of the following -
 (i) $\text{CH}_3 - \text{CH} = \text{CH} - \text{COOH}$
 CH
 (ii) $\text{C} - \text{N} - \text{CH}_2 - \text{CH}_2\text{CH}_3$
42. What do you mean by Tranquilizers?
43. Write short note on Bakelite.
44. Define physical and chemical adsorption with suitable examples.
45. Discuss the structure of $[\text{NiCl}_4]^{2-}$ with the help of Valence Bond Theory (VBT).
46. How would you obtain Acetone from Acetic acid?
47. "Formic acid behaves both as an aldehyde and as an acid." Explain.
48. How would you obtain phenol from aniline ?
49. Which bond is responsible for the stability of α -helix structure?
50. Discuss the reaction of Acetaldehyde and HCN in acidic medium.
51. What do you mean by the rate constant of a chemical reaction?
52. What are colligative properties? Write names of colligative properties.
53. What is Van't Hoff factor?
54. What happens when ethylamine is heated with HgCl_2 in the presence of CS_2 ?
55. Write two use of DNA finger printing.
56. "ZnO is white when cold, but yellow when hot" Explain.
57. How many tetrahedral and octahedral voids are there in closed packing of N spheres?
58. What is Henry's law of solubility?
59. Define Osmosis and Osmotic pressure.
60. What is specific conductance.
61. What do you understand by molecularity of a reaction?
62. What do you understand by physical and chemical adsorption?
63. Write the name and chemical formula of two chief ores of Zinc.
64. Write the formula and structure of pyrophosphoric acid.
65. Write two uses of Ozone.
66. Arrange HF, HCl, HBr and HI in the increasing order of their acidic strength.
67. What are preservatives of food ? Give examples.
68. Write one use of the following :
 (A) Paracetamol
 (B) Tincture of iodine
69. Amino acids are amphoteric. Explain.
70. Write structural formulae of the following compounds :
 (A) N-Ethylethanamine
 (B) N, N-Dimethylmethanamine
71. What is Hell Volhard Zelinsky (HVZ) reaction?
72. Write the name of two reagents which is capable of converting $-\overset{\text{C}}{\text{C}} = \text{O}$ group to $> \text{CH}_2$ group.
73. Write the names and formulae of two compounds which are obtained by the polymerisation of Acetaldehyde.
74. What is power alcohol ? Write its uses ?
75. What is Markownikoff's rule?
76. Explain Zinc oxide is white when cold but yellow when hot.
77. What do you understand by relative lowering of vapour pressure ?
78. What is reverse osmosis ?
79. What is Azeotropic mixture?
80. What is Arrhenius equation ?
81. Differentiate between adsorption and absorption.
82. What is homogeneous catalysis ? Give examples.
83. What is dialysis ?

84. Write names and chemical formulae of two ores of Aluminium.
85. What is the structure of SO_4^{2-} ?
86. Write down electronic configuration of the following .
 (i) Cr^{3+} ($z = 24$)
 (ii) Zn^{2+} ($z = 30$)
87. Write structural formula of EDTA.
88. What is elimination reaction?
89. What happens when phenol is heated with zinc powder?
90. What is Resenmund's reaction?
99. Define conductance and molar conductance.
100. Write Faraday's first law of electrolysis.
101. What are enzyme catalysts ?
102. What are surfactants ?
103. Write names and formulae of two ores of copper.
104. Differentiate between ores and minerals.
105. Electron affinity of chlorine is greater than that of Fluorine. Why ?
106. Halogen elements are strong oxidizing agents. Why?
107. What do you understand by interhalogens ? Give two examples.
108. Discuss the structure of XeF_2 .
109. What are f-block elements ? Why are they called so ?
110. Cu(I) is diamagnetic where as Cu(II) is paramagnetic. Explain.
111. Write IUPAC names of the following
 (i) $[\text{CO}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$
 (ii) $\text{K}_3[\text{Cr}(\text{C}_2\text{O}_4)_3]$
112. What are different constituents of tincture iodine?
113. What are elastomer ? Give one example of natural elastomer.
114. Define carbohydrates.
91. Write structural formula of the following :
 (i) Tartaric acid
 (ii) Isobutyric acid
92. How would you convert ethylamine to ethylalcohol?
93. What are Nucleic Acids ?
94. What are macromolecules .
95. What are metallic solids ? Give two examples.
96. What are Frankel defects ? Explain with examples.
97. What are isotonic solutions?
98. What are colligative properties of a solution ? Give examples.
115. What are specific conductance and molar conductance? Explain.
116. Differentiate between Lyophilic and Lyophobic colloids.
117. Give the name and formula of the chief ore of aluminium and copper.
118. Name two vitamins and their deficiency diseases.
119. Explain effective atomic number.
120. How will you convert the following ?
 a) Phenol to Benzene
 b) Chloroform to ethyne.
121. What happens when -
 a) Sodium acetate is heated with sodalime ?
 b) Ethyl alcohol is oxidised ?
122. Explain, why the valency of inert gases is zero.
123. Explain two important uses of formalin.
124. Explain mole fraction of solute.
125. Give the IUPAC names of the following:
 a) CH_3COOH
 b) $\text{H}_2\text{C} = \text{CH} - \text{CH}_2 - \text{OH}$
126. Write the molecular formulac of the following:
 a) 2-Butanol
 b) Formic acid

