

80 previous-year questions, every one with the official answer and a worked solution.

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NSEC 2012

Time: 120 minutes · Maximum marks: 240 · Questions: 80

1. An electron releasing group will not stabilize which of the following groups ?

- (A) Carbocation
(C) Free radical

- (B) carbanion
(D) any of the above

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

2. The bond order for a species with the configuration $\sigma 1s^2 \sigma^* 1s^2 \sigma 2s^2 \sigma^* 2s^2 \sigma p_x^1$ will be -

(A) 1

(B) $1/2$

(C) Zero

(D) $3/2$

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

3. The widest range over which electronic excitations in organic compounds occur, is -

(A) 200 nm – 780 nm

(B) 220 nm – 500 nm

(C) 250 nm – 700 nm

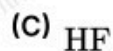
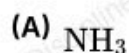
(D) 290 nm – 1000 nm

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

4. Which of the following compounds has the least tendency to form hydrogen bonds between molecules ?

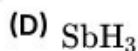
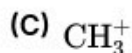
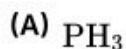


[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

5. The species in which the central atom uses sp^2 hybrid orbitals is -



[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

6. $\alpha\text{-D}(+)\text{glucose}$ and $\beta\text{-D}(+)\text{glucose}$ are -

(A) Enantiomers

(B) Geometrical isomers

(C) Epimers

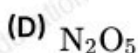
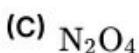
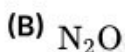
(D) Anomers

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

7. The chemical formula of 'laughing gas' is -



[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

8. The enzyme which hydrolyses triglycerides to fatty acids and glycerol is -

(A) Lipase

(B) maltase

(C) pepsin

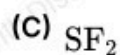
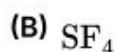
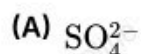
(D) zymase

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

9. In which of the following ion/molecule, the 'S' atom does not assume sp^3 hybridization ?



[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

10. The most stable free radical which can be isolated is -

(A) Trityl radical

(B) Diphenyl methyl radical

(C) 2,4,6-Tri-ter-butylphenoxy radical

(D) tert-butyl radical

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

11. Phosphine is prepared by the reaction of

(A) P and HNO_3

(B) P and H_2SO_4

(C) P and NaOH

(D) P and H_2S

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

12. Pheromones are chemical substances which are

(A) formed by fermentation process of fungi

(B) secreted by endocrine glands of man

(C) secreted by insects

(D) plant growth hormones

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

13. Which of the following does not reduce Benedict's solution ?

(A) Glucose

(B) Fructose

(C) Sucrose

(D) Aldehyde

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

14. The inorganic precipitate which acts as a semipermeable membrane is

- (A) Calcium phosphate (B) Nickel phosphate
(C) Plaster of paris (D) Copper ferrocyanide

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

15. The genetic material of a cell is made of

- (A) nucleic acids (B) proteins
(C) carbohydrates (D) fats

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

16. Lanthanide contraction is caused due to

- (A) the appreciable shielding on outer electrons by 4f electrons from the nuclear charge
(B) the appreciable shielding on outer electrons by 5d electrons from the nuclear charge
(C) the same effective nuclear charge from Ce to Lu
(D) the imperfect shielding on outer electrons by 4f electrons from the nuclear charge

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

17. Which of the following contain maximum number of electrons in the antibonding molecular orbitals

- (A) O_2^{2-} (B) O_2
(C) O_2^{-1} (D) O_2^{+}

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

18. Lattice energy for an ionic compound is calculated by using

- (A) Kirchoff's equation (B) Markownikoff's rule
(C) Born Haber cycle (D) Carnot cycle

