

Question Booklet Series:

**A**

**CET- 2014  
Chemistry  
QUESTION BOOKLET**

INSTRUCTIONS

Question Booklet Number:

**404900**

Maximum Time Allowed : 1 Hour 30 Minutes.  
Negative Marking : 0.2

No. of Questions: 75  
Maximum Marks: 75

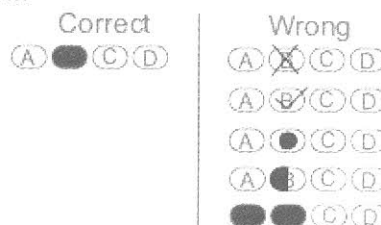
Roll Number:

       
Answer Sheet  
Number:
       

Please read the following instructions carefully:

- 1) **Check the booklet thoroughly:** In case of any defect – Misprint, Missing question(s), Missing page, Blank page, Damaged or Defaced page or duplication of question(s) / Page(s), get the booklet changed with the booklet of the same series from the Room Invigilator. No complaint shall be entertained after the entrance test is over
- 2) Write your Roll Number and the OMR Answer Sheet Number on the question booklet.
- 3) Mark carefully your Roll Number, Question Booklet Number and Question Booklet series on OMR Answer sheet and sign at the appropriate place. Incomplete and/or incorrect particulars will result in the non-evaluation of your answer sheet.
- 4) Strictly follow the instructions given by the Centre Supervisor / Room Invigilator and those given on the Question Booklet.
- 5) Candidates are not allowed to carry any papers, notes, books, calculators, cellular phones, scanning devices, pagers etc. to the Examination Hall. Any candidate found using, or in possession of such unauthorized material, indulging in copying or impersonation or adopting unfair means / reporting late / without Admit Card will be debarred from the written test.
- 6) Please mark the right responses on the OMR Sheet with ONLY a Blue/Black ball point pen. Use of eraser, whitener (fluid) and cutting on the OMR Answer Sheet is NOT allowed.
- 7) The test is of objective type containing multiple choice questions (MCQs). Each objective question is followed by four responses. Your task is to choose the correct/best response and mark your response on the OMR Answer Sheet and NOT on the Question Booklet.
- 8) There will be 0.2 negative marking for every wrong answer.

9) For marking response to a question, completely darken the CIRCLE so that the alphabet inside the CIRCLE is not visible. Darken only ONE circle for each question. If you darken more than one circle, it will be treated as wrong answer. The CORRECT and the WRONG methods of darkening the CIRCLE on the OMR Answer Sheet are shown below.



- 10) Please be careful while marking the response to questions. The response once marked cannot be changed and if done shall be treated as wrong answer.
- 11) In view of the tight time span, do NOT waste your time on a question which you find to be difficult. Attempt easier questions first and come back to the difficult questions later during the test.
- 12) DO NOT make any stray marks anywhere on the OMR Answer Sheet. DO NOT fold or wrinkle the OMR answer sheet.
- 13) Rough work MUST NOT be done on the OMR Answer Sheet. Use your test booklet for this purpose.
- 14) Candidates are provided carbonless OMR Answer Sheet having original copy and candidate's copy. After completing the examination, candidates are directed to fold at perforation on the top of the sheet, tear it to separate original copy and candidate's copy and then hand over the original copy of OMR Answer Sheet to the Room Invigilator and take candidate's copy with them.

