INSTITUTE NAME & LOGO

NEET – EXAM YEAR

Chem : Full Portion Paper

Test Number		**Test Booklet No.**
Write/Check this Code on your Answer Sheet		Write this number on your Answer Sheet

: IMPORTANT INSTRUCTIONS :

01. Immediately fill in the particulars on this page of the Test Booklet with **Blue/Black Ball point Pen. Use of pencil is strictly prohibited**

02. The Answer Sheet is kept inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars carefully.

03. The test is of **45 Min.** duration

04. The Test Booklet consists of **45** questions. The maximum marks are **180**. All the Ques. consists of **FOUR** (**4**) marks each.

05.   **CHEMISTRY- 45 Ques. (180 marks).**

06. Candidates will be awarded marks as stated above in Instruction No.4 for correct response of each question. **ONE** (**1**) mark will be deducted for indicating incorrect response of each question. **No deduction** from the total score will be made **if no response** is indicated for an item in the Answer Sheet.

07. Use **Blue/Black Ball Point Pen only** for writing particulars/marking responses on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**

08. No candidate is allowed to carry any textual material, printed or written, bits of papers, pager, mobile phone, any electronic device, etc., except the Admit Card inside the examination hall/room.

09. Rough work is to be done on the space provided for this purpose in the Test Booklet only. This space is given at the bottom of each page of the booklet.

10. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

11. The CODE for this Booklet is A. Make Sure that the CODE printed on **Side-2** of the Answer Sheet is the same as that on this booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.

12. Do not fold or make any stray marks on the Answer Sheet.

13. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.

Name of the Candidate   : _____

Roll Number : In figures : ⬜⬜⬜⬜⬜⬜⬜⬜

    In words : _____

Examination Centre Number : ⬜⬜⬜⬜⬜⬜

Name of Examination Centre (in Capital letters) : _____

Candidate's Signature : _____   Invigilator's Signature : _____

46) Statement 1: Esters which contain α-hydrogen undergo Claisen condensation.
Statement 2: $LiAlH_4$ reduction of esters gives acids.
1) Both Statement 1 and Statement 2 are true but Statement 2 is not the correct explanation of Statement 1
2) Both Statement 1 and Statement 2 are true and the Statement 2 is correct explanation of the Statement 1
3) This Statement 1 is true but the Statement 2 is false
4) This Statement 1 is false but the Statement 2 is true

47) Statement 1 : Alcohols are easily protonated than phenols.
Statement 2 : Alcohols undergo intermolecular hydrogen bonding because of the presence of highly electronegative oxygen.
1) Both statement 1 and statement 2 are true and the statement 2 is the correct explanation of the statement 1.
2) Both statement 1 and statement 2 are true but statement 2 is not the correct explanation of the statement 1.
3) Statement 1 is true but statement 2 is false.
4) The statement 1 and statement 2 both are false.

48) Poisonous gas 'Lewisite' is obtained by the reaction of
1) $CH_2 = CH_2$ and $NOCl$
2) $CH \equiv CH$ and S_2Cl_2
3) $CH_2 = CH_2$ and $AsCl_3$
4) $CH \equiv CH$ and $AsCl_3$

49) Which of the following is pollution related disorder
1) pneumoconiosis   2) Silicosis
3) Leprosy   4) Hypertension

50) The work done during the expansion of a gas from a volume of $4dm^3$ to $6dm^3$ against a constant external pressure of $3atm$ is
$(1L atm = 101.32 J)$
1) - 6 J   2) -608 J
3) -304 J   4) + 304 J

51) The silver salt of a fatty acid on refluxing with an alkyl halide gives an
1) ester.   2) acid.
3) ether.   4) amine.

52) The number and type of bonds between two carbon atoms in CaC_2 are
1) one sigma (σ) and one and a half pi (π) bonds.
2) one sigma (σ) bond.
3) one sigma (σ) and one pi (π) bonds.
4) one sigma (σ) and two pi (π) bonds.

53) Going from fluorine to chlorine, bromine and iodine, the electronegativity
1) decreases.
2) increases.
3) first decreases then increases.
4) changes randomly.

54) Hydrolysis of ozonide of 1-butene gives
1) acetaldehyde only.
2) propionaldehyde and Formaldehyde.
3) acetaldehyde and Formaldehyde.
4) ethylene only.