127. What is the geometrical shape of the following?
 a) sp^3
 b) sp
128. Explain the following :
 a) Calcination
 b) Roasting
129. Differentiate between the following giving suitable example:
 Flux and Slag.
130. Define standard electrode potential.
131. HI is stronger acid than HF. Why?
132. What is Schottky defect?
133. How can the following conversion be carried out?
 Chloroethane to Butane.
134. What is the structure of H_3PO_4 ?
135. Why is the vapour pressure of aqueous solution of glucose lower than that of water ?
136. What is food preservative?
137. What is roasting ?
138. What is enzyme catalysis ? Explain with example.
139. Aniline does not undergo Friedel-Crafts reaction. Give reason.
140. What is lanthanide contraction ?
141. The rate constant for a first order reaction is 200sec^{-1} . Calculate its half-life.
142. What do you mean by glycosidic linkage ?
143. Write the IUPAC names of the following compounds:
 (i) $[CoCl_2(NH_3)_4]Cl$
 (ii) $K_3[Fe(CN)_6]$
144. How will you convert acetic acid into methylamine ?
145. Noble gases has very low melting and boiling points. Discuss.
146. Can you store copper sulphate solution in a zinc pot?
147. Write the electronic configuration of the following elements :
 (i) $Sc(Z = 21)$
 (ii) $Cu(Z = 29)$
148. Differentiate between methanol and ethanol.
149. Why does white ZnO (solid) become yellow on heating ?
150. *p*-dichlorobenzene has higher melting point and solubility than those of *o*- and *m*-isomers. Discuss.
151. Why does ozone act as a powerful oxidising agent ?
152. Calculate the number of atoms in a body centred cubic unit cell.
153. Write two important properties of ionic crystals.
154. Write Faraday's 2nd law of Electrolysis.
155. What are colligative properties ? Give examples.
156. Define rate constant of a reaction.
157. Differentiate between adsorption and absorption.
158. Explain 'Emulsion' with examples.
159. What do you understand by Electro-refining of metals ?
160. "The boiling point of ammonia is greater than that of phosphine." Explain.
161. "Water is liquid but H_2S is a gas at room temperature." Explain.
162. Why do Zr and Hf exhibit similar properties ?
163. Calculate the Effective Atomic Number (EAN) of central metal atom in the following
 (i) $K_4[Fe(CN)_6]$.
 (ii) $Ni(CO)_4$
164. What happens when ethyl alcohol reacts with bleaching powder?
165. How would you obtain Diethyl ether from Ethyl alcohol?
166. Define Aldol condensation with an example.