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

19. If the radius of the first Bohr orbit is r , then the de-Broglie wavelength in the third Bohr orbit is

(A) $2\pi r$

(B) $9r$

(C) $r/3$

(D) $6\pi r$

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

20. The IUPAC name of $[\text{Co}(\text{ONO})(\text{NH}_3)_5\text{Cl}_2]$ is

(A) pentamminenitrocobalt(II)chloride

(B) pentamminenitrosocobalt(III)chloride

(C) pentamminenitritocobalt(III)chloride

(D) pentammineoxo-nitrocobalt(III)chloride

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

21. In the Vander wall equation of state for a non ideal gas the term that accounts for intermolecular force is

(A) $(V - b)$

(B) RT

(C) $(P + \frac{a}{v^2})$

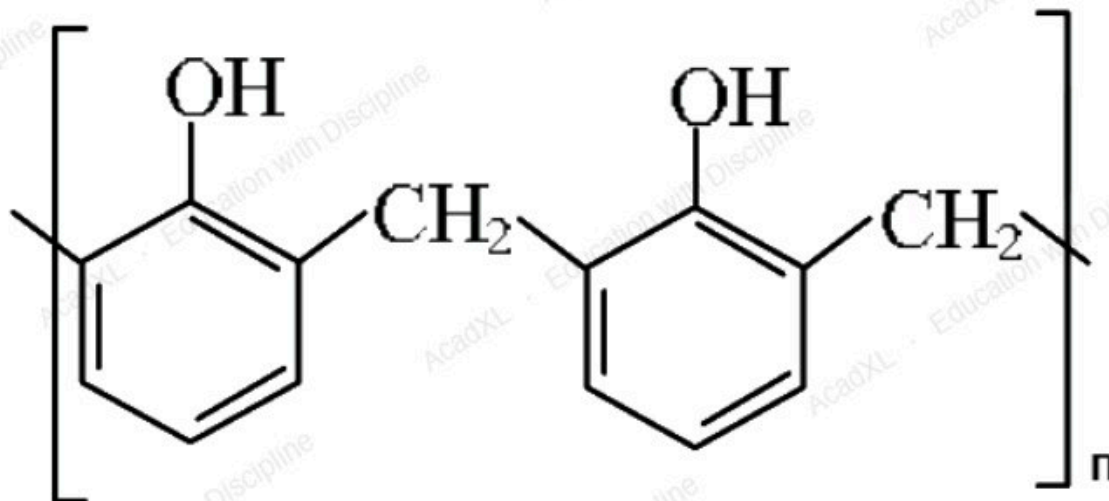
(D) $1/RT$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

22. The structure given below represents



(A) Isoprene Rubber

(B) Bakelite

(C) PVC

(D) Nylon 6,6

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

23. The maximum amount of CH_3Cl that can be prepared from 20 g of CH_4 and 10 g of Cl_2 by the following reaction, is $\text{CH}_4 + \text{Cl}_2 \rightarrow \text{CH}_3\text{Cl} + \text{HCl}$, (pressure that no other reaction is taking place)

(A) 3.625 mole

(B) 0.141 mole

(C) 1.41 mole

(D) 0.365 mole

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

24. Which isomer of xylene can give three different monochloroderivative ?

(A) o-xylene

(B) m-xylene

(C) p-xylene

(D) xylene cannot give a monochloro derivative

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

25. The most Carbocations, carbanions, free radicals and radical cation are reactive carbon intermediates. Their hybrid orbitals respectively are

(A) sp^2 , sp^2 , sp^3 , sp

(B) sp^2 , sp^2 , sp , sp^3

(C) sp^2 , sp^3 , sp^2 , sp

(D) sp^3 , sp^2 , sp , sp^2

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

26. effective electrolyte to cause the flocculation of a negatively charged arsenium sulphide colloid is :

(A) NaCl

(B) $BaCl_2$

(C) $K_3Fe(CN)_6$

(D) $AlCl_3$

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

27. The electronegativities of acetylene, ethylene and ethane are in the order

(A) ethylene > acetylene > ethane

(B) acetylene > ethylene > ethane

(C) ethane > acetylene > ethylene

(D) acetylene > ethane > ethylene

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

28. A catalyst accelerates a reaction primarily by stabilizing the

(A) substrate

(B) product

(C) intermediate

(D) transition state

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

29. The number of transition states in a unimolecular nucleophilic substitution (S_N^1) reaction is

(A) 0

(B) 1

(C) 2

(D) 3

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

30. The dipole moments of halo compounds are in the order

- (A) $\text{CHCl}_3 > \text{CCl}_4 > \text{CHCl}_2 > \text{cis-CHCl} = \text{CHCl}$ (B) $\text{cis-CHCl} = \text{CHCl} > \text{CHCl}_3 > \text{CH}_2\text{Cl}_2 > \text{CCl}_4$
(C) $\text{cis-CHCl} = \text{CHCl} > \text{CH}_2\text{Cl}_2 > \text{CHCl}_3 > \text{CCl}_4$ (D) $\text{CHCl}_3 > \text{CHCl}_2 > \text{cis-CHCl} = \text{CHCl} > \text{CCl}_4$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