55) Which of the following bonds has the highest energy?
1) O – O   2) S – S
3) Te – Te   4) Se – Se

56) Which of the following chemicals, in addition to water, are used for the manufacture of Na_2CO_3 by Solvay process?
1) $NaHCO_3, CO$ and NH_3
2) $NaCl, NH_4Cl$ and CO_2
3) $NaCl, CO_2$ and NH_3
4) $NaCl, CO$ and NH_3

57) It the distance between Na^+ and Cl^- ions in sodium chloride crystal is X pm, the length of the edge of the unit cell is
1) X/2 pm   2) 2X pm
3) X/4 pm   4) 4X pm

58) The compound used in the manufacture of terylene is
1) adipic acid.   2) ethylene glycol.
3) vinyl chloride. 4) ethylene.

59) Which one of the following explains light both as a stream of particles and as wave motion?
1) Interference   2) Diffraction
3) $\lambda = h / p$ 4) Photoelectric effect

60) Thrust imparted to the rocket is governed by the
1) Newton's third law.
2) third law of thermodynamics.
3) gravitational law.
4) none of these.

61) What is the standard cell potential for the cell Zn/Zn^{2+} (1M)$||Cu^{2+}$ (1M)$/Cu$? (E^o for Zn/Zn^{2+}(1M) $= -0.76$ V & $Cu^{2+}/Cu = +0.34$ V)
1) $-0.76 - (+0.34) = -1.10$ V
2) $0.34 - (-0.76) = 1.10$ V
3) $-0.34 + 0.76 = +0.42$ V
4) $-0.76 + (-0.34) = -0.42$ V

62) The osmotic pressure of a 5% solution of cane sugar at 150^oC is
(mol. wt. of cane sugar = 342)
1) 2.45 atm   2) 3.4 atm
3) 4 atm   4) 5.07 atm

63) The approximate mass of tritium oxide molecule is
1) 24 amu   2) 22 amu
3) 20 amu   4) 18 amu

64) Reduction of nitroalkanes in neutral medium (e.g. Zn/NH_4Cl) forms mainly
1) $R-NHOH$
2) $R-NH_2$
3) $R-N=N-Cl$
4) All of these

65) Gold is extracted by hydrometallurgical process based on its property
1) to form salts which are water soluble.
2) to form complexes which are water soluble.
3) of being less reactive.
4) of being electropositive.

66) Which of the following can't be used in Friedel Craft's reactions?
1) NaCl   2) $AlCl_3$
3) $FeBr_2$ 4) $FeCl_3$

67) Litharge is chemically
1) $Pb(CH_3COO)_2$ 2) Pb_3O_4
3) PbO_2 4) PbO

68) 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
1) twice the atomic weight.
2) the atomic weight.
3) 1/5 of the atomic weight.
4) half of the atomic weight.

69) Corrosion of iron is essentially an electrochemical phenomenon where the cell reactions are:
1) Fe is oxidized to Fe^{2+} and H_2O is reduced to O_2^-.
2) Fe is oxidized to Fe^{2+} and H_2O is reduced to O_2.
3) Fe is oxidized to Fe^{2+} and dissolved oxygen in water is reduced to OH.
4) Fe is oxidized to Fe^{3+} and H_2O is reduced to O_2^{2-}.

70) Decreasing order of C-C bond length is
I) C_2H_4 II) C_2H_2
III) C_6H_6 IV) C_2H_6
1) I > II > IV > III   2) IV > III > I > II
3) IV > I > III > II   4) II > I > IV > III

71) Diethyl ether finds use in medicine as
1) an anaesthetic.   2) an antiseptic.
3) a hypnotic.   4) a pain killer.

72) The photolysis of water gives the substance
1) $H_2O + H_2O_2$ 2) $H_2 + O_2$
3) $H_2 + OH^-$ 4) $OH^- + H^+$

73) Van't hoff factor of $BaCl_2$ of conc. 0.01 M is 1.98. Percentage dissociation of $BaCl_2$ on this conc. will be
1) 98   2) 89
3) 69   4) 49

74) The bond in $K_4[Fe(CN)_6]$ are
1) all covalent.
2) all ionic.
3) ionic, covalent and co-ordinate covalent.
4) ionic and covalent.

