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प्रश्नपुस्तिका क्रमांक
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज
Question Booklet Series

D

**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. 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
2. Which one of the following salts does not contain water of crystallization ?
 - (A) Blue vitriol
 - (B) Baking soda
 - (C) Washing soda
 - (D) Gypsum
3. 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 AgCl = 1.8×10^{-10} and for AuCl = 2.0×10^{-13} .
 - (A) 2.0×10^{-10} M
 - (B) 4.5×10^{-7} M
 - (C) 1.8×10^{-7} M
 - (D) 1.1×10^{-6} M
4. 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 M $\text{Pb}(\text{NO}_3)_2$ and 0.100 M $\text{Ba}(\text{NO}_3)_2$ at 25°C ?
 - (A) $\text{BaCrO}_4(\text{s})$
 - (B) $\text{NaNO}_3(\text{s})$
 - (C) $\text{PbCrO}_4(\text{s})$
 - (D) $\text{Pb}(\text{NO}_3)_2(\text{s})$
5. 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
6. At what pH will $\text{Cu}(\text{OH})_2$ start to precipitate from a solution with $[\text{Cu}^{2+}] = 0.0015$ M?
 - (A) 9.0
 - (B) 8.0
 - (C) 6.0
 - (D) 9.4

7. When equal volumes of the solutions indicated are mixed, precipitation should occur only for :
- (A) $2 \times 10^{-3} \text{ M Mg}^{2+} + 2 \times 10^{-3} \text{ M OH}^{-}$
 - (B) $2 \times 10^{-1} \text{ M Ba}^{2+} + 2 \times 10^{-3} \text{ M F}^{-}$
 - (C) $2 \times 10^{-3} \text{ M Ca}^{2+} + 2 \times 10^{-2} \text{ M OH}^{-}$
 - (D) $2 \times 10^{-3} \text{ M Ca}^{2+} + 2 \times 10^{-3} \text{ M OH}^{-}$
8. A swimming pool was sufficiently alkaline so that CO_2 absorbed from the Air produced in the pool a solution which was $2 \times 10^{-4} \text{ M}$ in CO_3^{2-} M. if the pool water was originally $4 \times 10^{-3} \text{ M}$ in Mg^{2+} , $6 \times 10^{-4} \text{ M}$ in Ca^{2+} and $8 \times 10^{-7} \text{ M}$ 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
9. 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

10. SN_1 reaction is a _____ reaction.
(A) Unimolecular
(B) Bimolecular
(C) Trimolecular
(D) Zero
11. When we mix together, from separate sources, the ions of a slightly soluble ionic salt, the salt will precipitate if Q_{sp} _____ K_{sp} , and will continue to precipitate until Q_{sp} _____ K_{sp} .
(A) Is greater than; equals
(B) Is less than; is greater than
(C) Is less than; equals
(D) Equals; is less than
12. 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) $4.6 \times 10^{-3} \text{ M}$
13. 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
14. 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
15. 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) $5.1 \times 10^{-10} \text{ M}$

16. What is the molar solubility, s of $\text{Ba}_3(\text{PO}_4)_2$ in terms of K_{sp} ?
- (A) $s = K_{\text{sp}}^{1/2}$
 (B) $s = K_{\text{sp}}^{1/5}$
 (C) $s = [K_{\text{sp}}/27]^{1/5}$
 (D) $s = [K_{\text{sp}}/108]^{1/5}$
17. Concept of entropy change is applicable for thermodynamic law :
- (A) I-law
 (B) II-law
 (C) Both
 (D) None
18. 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}
19. 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}
20. 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

21. 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
22. 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) $[\text{Sn}^{2+}]^3[\text{OH}^-]$
23. In which of the following cases does the reaction go farthest to completion ?
- (A) $K = 1$
 - (B) $K = 10$
 - (C) $K = 10^{-2}$
 - (D) $K = 10^2$
24. 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
25. 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