31. Which of the following information is not provided by a reaction mechanism ?

- (A) Which bonds are formed and which bonds are broken (B) Which intermediates and transition states are formed
(C) Energy content of the reacting species (D) Which is the slowest step

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

32. Tollen's reagent is

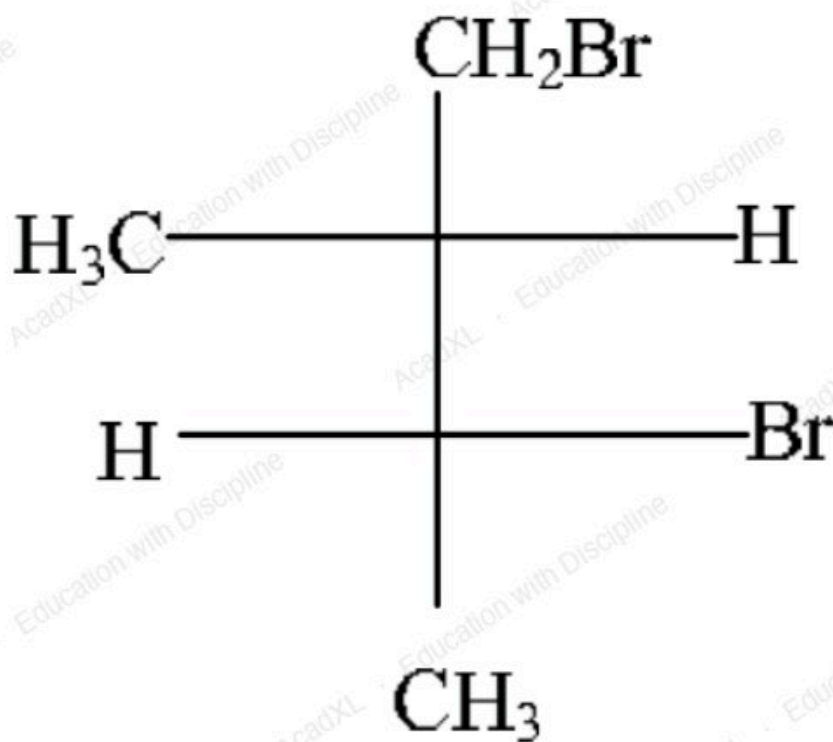
- (A) Cu_2O (B) $[\text{Cu}(\text{OH})_4]^{2-}$
(C) Ag_2O (D) $[\text{Ag}(\text{NH}_3)_2]^+$

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

33. The R/S designation for the following stereoisomer of 1,3-dibromo-2-methylbutane is



(A) 2R, 3R

(B) 2R, 3S

(C) 2S, 3R

(D) 2S, 3S

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

34. The bond energy of B-F bond in BF_3 is 646 kJ mol^{-1} , while that of N-F bond in NF_3 is 280 kJ mol^{-1} . This is because

(A) N is more electronegative than B

(B) The atomic mass of N is higher than that of B

(C) The B-F bond gets a partial double bond character due to p-p overlap

(D) N has a lone pair of electrons while B does not have

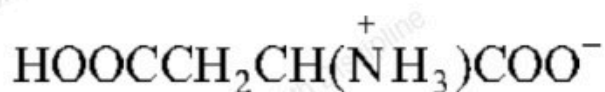
[3 marks, -1 for a wrong answer]

ANSWER: C

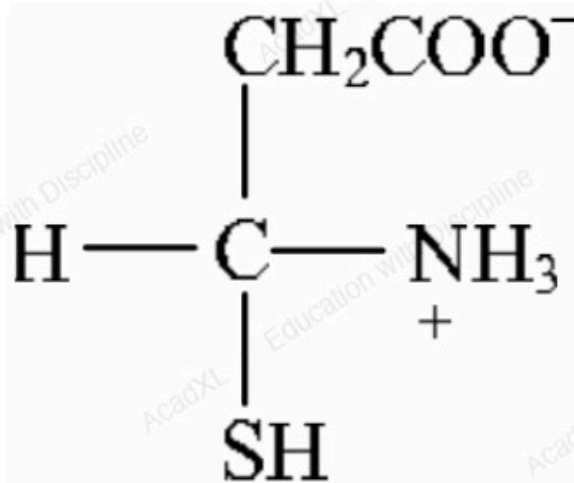
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35. The amino acid that cannot be obtained by hydrolysis of proteins is -