75) Which of the following statements about the assembly of nucleotides in a molecule of deoxyribose nucleic acid (DNA) is correct?
1) A phosphate of one unit connects to the base of another.
2) A phosphate of one unit connects to a pentose of another.
3) A pentose of one unit connects to the base of another.
4) A pentose of one unit connects to a pentose of another.

76) The correct order of the thermal stability of hydrogen halides (H -X) is
1) HF > HCl > HBr > HI
2) HI > HBr > HCl > HF
3) HCl < HF < HBr < HI
4) HI > HCl < HF < HBr

77) Which of the following is not a redox reaction?
1) $4KCN + Fe(CN)_2 \rightarrow K_4Fe(CN)_6$
2) $2H_2O_2 \rightarrow 2H_2O + O_2$
3) $2CuI_2 \rightarrow 2CuI + I_2$
4) $2Rb + 2H_2O \rightarrow 2RbOH + H_2$

78) Which quantum number is not related with Schrodinger equation?
1) Spin   2) Magnetic
3) Azimuthal   4) Principal

79) Which of the following statements is most applicable to hydrogen?
1) It can neither act as oxidizing nor as a reducing agent.
2) It can act both as oxidizing and reducing agent.
3) It can act as an oxidizing agent.
4) It can act as a reducing agent.

80) $C_6H_6 + Cl_2 \xrightarrow{\text{UV Light}}$ Product. In above reaction, product is

1) $C_6H_9Cl_2$ 2) $C_6H_{12}Cl_6$
3) $C_6H_6Cl_6$ 4) CCl_3CHO

81) In the chemical reaction $N_2 + 3H_2 \rightleftharpoons 2NH_3$ at equilibrium point, state whether
1) equal masses of N_2 and H_2 are reacting.
2) equal volumes of N_2 and H_2 are reacting.
3) the reaction has stopped.
4) the same amount of ammonia is formed as is decomposed into N_2 and H_2.

82) Same mass of CH_4 and H_2 is taken in container. The partial pressure caused by H_2 is
1) 1   2) 1/2
3) 1/9   4) 8/9

83) Boron has two stable isotopes, ^{10}B (19%) and ^{11}B (81%). Find the atomic mass that should appear for boron in the periodic table.
1) 10.0   2) 10.2
3) 10.8   4) 11.2

84) Statement 1 : Millon's test is a test to identify carbohydrates.
Statement 2 : Millon's reagent is solution of mercurous nitrate and mercuric nitrate in nitric acid having little nitrous acid.
1) Both statement 1 and statement 2 are true and the statement 2 is the correct explanation of the statement 1.
2) Both statement 1 and statement 2 are true but statement 2 is not the correct explanation of the statement 1.
3) Statement 1 is true but statement 2 is false.
4) Statement 1 is false but statement 2 is true.

85) Amongst the following chemical reactions, the one representing homogeneous catalysis is

1) $2SO_2(g) + O_2(g) \xrightarrow{V_2O_5} 2SO_3(g)$

2) $CO(g) + 3H_2(g) \xrightarrow{Ni} CH_4(g) + H_2O$

3) $2SO_2(g) + O_2(g) \xrightarrow{2NO} 2SO_3(g) + 2NO(g)$

4) $N_2(g) + 3H_2(g) \xrightarrow{Fe} 2NH_3(g)$

86) A white substance was alkaline in solution. Which of the following substances could it be?
1) $NaNO_3$ 2) NH_4Cl
3) Na_2CO_3 4) Fe_2O_3

87) Conditions of standard state used in thermochemistry is
1) 0 K and 1 atm   2) 25^oC and 1 atm
3) 20^oC and 1 atm   4) 0^oC and 1 atm

88) 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

1) Henry's law.
2) Raoult's law.
3) Graham's law.
4) Dalton's law of partial pressure.

89) The molecular formula of chloride of a metal M is MCl_3. The formula of its carbonate would be

1) $M(CO_3)_2$ 2) M_2CO_3

3) $M_2(CO_3)_3$ 4) MCO_3

90) The region in which main metals are found in earth is called
1) siderophile.   2) chalcophile.
3) lithophile.   4) atmophile.