DO NOT OPEN THE SEAL OF THIS BOOKLET UNTIL TOLD TO DO SO

- What is the unit of zero order reaction?  
(A) mol L s<sup>-1</sup>  
(B) s<sup>-1</sup>  
(C) L mol<sup>-1</sup> s<sup>-1</sup>  
(D) None of these
- The Chief commercial use of amines as intermediates in the synthesis of  
(A) Medicines  
(B) Fibers  
(C) Medicines and Fibers  
(D) Proteins
- The colour of transition metal compound is due to?  
(A) Complete ns subshell  
(B) Small size metal ions  
(C) Incomplete (n-1)d subshell  
(D) Absorption of light in UV region
- The concentration of hydrogen ion in a sample of soft drink is  $3.8 \times 10^{-3}$  M. What is its pH?  
(A) 3.84  
(B) 2.42  
(C) 4.44  
(D) 1.42
- Based on which method amines are prepared?  
(A) Reduction of Nitro Compounds  
(B) Ammonolysis of alkyl halides  
(C) Reduction of nitrites and amides  
(D) All of the above
- EDTA can form complex with how many number of donor atoms?  
(A) One  
(B) Two  
(C) Six  
(D) Three
- According to IUPAC system, what is the correct name of the compound  $[\text{Cr}(\text{NH}_3)_3(\text{H}_2\text{O})_3]\text{Cl}_3$   
(A) Triammine triaqua chromium (III)chloride  
(B) Triammine triaqua chromium chloride(III)  
(C) Tetraammonium triaquachromium(III) chloride  
(D) None of these
- What is the value of  $1/n$ , in Freundlich adsorption isotherm?  
(A) Between 2 & 4 in all cases  
(B) Between 0 & 1 in all cases  
(C) 1 in case of chemisorptions  
(D) 1 in case of physical adsorption
- The smallest quantity of energy that can be emitted or absorbed in the form of electromagnetic radiation is known as  
(A) Quantum  
(B) Photon  
(C) Spectrum  
(D) Photoelectron
- Monovalent Sodium and Potassium ions, divalent magnesium and calcium ions are found in  
(A) Lipids  
(B) Biological Fluids  
(C) Fats  
(D) Enzymes
- Anti-Markovnikov addition of HBr is observed in  
(A) Propene  
(B) But 2- ene  
(C) Pent 2 -ene  
(D) All of these
- What is conductance?  
(A) Inverse of resistance  
(B) Proportional of resistance  
(C) Equal of resistivity  
(D) Equal of resistance
- The total number of orbital's associated with the principal quantum number  $n = 3$ , is  
(A) 9  
(B) 8  
(C) 5  
(D) 7
- It has been found that for a chemical reaction with rise in temperature by  $10^\circ$ , the rate constant is  
(A) Nearly doubled  
(B) Nearly tripled  
(C) Increases 5 times  
(D) Increases 4 times
- Which is the metal present in the coordination compound chlorophyll?  
(A) Ca  
(B) Mg  
(C) K  
(D) Na
- Ethylene can be converted into alcohol by treatment of?  
(A) Aq.KOH  
(B)  $\text{H}_2\text{SO}_4$  as catalyst  
(C) Moist silver oxide  
(D) Zn/HCL

17. Why d - block element form complexes?  
(A) Due to large size and high nuclear charge  
(B) Due to small size and low nuclear charge  
(C) Due to small size and high nuclear charge  
(D) None of these
18. Which among the following is a non-colligative property?  
(A) Elevation in boiling point  
(B) Osmotic pressure  
(C) Refractive index  
(D) Lowering of vapour pressure
19. What kinds of bonds are present in ethene molecule?  
(A) 1 pi & 5 sigma bond  
(B) 1 pi & 3 sigma bond  
(C) 1 sigma and 1 pi bond  
(D) 3 sigma and 3 pi bond
20. In which year IUPAC draft recommends that anionic ligands will end with-ido so that chloro would become chlorido.  
(A) 1994  
(B) 1984  
(C) 2000  
(D) 2004
21. What is IUPAC name of Isopropylamine?  
(A) Propan-2-amine  
(B) Ethanamine  
(C) 2-Aminotoluene  
(D) Propan-1-amine
22. Which factor has no influence on the rate of reaction?  
(A) Molecularity  
(B) Temperature  
(C) Concentration of reactant  
(D) Nature of reactant
23. Negatively charged particles are called  
(A) Electrons  
(B) Protons  
(C) Neutrons  
(D) None of the above
24. Who has synthesised the organic compound 'urea' for the first time?  
(A) Friedrich Wöhler  
(B) Berzelius  
(C) Kolbe  
(D) Berthelot
25. Mass number of an atom is the sum of  
(A) Number of protons + number of neutrons + number of electrons  
(B) Number of protons + number of neutrons  
(C) Number of protons + number of electrons  
(D) Number of electrons + number of neutrons
26. The mixture of reactants and products in the equilibrium state is called?  
(A) Chemical Mixture  
(B) Equilibrium Mixture  
(C) Chemical Equilibrium  
(D) Dynamic Equilibrium
27. The relative ease of dehydration of alcohols follows following order  
(A) Tertiary > Secondary > Primary  
(B) Primary > Secondary > Tertiary  
(C) Secondary > Tertiary > Primary  
(D) Tertiary > Primary > Secondary
28. Which one of the following acid does NOT have a carboxylic group?  
(A) Methanoic acid  
(B) Ethanoic acid  
(C) Propanoic acid  
(D) Picric acid
29. What elements are presents in f - Block series?  
(A) Lanthoanoids  
(B) Actinoids  
(C) Lanthanoids and Actinoids  
(D) Lipids
30. What is the type of hybridisation found in methane?  
(A) SP<sup>3</sup>  
(B) SP<sup>2</sup>  
(C) SP<sup>1</sup>  
(D) None of these
31. Which is the correct statement about solid?  
(A) Very high compressibility  
(B) Maximum intermolecular distance  
(C) Definite mass but no definite volume  
(D) Maximum intermolecular force of attraction
32. Compounds having the same molecular formula but different structures are classified as  
(A) Functional Group Isomers  
(B) Structural Isomers  
(C) Optical Isomerism  
(D) Metamerism
33. What kind of isomerism is exhibited by the compounds CH<sub>3</sub>CH<sub>2</sub>CHO and CH<sub>3</sub>COCH<sub>3</sub>?  
(A) Geometrical isomerism  
(B) Functional isomers  
(C) Tautomers  
(D) Metamers

