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प्रश्नपुस्तिका क्रमांक
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज
Question Booklet Series

B

**B.Sc. (Biotechnology) First Semester,
Examination, February/March-2022
BBT-1001
Chemistry-I**

Time : 1:30 Hours

Maximum Marks-100

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

निर्देश : —

1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही— सही भरे, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमें से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने हैं। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET) में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वाइंट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।
3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
5. ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।
6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक-पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।
7. निगेटिव मार्किंग नहीं है।

महत्वपूर्ण : —

प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।

1. SN_2 reaction is a _____ reaction.
(A) Unimolecular
(B) Bimolecular
(C) Trimolecular
(D) Zero
2. The rate of hydrolysis reaction is faster for SN_1 reaction :
(A) Tertbutyl chloride
(B) Methyl chloride
(C) Ethyl chloride
(D) Isopropyl chloride
3. For the synthesis of tertbutyl methyl ether, alkyl halides & alkoxide are :
(A) $\text{CH}_3 - \text{Cl}$ & $(\text{CH}_3)_3\text{C} - \text{ONa}$
(B) $(\text{CH}_3)_3\text{C} - \text{Cl}$ & $\text{CH}_3 - \text{ONa}$
(C) $\text{CH}_3 - \text{Cl}$ & $(\text{CH}_3)_3\text{C} - \text{Cl}$
(D) $\text{CH}_3 - \text{CH}_2 - \text{Cl}$ & $(\text{CH}_3)_3\text{C} - \text{ONa}$
4. _____ has the highest nucleophilic character.
(A) I^-
(B) F^-
(C) Cl^-
(D) Br^-
5. The wavelength range correspond to UV-Visible region :
(A) 100-200 nm
(B) 200-400 nm
(C) 400-800 nm
(D) 200-800 nm
6. Which functional group has the lowest CO stretching frequency :
(A) $-\text{COOR}$
(B) $-\text{CONH}_2$
(C) $-\text{COCl}$
(D) $-\text{CHO}$

7. The highest energy transition is :
(A) π - π^*
(B) σ - σ^*
(C) nonbonding- π^*
(D) nonbonding- σ^*
8. Which functional group has the highest CO stretching frequency :
(A) $-\text{COOH}$
(B) $-\text{CONH}_2$
(C) $-\text{COCl}$
(D) $-\text{CHO}$
9. The lowest energy transition is :
(A) π - π^*
(B) σ - σ^*
(C) nonbonding- π^*
(D) nonbonding- σ^*
10. Addition of bromine to an alkene is _____ addition.
(A) SN_2 & *TRANS*
(B) SN_1 & *TRANS*
(C) SN_2 & *CIS*
(D) SN_1 & *CIS*
11. Emission without a change in spin multiplicity is called :
(A) ISC
(B) Phosphorescence
(C) Fluorescence
(D) Singlet state
12. The reagent used for nitration reaction is :
(A) HNO_3
(B) $\text{HCl} + \text{HNO}_3$
(C) $\text{H}_2\text{SO}_4 + \text{HNO}_3$
(D) HNO_2

13. Sulphonation of benzene is a _____ reaction.
- (A) Elimination
 - (B) Electrophilic substitution
 - (C) Nucleophilic substitution
 - (D) Addition
14. The Lewis acid is used for Friedel craft reaction is :
- (A) LiCl
 - (B) FeCl_2
 - (C) AlCl_3
 - (D) MgCl_2
15. The catalyst used for halogenations reaction is :
- (A) Li
 - (B) Fe
 - (C) Al
 - (D) Mg
16. Which electrophile is generated in nitration reaction :
- (A) NO^+
 - (B) NO_2
 - (C) NO_2^+
 - (D) HNO_3
17. The r/d step of SN1 reaction is :
- (A) Carbocation formation
 - (B) Back side attack
 - (C) Nucleophile attack
 - (D) Product formation
18. Stereochemistry of SN2 reaction is :
- (A) Racemization
 - (B) Inversion
 - (C) Retention
 - (D) Mixture