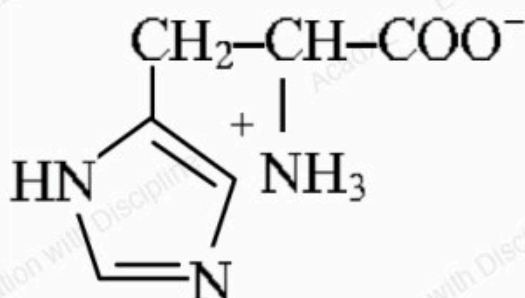
(A)



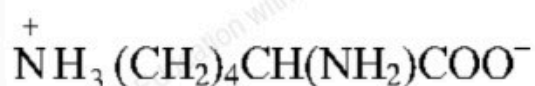
(B)



(C)



(D)



[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

36. When equal volumes of the following solutions are mixed precipitation of AgCl ($k_{SP} = 1.8 \times 10^{-10}$) will occur only with -

(A) 10^{-4} M Ag^+ and 10^{-4} M Cl^-

(B) 10^{-5} M Ag^+ and 10^{-5} M Cl^-

(C) 10^{-6} M Ag^+ and 10^{-6} M Cl^-

(D) 10^{-10} M Ag^+ and 10^{-10} M Cl^-

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

37. The quantum numbers for the 19th electron of Cr ($Z = 24$) are -

(A) $n = 3, l = 0, m = 0, s = +\frac{1}{2}$

(B) $n = 4, l = 0, m = 0, s = +\frac{1}{2}$

(C) $n = 3, l = 2, m = 2, s = +\frac{1}{2}$

(D) $n = 4, l = 2, m = 2, s = +\frac{1}{2}$

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

38. The oxidation of SO_2 by O_2 to SO_3 is an exothermic reaction. The yield of SO_3 can be maximized if -

(A) temperature is increased and pressure is kept constant

(B) temperature is decreased and pressure is increased

(C) both temperature and pressure are increased

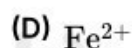
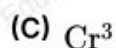
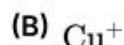
(D) both temperature and pressure are decreased

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

39. Which of the following ion is colourless -

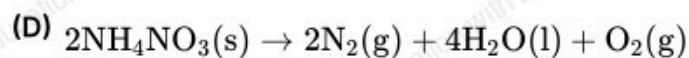
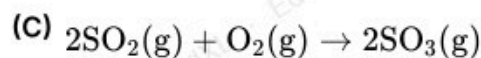
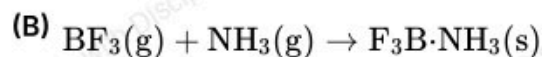
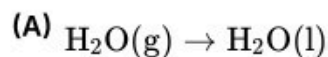


[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

40. Which of the following has a positive entropy change ?



[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

41. Equal volumes of two solutions of $\text{pH} = 2$ and $\text{pH} = 4$ are mixed together. The pH of the resulting solution will be -

(A) 2.0

(B) 3.1

(C) 4.2

(D) 2.3

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

42. A first order reaction is 20% complete in 600 s. The time required to complete 75% of the same reaction will be -

(A) 3120 s

(B) 3720 s

(C) 4320 s

(D) 4920 s

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

43. The vapour density of gas A is four times that of B. If the molecular mass of B is M then molecular mass of A is -

(A) M

(B) $4M$

(C) $M/4$

(D) $2M$

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

44. Among the isomers of dimethylcyclohexanes, the chiral ones are -

(A) 1,2-trans and 1,3-cis

(B) 1,2-cis and 1,3-trans

(C) 1,3-trans and 1,4-trans

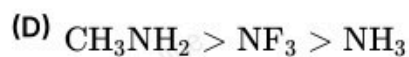
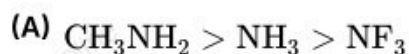
(D) 1,2-trans and 1,3-trans