34. Food preservatives prevent spoilage of food due to microbial growth. The most commonly used preservatives are  
(A) Table Salt, Sugar  
(B) Vegetable oils and Sodium Benzoate  
(C)  $C_6H_5COONa$   
(D) All of the above
35. Which compound is responsible for perfumery?  
(A) Ketones  
(B) Ethers  
(C) Alcohols  
(D) Esters
36. The process of formation of polymers from respective monomers is called  
(A) Polyacrylonitrile  
(B) Copolymerisation  
(C) Polymerisation  
(D) None of the above
37. The colour in the co-ordination compounds can be readily explained in terms of?  
(A) Spectrochemical  
(B) Chelate Effect  
(C) Crystal Field Theory  
(D) None of the above
38. Paramagnetism is exhibited due to which one of the following reason?  
(A) Presence of unpaired electrons  
(B) Presence of completely filled electronic sub- shell  
(C) By non transition element  
(D) By elements with noble gas configuration
39. Which of the following mentioned is a type of hydrocarbon?  
(A) Saturated hydrocarbons  
(B) Unsaturated hydrocarbons  
(C) Aromatic hydrocarbons  
(D) All of the above
40. The removal of an electron from an atom results in the formation of  
(A) Anion  
(B) Anode  
(C) Cation  
(D) Cathode
41. 45 g of ethylene glycol ( $C_2H_6O_2$ ) is mixed with 600 g of water, what is the depression of freezing point?  
(A) 7.9 K  
(B) 2.5 K  
(C) 6.6 K  
(D) 2.2 K
42. Addition of oxygen to an element or a compound is termed as  
(A) Oxidation  
(B) Reduction  
(C) Ionisation  
(D) Redox reaction
43. Mass of a proton is  
(A) 0.00727 amu  
(B) 1.0087 amu  
(C) 0.00054 amu  
(D) 1.00727 amu
44. What is the product of reaction between calcium carbide and water?  
(A) Ethylene  
(B) Acetylene  
(C) Methane  
(D) Benzene
45. Among the following molecule which has the zero dipole moment?  
(A)  $BF_3$   
(B)  $H_2O$   
(C)  $NF_3$   
(D)  $ClO_2$
46. What colour is imparted into the flame when lithium is burnt?  
(A) Golden yellow  
(B) Brick red  
(C) Crimson red  
(D) Grassy green
47. Henry's Law Constant value for  $O_2$  in water is  
(A) 46.82  
(B) 43.86  
(C) 88.84  
(D) 76.48
48. Sodium Carbonate is manufactured by  
(A) Castner-Kellner  
(B) Solvay Process  
(C) Oxidation  
(D) Transmission process
49. Which acid is present in vinegar?  
(A) Formic acid  
(B) Acetic acid  
(C) Butyric acid  
(D) Tartaric acid
50. The attractive force which holds various constituents together in different chemical species is called  
(A) Valence bond  
(B) Chemical bond