19. Which carbocation is least stable :
- (A) $(\text{CH}_3)_3\text{C}^+$
 - (B) $(\text{CH}_3)_2\text{CH}^+$
 - (C) $\text{CH}_3\text{CH}_2\text{C}^+$
 - (D) CH_3^+
20. For E_1 elimination reaction 1 stands for :
- (A) One step
 - (B) First order
 - (C) One nucleophile
 - (D) One leaving group
21. Hydrogen bond _____ IR stretching frequency.
- (A) Increases
 - (B) Decreases
 - (C) Remains same
 - (D) None of them
22. The transition involve in Fluorescence is :
- (A) $S_0 - S_1$
 - (B) $S_1 - S_0$
 - (C) $S_1 - T_1$
 - (D) $T_1 - S_0$
23. The transition involve in ISC is :
- (A) $V_0 - S_1$
 - (B) $V_1 - S_1$
 - (C) $S_1 - T_1$
 - (D) $T_1 - S_0$
24. Which of the following has highest λ_{max} for $n \rightarrow \sigma^*$ transition ?
- (A) $\text{R} - \text{OH}$
 - (B) $\text{R} - \text{SH}$
 - (C) $\text{R} - \text{NH}_2$
 - (D) All

25. Beer Lambert's law gives the relation between which of the following ?
- (A) Reflected radiation and concentration
 - (B) Scattered radiation and concentration
 - (C) Energy absorption and concentration
 - (D) Energy absorption and reflected radiation
26. Jablonski diagram is related with :
- (A) ISC
 - (B) Phosphorescence
 - (C) Fluorescence
 - (D) All
27. If a reaction obeys Einstein law, quantum yield is _____.
- (A) 0
 - (B) 1
 - (C) <1
 - (D) >1
28. Which of the following can make difference in optical isomers ?
- (A) Heat
 - (B) Temperature
 - (C) Polarized light
 - (D) Pressure
29. According to perspective formula, the solid wedge indicates the group which is :
- (A) Towards reader
 - (B) Away from reader
 - (C) In plane of paper
 - (D) None

30. The energy required to rotate n-butane molecule about the carbon-carbon bond I is called _____.
(A) Rotational energy
(B) Torsional energy
(C) Enantiomeric
(D) Potential energy
31. The potential energy of n-butane is minimum for _____.
(A) Skew conformations
(B) Staggered conformations
(C) Eclipsed conformations
(D) Gauche
32. In gauche conformations, the methyl groups are _____.
(A) 60° apart
(B) 90° apart
(C) 180° apart
(D) 360° apart
33. In R/S nomenclature R & S stands for :
(A) Rectus & Sigmastar
(B) Right & Sigmastar
(C) Rectus & Sinistar
(D) Right & Sinistar
34. The potential energy of cyclohexane is maximum for _____.
(A) Chair conformations
(B) Half chair conformations
(C) Boat conformations
(D) Twist-Boat conformations

35. To express the relationship between the number of molecules reacting with the number of photons absorbed, the concept is known as _____.
(A) Photon analysis
(B) Quantum efficiency
(C) Quantum mechanics
(D) Photo degradation
36. A photochemical reaction takes place by the absorption of :
(A) Infrared radiation
(B) UV-VIS radiation
(C) Heat energy
(D) None
37. On radiative process from the following is :
(A) ISC
(B) Phosphorescence
(C) Fluorescence
(D) All
38. Spin inversion of electron takes place in the following process :
(A) ISC
(B) Phosphorescence
(C) Fluorescence
(D) All
39. Spin multiplicity value for triplet state is :
(A) 0
(B) 1
(C) 2
(D) 3

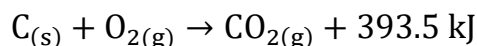
40. The most stable conformation of ethylene glycol :
- (A) Anti
 - (B) Gauche
 - (C) Fully eclipsed
 - (D) Partially eclipsed
41. Range of pH scale is :
- (A) 7 to 10
 - (B) 0 to 10
 - (C) 0 to 14
 - (D) 7 to 14
42. Level of pH found in antacid solution :
- (A) ≤ 6.5
 - (B) ≥ 7.0
 - (C) > 10
 - (D) > 14
43. Three unknown solutions are given with pH value of 6, 8 & 9.5 respectively.
Which solution will contain the maximum OH-ion ?
- (A) Solution sample-1
 - (B) Solution sample-2
 - (C) Solution sample-3
 - (D) Data are insufficient
44. pH of neutral salt is :
- (A) 7
 - (B) < 7
 - (C) > 7
 - (D) 0

45. Ammonium sulphate salt is :
(A) Basic salt
(B) Acidic salt
(C) Neutral salt
(D) Complex salt
46. When sulphuric acid reacts with eggshell it produces :
(A) Hydrogen gas
(B) Nitrogen gas
(C) Carbon monoxide
(D) Carbon dioxide gas
47. In the Chlor-alkali process, the byproduct gases are :
(A) Hydrogen only
(B) Hydrogen and oxygen gas
(C) Hydrogen and chlorine gas
(D) Chlorine and nitrogen gas
48. The following salt is not hygroscopic in nature :
(A) NaCl
(B) MgCl
(C) CaCl₂
(D) KCl
49. When more and more water is diluted with acids its H⁺ ion concentration will :
(A) Increase
(B) Decrease
(C) Remains the same
(D) Depends on the type of acids
50. When acids react with metal oxide it produces :
(A) Water and salt
(B) Salts and hydrogen gas
(C) Salts only
(D) No reaction takes place