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

45. The relative basic strengths of NH_3 , CH_3NH_2 and NF_3 are in the order -

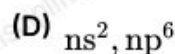
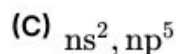
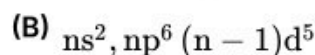
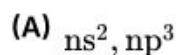


[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

46. The outermost electronic configuration of the most electronegative element is -



[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

47. The conductivity of a metal decreases with increase in temperature because -

(A) the kinetic energy of the electrons increases

(B) the movement of electrons becomes haphazard

(C) the ions start vibrating

(D) the metal becomes hot and starts emitting radiation

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

48. The lanthanide compound which is used as a most powerful liquid laser after dissolving in selenium oxychloride is

(A) Cerium oxide

(B) Neodymium oxide

(C) Promethium sulphate

(D) Cerium sulphate

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

49. The solubility of SrF_2 in water at 303 K is $9.55 \times 10^{-5} \text{ mol dm}^{-3}$. The solubility product of the salt is -

(A) 8.7×10^{-17}

(B) 9.1×10^{-11}

(C) 9.55×10^{-5}

(D) 3.48×10^{-12}

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

50. The amount of electricity required to deposit 1.0 mole of aluminium from a solution of AlCl_3 will be -

(A) 1 faraday

(B) 3 faraday

(C) 0.33 faraday

(D) 1.33 faraday

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

51. In the reaction, $2\text{KClO}_3 \rightarrow 2\text{KCl} + 3\text{O}_2$ when 36.75 g of KClO_3 is heated, the volume of oxygen evolved at N.T.P. will be -

(A) 9.74 dm^3

(B) 8.92 dm^3

(C) 10.08 dm^3

(D) 22.4 dm^3

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

52. The pK_a value of H_2O of picric acid, acetic acid and phenol are in the order -

(A) picric acid 0.4, acetic acid 4.75, phenol 10.0

(B) acetic acid 0.4, picric acid 4.75, phenol 10.0

(C) picric acid 0.4, phenol 4.75, acetic acid 10.0

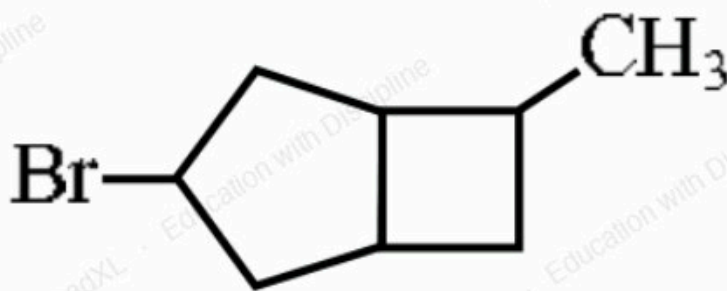
(D) phenol 0.4, acetic acid 4.75, picric acid 10.0

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

53. The correct IUPAC name of the following compound is -



- (A) 2-Bromo-5-methylbicyclo[5.4.0] heptanes (B) 3-Bromo-7-methylbicyclo[3.2.0] heptanes
(C) 3-Bromo-6-methylbicyclo[3.2.0] heptanes (D) 2-Methyl-6-bromobicyclo[2.3.0] heptanes

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

54. The first ionization potential of Na, Mg, Al and Si are in the order -

- (A) $\text{Na} < \text{Mg} > \text{Al} < \text{Si}$ (B) $\text{Na} > \text{Mg} > \text{Al} > \text{Si}$
(C) $\text{Na} < \text{Mg} < \text{Al} > \text{Si}$ (D) $\text{Na} > \text{Mg} > \text{Al} < \text{Si}$

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

55. The first four ionization energy values of a metal are 191, 587, 872 and 5962 kcal/mol respectively. The number of valence electrons in the element is -

- (A) 1 (B) 2
(C) 3 (D) 5

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

56. An aqueous solution of a salt 'X' gives white precipitate with dilute H_2SO_4 . The same solution with a few drops of aq. KI gives golden yellow precipitate which dissolves on heating. The salt 'X' is -

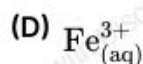
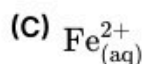
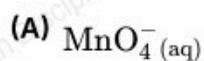
- (A) $\text{Ba}(\text{NO}_3)_2$ (B) $\text{Sr}(\text{NO}_3)_2$
(C) $\text{Pb}(\text{NO}_3)_2$ (D) $\text{Zn}(\text{NO}_3)_2$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

