INSTITUTE NAME & LOGO

MHT-CET – EXAM YEAR

Chem : Full Portion Paper

Question Booklet Version	Roll No.	Question Booklet Sr. No.
(Write this number on your Answer Sheet)	**Answer Sheet No.**	(Write this number on your Answer Sheet)

Duration: 45 Minutes   Total Marks: 50

This is to certify that, the entries of MHT-CET Roll No. and Answer Sheet No. have been correctly written and verified.

Candidate's Signature   **Invigilator's Signature**

Instructions To Candidate

1. This question booklet contains 50 Objective Type Ques. in the subject of Chemistry(50).
2. The question papers and OMR (Optical Mark Reader) Answer Sheets are issued separately at the start of the examination
3. Choice and sequence for attempting questions will be as per the convenience of the candidate
4. Candidate should carefully read the instructions printed on the Question Booklet and Answer Sheet and make the correct entries on the Answer Sheet. As Answer Sheets are designed to suit the OPTICAL MARK READER (OMR) SYSTEM, special care should be taken to mark the entries correctly. Special care should be taken to fill QUESTION BOOKLET VERSION, SERIAL No. and MHT-CET Roll No. accurately. The correctness of entries has to be cross-checked by the invigilators. The candidate must sign on the Answer Sheet and Question Booklet
5. Read each question carefully.
6. Determine the correct answer from out of the four available options given for each question.
7. Fill the appropriate circle completely like this ●, for answering a particular question. Mark with Black ink ball point pen only.
8. Each answer with correct response shall be awarded one (1) mark for Chemistry. **There is no Negative Marking. No mark shall be awarded for marking two or more answers of same question, scratching or overwriting.**
9. **Use of whitener or any other material to erase/hide the circle once filled is not permitted.**
10. Avoid overwriting and/or striking of answer once marked.
11. Rough work should be done only on the blank space provided on the Question Booklet. Rough work should not be done on the Answer Sheet.
12. The required mathematical tables (Log etc.) will be provided along with the question booklet.
13. Immediately after the prescribed examination time is over, the Question Booklet and Answer sheet is to be returned to the invigilator. Confirm that both the candidate and invigilator have signed on question booklet and Answer sheet.
14. No candidate is allowed to leave the examination hall till the Paper gets over.

51) Refractory materials are generally used in furnaces because
A) they can withstand high temperature.
B) they possess great structural strength.
C) they are chemically inert.
D) they do not require replacement.

52) O_3 reacts with $CH_2 = CH_2$ to form ozonide. On hydrolysis it forms
A) HCHO
B) ethylene oxide.
C) ethyl alcohol.
D) ethylene glycol.

53) Which of the following is a step-growth polymer?
A) Nylon
B) Polyisoprene
C) Polythene
D) Polyacrylonitrile

54) Ethyl bromide can be converted into ethyl alcohol by
A) refluxing methanol.
B) the action of moist silver oxide.
C) boiling with an alcoholic solution of KOH.
D) heating with dilute hydrochloric acid and zinc.

55) The temperature of the system decreases in an
A) adiabatic expansion.
B) isothermal expansion.
C) isothermal compression.
D) adiabatic compression.

56) HCl is a gas, but HF is a low boiling liquid. This is because
A) the molecules aggregate because of hydrogen bonding in HF.
B) $H – F$ bond is strong.
C) $H – F$ bond is weak.
D) HF is a weak acid.

57) Equimolar solutions in the same solvent have
A) different boiling and different freezing points.
B) same boiling and same freezing points.
C) same freezing point but different boiling point.
D) same boiling point but different freezing point.

58) A positive carbylamine test is given by
A) N-methyl-o-methylaniline.
B) N, N-dimethylaniline.
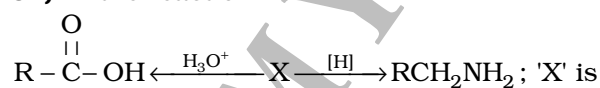C) 2, 4-dimethylaniline.
D) p-methylbenzylamine.