51. For conversion $C_{(\text{graphite})} \rightarrow C_{(\text{diamond})}$ the ΔS is :

- (A) Zero
- (B) Positive
- (C) Negative
- (D) Unknown

52. Consider the following diagram for a reaction :



The nature of the reaction is :

- (A) Exothermic
- (B) Endothermic
- (C) Reaction at equilibrium
- (D) None of the above

53. A necessary condition for adiabatic change is :

- (A) $\Delta T = 0$
- (B) $\Delta P = 0$
- (C) $q = 0$
- (D) $w = 0$

54. Which one of the following statements is false ?

- (A) Temperature is a state function
- (B) Work is a state function
- (C) Change in the state is completely defined when the initial and final states are specified
- (D) Work appears at the boundary of the system

55. Which among the following is not a state function ?

- (A) Internal energy
- (B) Free energy
- (C) Work
- (D) Enthalpy

56. In an adiabatic process, no transfer of heat takes place between system and surroundings. The correct option for free expansion of an ideal gas under adiabatic condition from the following is :
- (A) $q = 0, \Delta T \neq 0, W = 0$ $q = 0, \Delta T \neq 0, W = 0$
 - (B) $q \neq 0, \Delta T = 0, W = 0$ $q \neq 0, \Delta T = 0, W = 0$
 - (C) $q = 0, \Delta T = 0, W = 0$ $q = 0, \Delta T = 0, W = 0$
 - (D) $q = 0, \Delta T = 0, W \neq 0$ $q = 0, \Delta T = 0, W \neq 0$
57. The enthalpies of formation of all elements in their standard states is :
- (A) Unity
 - (B) Zero
 - (C) Less than zero
 - (D) Different for each element
58. Thermodynamics is not concerned about :
- (A) Energy changes involved in a chemical reaction
 - (B) The extent to which a chemical reaction proceeds
 - (C) The rate at which a reaction proceeds
 - (D) The feasibility of chemical reaction
59. The variations in enthalpy that cannot be detected per calorimeter can be detected with the aid of :
- (A) Newton's law
 - (B) Hess's law
 - (C) Krebs law
 - (D) Ohm's law
60. The energy required to break a given covalent bond is :
- (A) Bond energy
 - (B) Bond enthalpy
 - (C) Bond dissociation energy
 - (D) All of above

61. Changes in enthalpy in an exothermic reaction is :
- (A) Positive
 - (B) Negative
 - (C) Constant
 - (D) Neutral
62. The first law of thermodynamics states that energy cannot be :
- (A) Created only
 - (B) Destroyed only
 - (C) Converted
 - (D) Created and destroyed
63. Hess's law states that a chemical reaction is independent of the route by which chemical reactions take place while keeping the same :
- (A) Initial conditions only
 - (B) Final conditions only
 - (C) Mid-conditions
 - (D) Initial and final condition
64. The standard enthalpy change of neutralization involves the reaction of an acid with an alkali to form 1 mol of :
- (A) Water
 - (B) Oxygen
 - (C) Nitrogen
 - (D) Anhydrous salt
65. The change in the energy between a chemical reaction and the surroundings at constant temperature is called :
- (A) Enthalpy change
 - (B) Enthalpy
 - (C) Enthalpy profile
 - (D) Dynamic enthalpy

66. To initiate a reaction the minimum energy which is required to break bonds is called :
- (A) Bond energy
 - (B) Activation energy
 - (C) Breaking energy
 - (D) Ionization energy
67. The standard condition for enthalpy changes are :
- (A) The pressure of 100 kPa
 - (B) Temperature 298K
 - (C) Normal physical state
 - (D) All of above
68. The application of law of thermodynamics to the enthalpy change was done by :
- (A) Newton
 - (B) Hess's
 - (C) Lewis
 - (D) Sophocles
69. In what manner will increase of pressure affect the following equation:
- $$\text{C(s)} + \text{H}_2\text{O} \rightarrow \text{CO(g)} + \text{H}_2\text{(g)}$$
- (A) Shift in the reverse direction
 - (B) Shift in the forward direction
 - (C) Increase in the yield of hydrogen
 - (D) No effect
70. The equilibrium between water and its vapor in an open vessel :
- (A) Can be achieved
 - (B) Depends upon pressure
 - (C) Cannot be achieved
 - (D) Depends upon temperature