57. The rate of the reaction $\text{MnO}_4^- (\text{aq}) + 8\text{H}^+ (\text{aq}) + 5\text{Fe}^{2+} (\text{aq}) \rightarrow \text{Mn}^{2+} (\text{aq}) + 5\text{Fe}^{3+} (\text{aq}) + 4\text{H}_2\text{O}$ can be best measured by monitoring colorimetrically the concentration of -



[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

58. Which of the following observation indicates colligative properties ? I. A 0.5 M NaBr solution has a higher vapour pressure than 0.5 M BaCl_2 . II. A 0.5 M NaOH solution freezes at a lower temperature than pure water. III. Pure water freezes at a higher temperature than pure ethanol

(A) only I

(B) only II

(C) only III

(D) I and II

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

59. A 500 g toothpaste sample has 0.4 g fluoride concentration. The fluoride concentration in terms of ppm will be -

(A) 200

(B) 400

(C) 500

(D) 800

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

60. Among the following carbon centered reactive intermediates, the carbon that has octet of electrons is -

(A) carbocation

(B) carbanion

(C) carbene

(D) radical

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

61. The molecule that has maximum covalent character -

(A) NaH

(B) Na₂S

(C) CaCl₂

(D) SnCl₄

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

62. The mode of expression in which the concentration remains independent of temperature is -

(A) molarity

(B) normality

(C) formality

(D) molality

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

63. The enthalpy changes for the following reactions are $C_{\text{diamond}} + O_{2(g)} \rightarrow CO_{2(g)}$, $\Delta H = -395.3 \text{ kJ mol}^{-1}$; $C_{\text{graphite}} + O_{2(g)} \rightarrow CO_{2(g)}$, $\Delta H = -393.4 \text{ kJ mol}^{-1}$. The enthalpy change for the transition $C_{\text{diamond}} \rightarrow C_{\text{graphite}}$ will be -

(A) -3.8 kJ mol^{-1}

(B) $+3.8 \text{ kJ mol}^{-1}$

(C) -1.9 kJ mol^{-1}

(D) $+1.9 \text{ kJ mol}^{-1}$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

64. The sequence of steps involved in aromatic nucleophilic substitution involving a benzyne intermediate is -

(A) addition-elimination

(B) elimination-addition

(C) addition-rearrangement

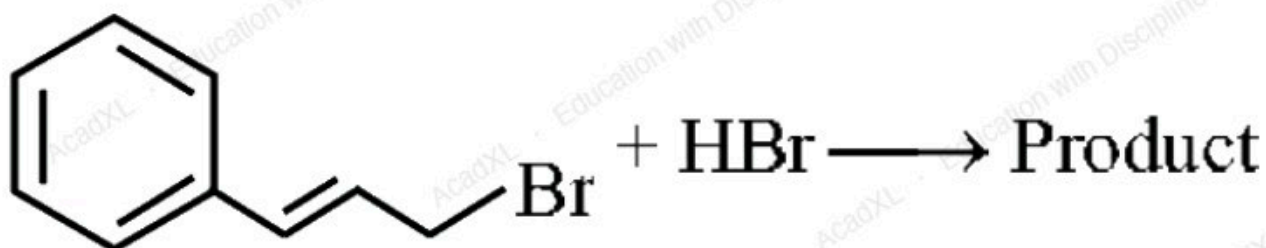
(D) elimination-rearrangement

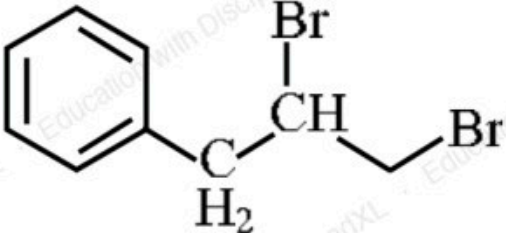
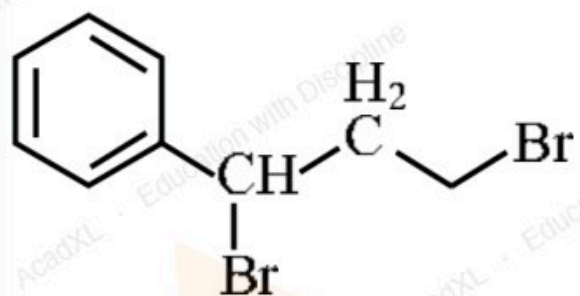
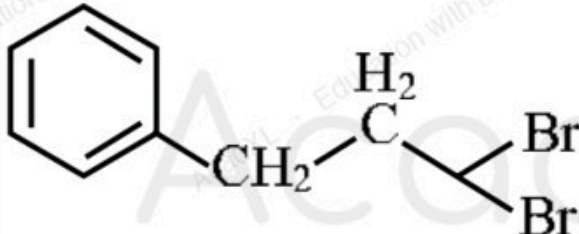
[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