26. 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
27. Le Chatelier Principle is applicable to :
- (A) Heterogeneous reaction
 - (B) Homogeneous reaction
 - (C) Irreversible reaction
 - (D) System in equilibrium
28. The chemical equilibrium of a reversible reaction is not influenced by :
- (A) Temperature
 - (B) Pressure
 - (C) Catalyst
 - (D) Concentration
29. 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
30. 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

31. 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
32. 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
33. The application of law of thermodynamics to the enthalpy change was done by :
- (A) Newton
 - (B) Hess's
 - (C) Lewis
 - (D) Sophocles
34. The standard condition for enthalpy changes are :
- (A) The pressure of 100 kPa
 - (B) Temperature 298K
 - (C) Normal physical state
 - (D) All of above
35. 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

36. 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
37. 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
38. 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
39. The first law of thermodynamics states that energy cannot be :
- (A) Created only
 - (B) Destroyed only
 - (C) Converted
 - (D) Created and destroyed
40. Changes in enthalpy in an exothermic reaction is :
- (A) Positive
 - (B) Negative
 - (C) Constant
 - (D) Neutral

41. The energy required to break a given covalent bond is :
(A) Bond energy
(B) Bond enthalpy
(C) Bond dissociation energy
(D) All of above
42. 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
43. 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
44. 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
45. 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) $q = 0, \Delta T \neq 0, W = 0$
(B) $q \neq 0, \Delta T = 0, W = 0$
(C) $q = 0, \Delta T = 0, W = 0$
(D) $q = 0, \Delta T = 0, W \neq 0$

46. Which among the following is not a state function ?
(A) Internal energy
(B) Free energy
(C) Work
(D) Enthalpy
47. 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
48. A necessary condition for adiabatic change is :
(A) $\Delta T = 0$
(B) $\Delta P = 0$
(C) $q = 0$
(D) $w = 0$
49. Consider the following diagram for a reaction :
$$\text{C}_{(s)} + \text{O}_{2(g)} \rightarrow \text{CO}_{2(g)} + 393.5 \text{ kJ}$$

The nature of the reaction is :
(A) Exothermic
(B) Endothermic
(C) Reaction at equilibrium
(D) None of the above
50. For conversion $\text{C}_{(\text{graphite})} \rightarrow \text{C}_{(\text{diamond})}$ the ΔS is :
(A) Zero
(B) Positive
(C) Negative
(D) Unknown

51. 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
52. 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
53. The following salt is not hygroscopic in nature :
- (A) NaCl
 - (B) MgCl
 - (C) $CaCl_2$
 - (D) KCl
54. 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
55. When sulphuric acid reacts with eggshell it produces :
- (A) Hydrogen gas
 - (B) Nitrogen gas
 - (C) Carbon monoxide
 - (D) Carbon dioxide gas
56. Ammonium sulphate salt is :
- (A) Basic salt
 - (B) Acidic salt
 - (C) Neutral salt
 - (D) Complex salt

57. pH of neutral salt is :
- (A) 7
 - (B) < 7
 - (C) > 7
 - (D) 0
58. 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
59. Level of pH found in antacid solution :
- (A) ≤ 6.5
 - (B) ≥ 7.0
 - (C) > 10
 - (D) > 14
60. Range of pH scale is :
- (A) 7 to 10
 - (B) 0 to 10
 - (C) 0 to 14
 - (D) 7 to 14
61. The most stable conformation of ethylene glycol :
- (A) Anti
 - (B) Gauche
 - (C) Fully eclipsed
 - (D) Partially eclipsed

62. Spin multiplicity value for triplet state is :
- (A) 0
 - (B) 1
 - (C) 2
 - (D) 3
63. Spin inversion of electron takes place in the following process :
- (A) ISC
 - (B) Phosphorescence
 - (C) Fluorescence
 - (D) All
64. On radiative process from the following is :
- (A) ISC
 - (B) Phosphorescence
 - (C) Fluorescence
 - (D) All
65. A photochemical reaction takes place by the absorption of :
- (A) Infrared radiation
 - (B) UV-VIS radiation
 - (C) Heat energy
 - (D) None
66. 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