71. When a catalyst is added to a reversible reaction in equilibrium state the value of the equilibrium constant :
- (A) Increases
 - (B) Decreases
 - (C) Does not change
 - (D) Becomes zero
72. A vessel at equilibrium contains SO_3 , SO_2 and O_2 now some helium gas is added so that total pressure increases while temperature and volume remain constant. According to Le Chatelier Principle the dissociation of SO_3^{2-} :
- (A) Decreases
 - (B) Remain constant
 - (C) Increases
 - (D) Change unpredictably
73. The chemical equilibrium of a reversible reaction is not influenced by :
- (A) Temperature
 - (B) Pressure
 - (C) Catalyst
 - (D) Concentration
74. Le Chatelier Principle is applicable to :
- (A) Heterogeneous reaction
 - (B) Homogeneous reaction
 - (C) Irreversible reaction
 - (D) System in equilibrium
75. The equilibrium constant of a reaction is 300. If the volume of reaction flask is tripled the equilibrium constant is :
- (A) 300
 - (B) 600
 - (C) 900
 - (D) 100

76. For a reversible reaction the concentration of the reactants is doubled, then the equilibrium constant :
- (A) Becomes one-fourth
 - (B) Is doubled
 - (C) Is halved
 - (D) Remains the same
77. The role of a catalyst in a reversible reaction is to :
- (A) Alter the equilibrium constant of the reaction
 - (B) Increase the rate of the forward reaction
 - (C) Allow the equilibrium to be achieved quickly
 - (D) Decrease the rate of backward reaction
78. In which of the following cases does the reaction go farthest to completion ?
- (A) $K = 1$
 - (B) $K = 10$
 - (C) $K = 10^{-2}$
 - (D) $K = 10^2$
79. The solubility product expression for tin(II) hydroxide, $\text{Sn}(\text{OH})_2$, is :
- (A) $[\text{Sn}^{2+}][\text{OH}^-]$
 - (B) $[\text{Sn}^{2+}]^2[\text{OH}^-]$
 - (C) $[\text{Sn}^{2+}][\text{OH}^-]^2$
 - (D) $[\text{Sn}^{2+}]^3[\text{OH}^-]$
80. The solubility product expression for silver(I), sulfide, using x to represent the molar concentration of silver(I) and y to represent the molar concentration of sulfide, is formulated as :
- (A) xy
 - (B) x^2y
 - (C) xy^2
 - (D) x^2y^2

81. Consider the following solubility data for various chromates at 25°C-

Salt	K_{sp}
Ag_2CrO_4	9.0×10^{-12}
BaCrO_4	2.0×10^{-10}
PbCrO_4	1.8×10^{-14}

The chromate that is the most soluble in water at 25°C on a molar basis is :

- (A) Ag_2CrO_4
(B) BaCrO_4
(C) PbCrO_4
(D) None of these
82. The molar solubility of PbBr_2 is 2.17×10^{-3} M at a certain temperature. Calculate K_{sp} for PbBr_2 :
- (A) 6.2×10^{-6}
(B) 6.4×10^{-7}
(C) 4.1×10^{-8}
(D) 3.4×10^{-6}
83. The solubility of silver sulfate in water at 100°C is approximately 1.4 g per 100 ml. What is the solubility product of this salt at 100°C ?
- (A) 5.7×10^{-8}
(B) 3.5×10^{-7}
(C) 8.3×10^{-6}
(D) 3.6×10^{-4}
84. Concept of entropy change is applicable for thermodynamic law :
- (A) I-law
(B) II-law
(C) Both
(D) None
85. What is the molar solubility, s of $\text{Ba}_3(\text{PO}_4)_2$ in terms of K_{sp} ?
- (A) $s = K_{sp}^{1/2}$
(B) $s = K_{sp}^{1/5}$
(C) $s = [K_{sp}/27]^{1/5}$
(D) $s = [K_{sp}/108]^{1/5}$