65. Cinnamyl bromide ($\text{C}_6\text{H}_5\text{CH}=\text{CHCH}_2\text{Br}$) reacts with HBr to give a product. The product in the above reaction is -



- (A) 
- (B) 
- (C) 
- (D) This reaction cannot take place

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

66. The commercial name of calcium hydride is -

- (A) lime (B) hydrolyth
(C) slaked lime (D) calgon

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

67. The number of moles of KMnO_4 that will be needed to react completely with one mole of ferrous oxalate $[\text{Fe}(\text{C}_2\text{O}_4)]$ in acidic solution is -

(A) 1

(B) $\frac{2}{5}$

(C) $\frac{3}{5}$

(D) $\frac{4}{5}$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

68. Protein and DNA being charged molecules, can be separated by -

(A) Electrophoresis

(B) Centrifugation

(C) Filtration

(D) Spectrophotometry

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

69. The biomolecule which does not have a secondary structure is -

(A) protein

(B) lipid

(C) DNA

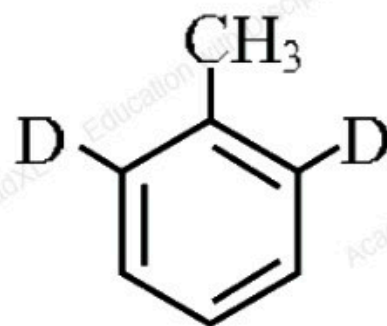
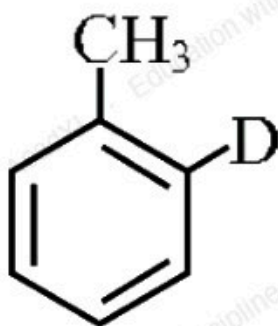
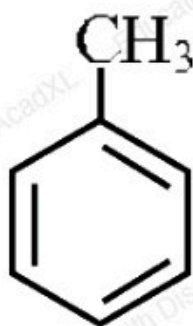
(D) RNA

[3 marks, -1 for a wrong answer]

ANSWER: B

No solution stored for this question.

70. The rate of o-nitration of the above compounds, (I) toluene, (II) 2-D-toluene and (III) 2,6-D₂-toluene are in the following order -



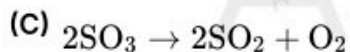
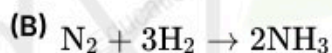
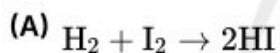
- (A) I > II > III
(B) II > I > III
(C) III > I > II
(D) The rate is the same for all the three compounds

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

71. In which of the following reaction is $K_p > K_c$

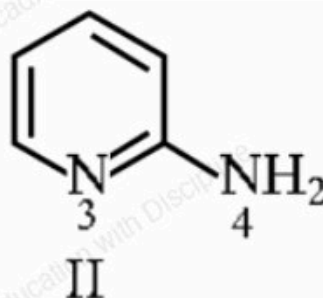
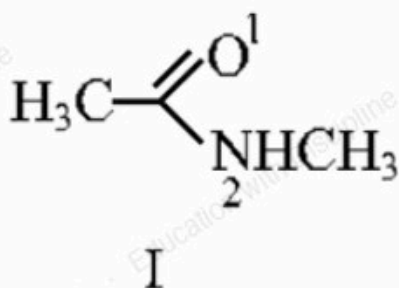