59) The occurrence of a reaction is impossible if
A) ΔH is + ve; ΔS is - ve.
B) ΔH is - ve; ΔS is + ve.
C) ΔH is - ve; ΔS is also - ve but $\Delta H > T\Delta S$.
D) ΔH is +ve; ΔS is also + ve but $\Delta H < T\Delta S$.

60) For which ore of the metal, froth floatation method is used for concentration?
A) Haematite
B) Cinnabar
C) Bauxite
D) Horn silver

61) In the reaction
$$R – \overset{\overset{O}{||}}{C} – OH \xleftarrow{H_3O^+} X \xrightarrow{[H]} RCH_2NH_2 \; ; \; 'X' \text{ is}$$
A) nitrile.
B) isonitrile.
C) nitrite.
D) oxime.

62) The number of moles of a solute in its solution is 20 and total number of moles are 80. The mole fraction of solute is
A) 0.25
B) 0.75
C) 1
D) 2.5

63) Which compound has hydrogen bonding?
A) Phenol
B) Chlorobenzene
C) Toluene
D) Nitrobenzene

64) Which of the following is not a fatty acid?
A) Phenyl acetic acid
B) Oleic acid
C) Palmitic acid
D) Stearic acid

65) The statement "If 0.003 moles of a gas are dissolved in 900 g of water under a pressure of 1 atmosphere, 0.006 moles will be dissolved under a pressure of 2 atmospheres", illustrates
A) Henry's law.
B) Raoult's law.
C) Graham's law.
D) Dalton's law of partial pressure.

66) "The resultant heat change in a reaction is the same whether it takes place in one or several stages." This statement is called
A) Joule's law.
B) Le-chatelier's principle.
C) Hess's law.
D) Lavoisier and Laplace law.

67) The compound formed, when ethyl bromide is heated with dry silver oxide, is
A) diethyl ether.
B) dimethyl ether.
C) methyl alcohol.
D) ethyl alcohol.

68) For a reaction, $X(g) \rightarrow Y(g) + Z(g)$ the half life period is 10 min. In What period of time would the concentration of X be reduced to 10% of original concentration?
A) 15 min
B) 20 min
C) 25 min
D) 33 min

69) How many ions are produced from $[Co(NH_3)_6]Cl_3$ in solution?
A) 2   B) 3
C) 4   D) 6

70) The EAN of iron in potassium ferricyanide is
A) 18   B) 54
C) 35   D) 23

71) Benzylidene chloride is
A) $C_6H_5CCl_3$ B) $C_6H_4ClCH_2Cl$
C) $C_6H_5CHCl_2$ D) $C_6H_5CH_2Cl$

72) In a crystal, the atoms are located at the position of
A) infinite P. E.   B) zero P. E.
C) minimum P. E.   D) maximum P. E.

73) The heats of combustion of rhombic and monoclinic sulphur are respectively 70960 and 71030 calories. What will be the heat of conversion of rhombic sulphur to monoclinic?
A) + 70 calories   B) - 70 calories
C) 71030 calories   D) 70960 calories

74) The reason for almost doubling the rate of reaction on increasing the temperature of the reaction system by $10^{\circ}C$ is
A) activation energy decreases.
B) the fraction of the molecule having energy equal to threshold energy or more increases.
C) collision frequency increases.
D) the value of threshold energy increases.

75) Which of the following compounds does not contain an –OH group?
A) Alcohols   B) Aldehydes
C) Carboxylic acid   D) Phenol

76) CH_3MgI is an organometallic compound due to
A) C-H bond.   B) C-Mg bond.
C) C-I bond.   D) Mg-I Bond.

77) Which of the following drugs is an analgesic?
A) Analgin   B) Paludrin
C) Sulphaguanidine   D) Iodex

78) Which of the following is a poor conductor of electricity?
A) KOH   B) NaCl
C) C_2H_5OH D) CH_3COONa

79) Niobium and tantalum metals are used in making surgical instruments because they are
A) soft.   B) non-corrosive.
C) hard.   D) all.