67. The potential energy of cyclohexane is maximum for _____.
(A) Chair conformations
(B) Half chair conformations
(C) Boat conformations
(D) Twist-Boat conformations
68. In R/S nomenclature R & S stands for :
(A) Rectus & Sigmastar
(B) Right & Sigmastar
(C) Rectus & Sinistar
(D) Right & Sinistar
69. In gauche conformations, the methyl groups are _____.
(A) 60° apart
(B) 90° apart
(C) 180° apart
(D) 360° apart
70. The potential energy of n-butane is minimum for _____.
(A) Skew conformations
(B) Staggered conformations
(C) Eclipsed conformations
(D) Gauche
71. 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

72. 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
73. Which of the following can make difference in optical isomers ?
- (A) Heat
 - (B) Temperature
 - (C) Polarized light
 - (D) Pressure
74. If a reaction obeys Einstein law, quantum yield is _____.
- (A) 0
 - (B) 1
 - (C) <1
 - (D) >1
75. Jablonski diagram is related with :
- (A) ISC
 - (B) Phosphorescence
 - (C) Fluorescence
 - (D) All
76. 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

77. Which of the following has highest λ_{\max} for $n \rightarrow \sigma^*$ transition ?
- (A) $R - OH$
 - (B) $R - SH$
 - (C) $R - NH_2$
 - (D) All
78. The transition involve in ISC is :
- (A) $V_0 - S_1$
 - (B) $V_1 - S_1$
 - (C) $S_1 - T_1$
 - (D) $T_1 - S_0$
79. The transition involve in Fluorescence is :
- (A) $S_0 - S_1$
 - (B) $S_1 - S_0$
 - (C) $S_1 - T_1$
 - (D) $T_1 - S_0$
80. Hydrogen bond _____ IR stretching frequency.
- (A) Increases
 - (B) Decreases
 - (C) Remains same
 - (D) None of them
81. For E_1 elimination reaction 1 stands for :
- (A) One step
 - (B) First order
 - (C) One nucleophile
 - (D) One leaving group
82. Which carbocation is least stable :
- (A) $(CH_3)_3C^+$
 - (B) $(CH_3)_2CH^+$
 - (C) $CH_3CH_2C^+$
 - (D) CH_3^+

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

89. 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
90. Emission without a change in spin multiplicity is called :
(A) ISC
(B) Phosphorescence
(C) Fluorescence
(D) Singlet state
91. Addition of bromine to an alkene is _____ addition.
(A) SN_2 & *TRANS*
(B) SN_1 & *TRANS*
(C) SN_2 & *CIS*
(D) SN_1 & *CIS*
92. The lowest energy transition is :
(A) $\pi\text{-}\pi^*$
(B) $\sigma\text{-}\sigma^*$
(C) nonbonding- π^*
(D) nonbonding- σ^*
93. Which functional group has the highest CO stretching frequency :
(A) -COOH
(B) -CONH_2
(C) -COCl
(D) -CHO
94. The highest energy transition is :
(A) $\pi\text{-}\pi^*$
(B) $\sigma\text{-}\sigma^*$
(C) nonbonding- π^*
(D) nonbonding- σ^*

95. Which functional group has the lowest CO stretching frequency :
(A) $-\text{COOR}$
(B) $-\text{CONH}_2$
(C) $-\text{COCl}$
(D) $-\text{CHO}$
96. The wavelength range correspond to UV-Visible region :
(A) 100-200 nm
(B) 200-400 nm
(C) 400-800 nm
(D) 200-800 nm
97. _____ has the highest nucleophilic character.
(A) I^-
(B) F^-
(C) Cl^-
(D) Br^-
98. 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) $\text{CH}_3 - \text{CH}_2 - \text{Cl}$ & $(\text{CH}_3)_3\text{C} - \text{ONa}$
99. The rate of hydrolysis reaction is faster for SN_1 reaction :
(A) Tertbutyl chloride
(B) Methyl chloride
(C) Ethyl chloride
(D) Isopropyl chloride
100. SN_2 reaction is a _____ reaction.
(A) Unimolecular
(B) Bimolecular
(C) Trimolecular
(D) Zero

Rough Work / रफ कार्य

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