86. For $\text{Cu}(\text{OH})_2$, $K_{\text{sp}} = 1.6 \times 10^{-19}$. What is the molar solubility of $\text{Cu}(\text{OH})_2$?
- (A) $3.4 \times 10^{-7} \text{ M}$
 - (B) $6.4 \times 10^{-7} \text{ M}$
 - (C) $2.7 \times 10^{-11} \text{ M}$
 - (D) $5.1 \times 10^{-10} \text{ M}$
87. Many lead salts are often used as pigments. If PbSO_4 were used in an Unglazed ceramic bowl, how many milligrams of lead (II) could dissolve per liter of water ?
- (A) 43
 - (B) 35
 - (C) 11
 - (D) 28
88. Ag_3PO_4 would be least soluble at 25°C in :
- (A) 0.1 M AgNO_3
 - (B) 0.1 M HNO_3
 - (C) Pure water
 - (D) 0.1 M Na_3PO_4
89. The molar solubility of PbCl_2 in 0.20 M $\text{Pb}(\text{NO}_3)_2$ solution is :
- (A) $1.7 \times 10^{-4} \text{ M}$
 - (B) $9.2 \times 10^{-3} \text{ M}$
 - (C) $1.7 \times 10^{-5} \text{ M}$
 - (D) $4.6 \times 10^{-3} \text{ M}$
90. When we mix together, from separate sources, the ions of a slightly soluble ionic salt, the salt will precipitate if $Q_{\text{sp}} \text{ _____ } K_{\text{sp}}$, and will continue to precipitate until $Q_{\text{sp}} \text{ _____ } K_{\text{sp}}$.
- (A) Is greater than; equals
 - (B) Is less than; is greater than
 - (C) Is less than; equals
 - (D) Equals; is less than
91. SN_1 reaction is a _____ reaction.
- (A) Unimolecular
 - (B) Bimolecular
 - (C) Trimolecular
 - (D) Zero

92. Which of the following pairs of compounds gives a precipitate when aqueous solutions of them are mixed ? Assume that the concentrations of all compounds are 1.0 M immediately after mixing :
- (A) CuBr_2 and K_2CO_3
 - (B) HNO_3 and NH_4I
 - (C) BaCl_2 and KClO_4
 - (D) Na_2CO_3 and H_2SO_4
93. A swimming pool was sufficiently alkaline so that CO_2 absorbed from the Air produced in the pool a solution which was 2×10^{-4} M in CO_3^{2-} M. if the pool water was originally 4×10^{-3} M in Mg^{2+} , 6×10^{-4} M in Ca^{2+} and 8×10^{-7} M in Fe^{2+} , then a precipitate should form of :
- (A) Only MgCO_3
 - (B) Only CaCO_3
 - (C) Only FeCO_3
 - (D) Only CaCO_3 and FeCO_3
94. When equal volumes of the solutions indicated are mixed, precipitation should occur only for :
- (A) 2×10^{-3} M Mg^{2+} + 2×10^{-3} M OH^-
 - (B) 2×10^{-1} M Ba^{2+} + 2×10^{-3} M F^-
 - (C) 2×10^{-3} M Ca^{2+} + 2×10^{-2} M OH^-
 - (D) 2×10^{-3} M Ca^{2+} + 2×10^{-3} M OH^-

95. At what pH will $\text{Cu}(\text{OH})_2$ start to precipitate from a solution with $[\text{Cu}^{2+}] = 0.0015 \text{ M}$?
- (A) 9.0
(B) 8.0
(C) 6.0
(D) 9.4
96. What is the pH of a saturated solution of $\text{Mg}(\text{OH})_2$?
- (A) 3.5
(B) 10.1
(C) 10.9
(D) 10.5
97. Which solid will precipitate first if an aqueous solution of Na_2CrO_4 at 25°C is slowly added to an aqueous solution containing $0.001 \text{ M Pb}(\text{NO}_3)_2$ and $0.100 \text{ M Ba}(\text{NO}_3)_2$ at 25°C ?
- (A) $\text{BaCrO}_4(\text{s})$
(B) $\text{NaNO}_3(\text{s})$
(C) $\text{PbCrO}_4(\text{s})$
(D) $\text{Pb}(\text{NO}_3)_2(\text{s})$
98. A solution is 0.0010 M in both Ag^+ and Au^+ . Some solid NaCl is added slowly until the solid AgCl just begins to precipitate. What is the concentration of Au^+ ions at this point? K_{sp} for $\text{AgCl} = 1.8 \times 10^{-10}$ and for $\text{AuCl} = 2.0 \times 10^{-13}$.
- (A) $2.0 \times 10^{-10} \text{ M}$
(B) $4.5 \times 10^{-7} \text{ M}$
(C) $1.8 \times 10^{-7} \text{ M}$
(D) $1.1 \times 10^{-6} \text{ M}$
99. Which one of the following salts does not contain water of crystallization?
- (A) Blue vitriol
(B) Baking soda
(C) Washing soda
(D) Gypsum
100. What is formed when zinc reacts with sodium hydroxide?
- (A) Zinc hydroxide sodium
(B) Sodium zincate and hydrogen gas
(C) Sodium zinc-oxide and hydrogen gas
(D) Sodium zincate and water

Rough Work / रफ कार्य

Rough Work / रफ कार्य

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