167. Why does carboxylic acid behave as acid ?
Explain.
168. Write IUPAC names of the following :
- (i) $(\text{CH}_3)_2\text{CHNH}_2$
(ii) $\text{CH}_3 - \text{NH} - \text{CH}_2\text{CH}_3$
169. Describe in short the primary structure of protein.
170. Give an example of each of the following :
- (i) Synthetic polymer
(ii) Condensation polymer.
171. Write a short note on Anti-fertility medicine.
172. What do you understand by depression of freezing point?
173. Define mole fraction.
174. What are fuel cells ?
175. What is electrode potential ?
176. Define order of reaction.
177. What is zero order reaction ?
178. Write the unit of rate constant of a first order reaction.
179. Define Gold number.
180. What is shape selective catalysis ?
181. Write the structural formula of Phosphoric acid.
182. "Ozone behaves both as oxidising as well as reducing agents." Explain.
183. Arrange HCl , HBr , HF and HI in the increasing order of acidic strength.
184. What are noble gases ?
185. Why do transition elements form complex compounds ?
186. Aqueous solution of which of Cu^{2+} and Zn^{2+} is coloured and why?
187. What happens when ethyl bromide is heated with sodium ethoxide ?
188. What is rectified spirit?
189. Write the names and formulae of two isomer compounds represented by molecular formula $\text{C}_2\text{H}_6\text{O}$.
190. Give the names of compounds obtained by complete hydrolysis of DNA.
191. Write one application of each of the following:
- (i) Paracetamol
(ii) Tincture of iodine.

बोर्ड परीक्षा की संपूर्ण तैयारी फ्री में करने के लिए **BSEB CAREER App**
को डाउनलोड कीजिए। **Contact Number - +91 8920713254**

- Find the order of reaction of the following:
 A. $\text{Rate} = k[A]^{1/2}[B]^{3/2}$
 B. $\text{Rate} = k[A]^{3/2}[B]^{-1}$
- Write in brief about how Sulphuric acid is manufactured by contact process?
- What happens when
 - Concentrated H_2SO_4 is added to Calcium fluoride and heated?
 - SO_3 is passed through water.
- Write the electronic configuration of the following:
 - Cr^{3+}
 - Cu^+
 - Co^{2+}
 - Fe^{2+}
 - Mn^{2+}

[Atomic number of Cr = 24, Cu = 29, Co = 27, Fe = 26, Mn = 25]
- How will you convert the following?
 - Methane to Ethane
 - Ethanol to Ethyl acetate
 - Methane to Chloroform
 - Ethanal to Ethanoic acid
 - Acetic acid to Methane
- Write short notes on:
 - Inductive effect
 - Resonance
- Name two important ores of Iron. How is it extracted from its chief ore? Give reactions.
- What are the main sources of Iodine? How is it extracted from sea weeds?
- How is sulphuric acid manufactured by Lead Chamber process?
- What are Carbohydrates? How are they classified?
- What happens when?
 - Calcium acetate is heated.
 - Ethyl amine reacts with HNO_2 .
 - Acetylene is passed through red hot copper tube?
 - Benzene is heated with a mixture of concentrated HNO_3 and H_2SO_4 .
 - Ethyl alcohol is oxidised.
- Discuss the following
 - Kolbe's reaction
 - Carbylamine reaction
- What is first order reaction? Give two examples of first order reaction.
- Obtain an expression for the rate constant of a first order reaction.
- Define Osmosis and Osmotic pressure. How the molecular mass of a non volatile and non-electrolyte solute is determined with the help of Osmotic pressure measurement?
- What are the main sources of Iodine? How is Iodine extracted from sea weeds?
- Discuss the principle of extraction of Zinc metal from Zinc blende ore. How does Zn react with H_2SO_4 ?
- Differentiate between Methanoic acid and Ethanoic acid. How Acetic acid is obtained from Methyl cyanide?
- What do you understand by Depression in Freezing point? Obtain a mathematical expression to determine the molecular weight of a solute with the help of Depression in Freezing point
- What are electrode potential and standard electrode potential? Discuss the effect of concentration of a solution on standard electrode potential.
- What do you understand by Primary and Secondary cells? Explain by giving one examples of each.
- Write structural formulae of the following and give idea of their basicity.
 - H_3PO_3
 - H_3PO_4
 - H_3PO_2
- Starting from ethanoic acid how would you obtain the following?
 - Acetone
 - Methane
- Differentiate between DNA and RNA.
- Write structural formula of following compounds
 - 2-Aminoethanol
 - Tertiary butylamine
 - N-Ethyl ethanamine
 - N, N Dimethyl methanamine
 - N-Ethylcyclopentanamine