80) A crystalline solid
A) has no definite melting point.
B) changes abruptly from solid to liquid when heated.
C) has an irregular 3-dimensional arrangements.
D) undergoes deformation of its geometry easily.

81) Reduction of an aldehyde produces
A) tertiary alcohol.   B) primary alcohol
C) secondary alcohol.   D) monocarboxylic acid.

82) Charge required to liberate 11.5 g sodium is
A) 96500 coulombs   B) 1.5 F
C) 0.1 F   D) 0.5 F

83) In a reaction the ferrous (Fe^{++}) iron is oxidized to ferric (Fe^{+++}) ion. The equivalent weight of the ion in the above reaction is equal to
A) twice the atomic weight.
B) the atomic weight.
C) 1/5 of the atomic weight.
D) half of the atomic weight.

84) The compound insoluble in water is
A) mercurous perchlorate.
B) mercurous chloride.
C) mercuric nitrate.
D) mercurous nitrate.

85) Which one of the following ores is a chloride?
A) Feldspar   B) Bauxite
C) Zincite   D) Horn silver

86) Which of following is not an usual method for preparation of primary amine?
A) Friedel-Craft's reaction
B) Schmidt reaction
C) Curtius reaction
D) Hofmann's method

87) The highest catenation ability is shown by
A) tellurium.   B) selenium.
C) sulphur.   D) oxygen.

88) Allyl isocyanide has
A) 9 sigma bonds, 3 pi bonds and 2 non-bonding electrons.
B) 8 sigma bonds, 3 pi bonds and 4 non-bonding electrons.
C) 8 sigma bonds and 5 pi bonds.
D) 9 sigma bonds and 4 pi bonds.

89) The compound which is not isomeric with diethyl ether is
A) butanone.   B) 2-methylpropan-2-ol.
C) butan-1-ol.   D) n-propyl methyl ether.

90) The important method for the fixation of nitrogen is
A) Solvay.   B) Haber.
C) Deacon.   D) Fischer method.

91) Excess of Na^+ ions in our system causes
A) low B.P.   B) high B.P.
C) diabetes.   D) anaemia.

92) Which one of the following noble gases is not found in the atmosphere?
A) Ar   B) Ne
C) Kr   D) Rn

93) Which of the following is molecular disease?
A) Cancer
B) Allergy
C) German measles
D) Sickle-cell-anaemia

94) PVC is prepared by the polymerisation of
A) ethylene.
B) 1-chloropropene.
C) propene.
D) 1-chloroethene.

95) On the electrolysis of aqueous solution of sodium sulphate, on cathode we get,
A) SO_3
B) SO_2
C) H_2
D) Na

96) Oleic, stearic and palmitic acids are
A) amino acid.
B) fatty acid.
C) nucleic acid.
D) essential acid.

97) If the rate expression for a chemical reaction is given by Rate $= k[A]^m[B]^n$, then
A) the order of the reaction is m - n.
B) the order of the reaction is m + n.
C) the order of the reaction is n.
D) the order of the reaction is m.

98) An enzyme which brings about the conversion of starch into maltose is known as
A) diastase.
B) invertase.
C) zymase.
D) maltase.

99) $R - OH + HX \rightarrow R - X + H_2O$, In the above reaction, the reactivity of different alcohols is
A) Tertiary < Secondary < Primary
B) Tertiary > Secondary > Primary
C) Secondary < Primary < Tertiary
D) Tertiary < Secondary > Primary

100) In a catalytic conversion of N_2 to NH_3 by Haber's process, the rate of reaction was expressed as change in the concentration of ammonia per time is 40×10^{-3} mol litre^{-1}s^{-1}. If there are no side reaction, the rate of the reaction as expressed in terms of hydrogen is (in mol litre^{-1}s^{-1})
A) 10.3×10^{-3}
B) 20×10^{-3}
C) 60×10^{-3}
D) 1.200