[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

72. The preferred sites of protonation in the following compounds are



(A) 1 and 3

(B) 2 and 4

(C) 1 and 4

(D) 2 and 3

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

73. Which of the following vibrational modes show no IR absorption bands

(A) Symmetric CO_2 stretch

(B) Antisymmetric CO_2 stretch

(C) Symmetric $\text{S}=\text{C}=\text{O}$ stretch

(D) Antisymmetric $\text{S}=\text{C}=\text{O}$ stretch

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

74. The crimson colour imparted to flame is due to a salt of -

(A) barium

(B) copper

(C) calcium

(D) strontium

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

75. Which of the following weighs less when weighed in magnetic field ?

(A) ScCl_3

(B) FeCl_3

(C) TiCl_3

(D) VCl_3

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

76. Essential vitamin required for the production of RBCs is -

(A) Folic acid

(B) Nicotinic acid

(C) Pantothenic acid

(D) None of the above

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

77. For the reaction $\text{NH}_4^+ + \text{NO}_2^- \rightarrow \text{N}_2 + 2\text{H}_2\text{O}$ the following data was recorded (concentrations in M,

Rate in M s^{-1}): Set 1: $[\text{NH}_4^+] = 0.010$, $[\text{NO}_2^-] = 0.020$, Rate = 0.020; Set 2: $[\text{NH}_4^+] = 0.015$,

$[\text{NO}_2^-] = 0.020$, Rate = 0.030; Set 3: $[\text{NH}_4^+] = 0.010$, $[\text{NO}_2^-] = 0.010$, Rate = 0.005

(A) rate = $K[\text{NH}_4^+][\text{NO}_2^-]$

(B) rate = $K[\text{NH}_4^+]^2[\text{NO}_2^-]$

(C) rate = $K[\text{NH}_4^+][\text{NO}_2^-]^2$

(D) rate = $K[\text{NH}_4^+]^2[\text{NO}_2^-]^2$

[3 marks, -1 for a wrong answer]

ANSWER: C

No solution stored for this question.

78. In a nitration experiment, 10.0 g of benzene gave 13.2 g of nitrobenzene. The percentage yield is -

(A) 83.5%

(B) 62.7%

(C) 88.9%

(D) 26.7%

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

79. The rate constant of a reaction increases by 5% when the temperature is increased from 27°C to 28°C . Therefore, the energy of activation of the reaction is -

(A) 36.6 kJ mol^{-1}

(B) 46.6 kJ mol^{-1}

(C) 16.6 kJ mol^{-1}

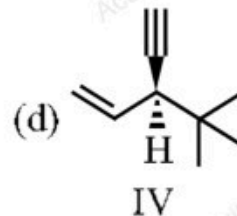
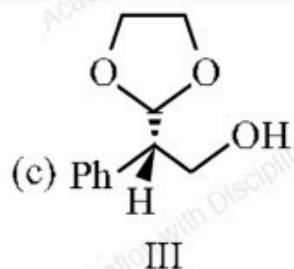
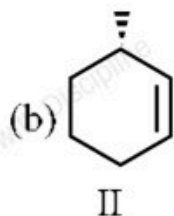
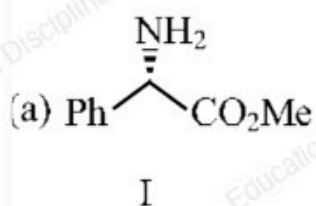
(D) 26.6 kJ mol^{-1}

[3 marks, -1 for a wrong answer]

ANSWER: A

No solution stored for this question.

80. Which one of the following compounds has R configuration ?



(A) I

(B) II

(C) III

(D) IV

[3 marks, -1 for a wrong answer]

ANSWER: D

No solution stored for this question.

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Answer key

1. B	2. B	3. A	4. D	5. C	6. D
7. B	8. A	9. B	10. C	11. C	12. C
13. C	14. D	15. A	16. D	17. A	18. C
19. D	20. C	21. C	22. B	23. B	24. B
25. C	26. D	27. B	28. D	29. C	30. C
31. C	32. D	33. A	34. C	35. B	36. A
37. B	38. B	39. B	40. D	41. D	42. B
43. B	44. D	45. A	46. C	47. B	48. B
49. D	50. B	51. C	52. A	53. C	54. A
55. C	56. C	57. A	58. D	59. D	60. B
61. D	62. D	63. C	64. B	65. B	66. B
67. C	68. A	69. B	70. D	71. C	72. A
73. A	74. D	75. A	76. A	77. C	78. A
79. A	80. D				

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