26. Write short notes on the following.
 (A) HVZ reaction
 (B) Hoffmann Bromamide reaction
27. What happens when
 (i) Formaldehyde reacts with ammonia ?
 (ii) Calcium formate is heated with calcium acetate ?
28. How would you bring about the following conversions?
 (i) Acetylene to ethyl alcohol
 (ii) Ethyl alcohol to diethyl ether

**बोर्ड परीक्षा की संपूर्ण तैयारी
 फ्री में करने के लिए BSEB
 CAREER App को डाऊनलोड
 कीजिए। Contact Number -
 +91 8920713254**

29. Write formula of the following as per IUPAC system.
 (i) Hexamineplatinum (IV) chloride
 (ii) Tetrabromidocuprate (II) ion
 (iii) Sodium dicyanidoaurate (I)
 (iv) Potassium tetrahyrzozincate (II)
 (v) Potassium dicyanoargentate (I)
30. I. What do you mean by first order reaction? Give two examples.
 II. Obtain an expression for rate constant of a first order reaction.
31. What are essential and non-essential amino acids ? Give examples.
32. Write notes of the following :
 a) Fermentation
 b) Condensation reaction.
33. Explain Faraday's Laws of Electrolysis.
34. How is sulphuric acid prepared by contact process ? Explain in short.
35. Explain the following :
 a) PCl_5 is known but NCl_5 is not known.
 b) H_2O is liquid but H_2S is gas.

36. Write short notes on the following :
 a) Inductive effect
 b) Resonance.
37. How does acidic potassium permanganate react with (i) Ferrous sulphate and (ii) SO_2 ?
38. (a) Complete each synthesis by giving missing products:
 (i) $\text{C}_6\text{H}_5\text{CHO} \xrightarrow{\text{HCN}}$
 (ii) $\text{H}_2\text{C} = \text{CH}_2 + \text{Br}_2 \xrightarrow{\text{CCl}_4}$
- (b) Explain why propanol has higher boiling point than that of butane.
39. State Henry's law and mention some of its important applications.
 (b) Classify each of the following as being either *p*-type or *n*-type semiconductor:
 (i) Ge doped with In
 (ii) Si doped with B
40. (a) Give the geometry of $[\text{NiCl}_4]^{2-}$.
 (b) $[\text{Cr}(\text{NH}_3)_6]^{3+}$ is paramagnetic while $[\text{Ni}(\text{CN})_4]^{2-}$ is diamagnetic. Why ?
41. What are carbohydrates? Classify them.
42. (a) Write the products of electrolysis in each of the following:
 (i) An aqueous solution of AgNO_3 with silver electrodes.
 (ii) An aqueous solution of AgNO_3 with platinum electrodes.
 (iii) An aqueous solution of CuCl_2 with platinum electrodes.
 (b) The half-life period for a first order reaction is 10 sec . How much time will it take to reduce the initial concentration of its $\frac{1}{16}$ th value ?
43. (i) Write the names and chemical formulae of two chief ores of Aluminium.
 (ii) Why is Cryolite mixed during the extraction of Aluminium by electrolysis of Alumina?

- (iii) What is Nessler's reagent? What happens when ammonia gas is passed through a solution of Nessler's reagent?
- (iv) Ammonia is a Lewis base. Why ?

बोर्ड परीक्षा की संपूर्ण तैयारी
फ्री में करने के लिए **BSEB**
CAREER App को डाउनलोड
कीजिए। **Contact Number -**
+91 8920713254

44. Write in brief about the following reactions:
- Hofmann Bromamide reaction
 - Clemmensen's reduction.
45. (i) Differentiate between DNA and RNA.
(ii) What are nucleic acids ?
46. (i) Differentiate between Ideal and Non-ideal solutions.
(ii) Define the following :
- Molarity
 - Molality
 - 'Mole-fraction.
47. What are primary and secondary cells ? Explain with examples.
48. Explain the following with examples :
- Paramagnetic substances
 - Ferromagnetic substances
49. Explain Raoult's law. How would you distinguish between ideal and non-ideal solutions on the basis of this law ?
50. What do you understand by inner orbital and outer orbital complex compounds ?
51. Explain the following:
- Formic acid is stronger acid than acetic acid.
 - The boiling point of carboxylic acid is higher than that of alcohols of same molecular weight.

All The Best