- (C) Atomic bond  
(D) Electrovalent bond
51. Silver, gold, platinum, iron, copper and titanium are part of the?  
(A) Minerals  
(B) Transition metals  
(C) Salts  
(D) All of the above
52. Molality of 2.5 g of ethanoic acid ( $\text{CH}_3\text{COOH}$ ) in 75 g of benzene is  
(A)  $0.565 \text{ mol kg}^{-1}$   
(B)  $0.656 \text{ mol kg}^{-1}$   
(C)  $0.556 \text{ mol kg}^{-1}$   
(D)  $0.665 \text{ mol kg}^{-1}$
53. Polycondensation products of dicarboxylic acids and diols are?  
(A) Polyamides  
(B) Neoprene  
(C) Glyptal  
(D) Polyesters
54. When acetaldehyde is heated with dilute sodium hydroxide solution, the product is?  
(A) Ethanol & sodium acetate  
(B) Paraldehyde  
(C) Aldol  
(D) Brown resin
55. Gas constant is equal to the  
(A) Product of two specific heats.  
(B) Difference of two specific heat  
(C) Ratio of two specific heat.  
(D) Sum of two specific heat.
56. How many octahedral void(s) are present per atom in a cubic close - packed structure?  
(A) 3  
(B) 4  
(C) 1  
(D) 2
57. The enthalpy change accompanying a reaction is called :  
(A) Reaction Enthalpy  
(B) Standard Enthalpy  
(C) Thermochemical equation  
(D) Enthalpy of atomization
58. In  $\text{Br}_3\text{O}_8$  compound, oxidation number of bromine is  
(A) 16/13  
(B) 26/3  
(C) 24/3  
(D) 16/3
59. How much is the pH of human blood?  
(A) 5.2  
(B) 8.3  
(C) 6.3  
(D) 7.4
60. How will you define the specific heat at constant volume?  
(A) The amount of heat required to raise the temperature of unit mass of gas through one degree, at constant pressure.  
(B) The amount of heat required to raise the temperature of 1 Kg of water through one degree.  
(C) The amount of heat required to raise the temperature of unit mass of gas through one degree at constant volume.  
(D) All of these
61. All substances that conduct electricity in aqueous solutions are called?  
(A) Electrolytes  
(B) Acids  
(C) Buffers  
(D) Catalyst
62. Energy of one mole of photons of radiation whose frequency is  $5 \times 10^{14} \text{ Hz}$  is  
(A)  $199.51 \text{ KJmol}^{-1}$   
(B)  $189.51 \text{ KJmol}^{-1}$   
(C)  $198.51 \text{ KJmol}^{-1}$   
(D)  $188.51 \text{ KJmol}^{-1}$
63. Carbonyl Compounds are constituents of  
(A) Fabrics, drugs  
(B) Fabrics, plastics  
(C) Flavourings, plastics  
(D) All of the above
64. In the formation of  $\pi$  bond the atomic orbital's overlap in such a way that  
(A) Their axes remain parallel to each other and perpendicular to the internuclear axis  
(B) Their axes remain parallel to each other and parallel to the internuclear axis  
(C) Their axes remain perpendicular to each other and parallel to the internuclear axis  
(D) Their axes remain perpendicular to each other and perpendicular to the internuclear axis
65. Lithium shows diagonal relationship with  
(A) Sodium  
(B) Magnesium  
(C) Calcium  
(D) Aluminium

66. Use of Chemicals for therapeutic effect is called  
(A) Medicines  
(B) Chemotherapy  
(C) Drug-Target Interaction  
(D) Phototherapy
67. Atoms with identical atomic number but different atomic mass number are known as  
(A) Polymers  
(B) Isobars  
(C) Isotopes  
(D) Isomers
68. Ionization energy and electron affinity are defined at?  
(A) Enthalpy  
(B) Spontaneity  
(C) Equilibrium  
(D) Absolute Zero
69. Wood spirit is known as?  
(A) Ethanol  
(B) Methanol  
(C) Propanol  
(D) None of these
70. The crystal lattice of electrovalent compound is composed of  
(A) Oppositely charged ions  
(B) Both molecules and ions  
(C) Molecules  
(D) Atoms
71. What is the percentage of free space in body centered cubic unit cell?  
(A) 32%  
(B) 20%  
(C) 34%  
(D) 28%
72. What are lanthanides & actinides?  
(A) Inner transition element  
(B) Noble gas  
(C) Normal element  
(D) Transition element
73. A reagent which lowers the oxidation number of an element in a given substance is known as  
(A) Oxidising agent  
(B) Reduction  
(C) Reducing agent  
(D) Oxidation
74. Which of the following is used in the manufacture of alloys?  
(A) Lithium  
(B) Halides  
(C) Plaster of Paris  
(D) Beryllium
75. Williamson's synthesis is used to prepare?  
(A) Acetone  
(B) PVC  
(C) Ethers  
(D) Bakelite

Space for Rough Work: