Annual Examination **CHEMISTRY** 2019 – 20

Section – A

Multiple Choice Questions (MCQ's)

Q.1 Choose the correct answer for each from the given options.

1. The melting point of heavy water is _____.
   (a) 0°C (b) 3.81°C (c) 4°C (d) 1°C
2. The suspended particles in suspension are generally of the size.
   (a) 10 nm (b) 100 m (c) 1200 nm (d) 1nm
3. The formula of iron pyrite for getting SO_2 from pyrite burner is:
   (a) FeS (b) Fe_2S_3 (c) FeS_2 (d) Fe_2S_2
4. The material which softens on heating and hardens on cooling come under the class:
   (a) Thermosetting plastic (b) Thermoplastic
   (c) Formica (d) Bakelite
5. The nucleus of an atom consists of:
   (a) Electron and Proton (b) Electron and Neutron
   (c) Proton and Neutron (d) None of these
6. The branch of chemistry which deals to determine the quality and quantity of substance is called _____.
   (a) Organic Chemistry (b) Physical Chemistry
   (c) Inorganic Chemistry (d) Analytical Chemistry
7. The force which hold atoms together in a molecule or crystal is called _____.
   (a) Covalent Bond (b) Ionic Bond
   (c) Chemical Bond (d) Co-ordinate covalent bond

8. Number of particles in one mole of any substance is _____.
   (a) 6.02×10^{-23} (b) 6.02×10^{-21}
   (c) 6.02×10^{23} (d) 6.02×10^{21}
9. The rule of triad was introduced by _____.
   (a) Dobereiner (b) Newland (c) Lother Mayer (d)Mendeleev
10. The most abundant and useful halogen is _____.
   (a) Bromine (b) Fluorine (c) Iodine (d) Chlorine
11. Compounds which contain only carbon and hydrogen elements are called:
   (a) Carbohydrates (b) Hydrocarbons (c) Halides (d) None of these
12. The metal that liberates H_2 gas when treated with dil. HNO_3 is:
   (a) Copper (b) Aluminum (c) Zinc (d)Magnesium
13. The formula of water glass is _____.
   (a) H_2SO_4 (b) SiO_2 (c) Na_2SiO_3 (d) NaCl
14. The sum of the mole fractions of solute and solvent is equal to _____.
   (a) 5 (b) 2 (c) 0 (d) 1
15. The formation of water form H_2 and O_2 is example of:
   (a) Exothermic reaction (b) Endothermic reaction
   (c) Neutralization reaction (d) None of these
16. The state of matter in which molecules are tightly packed and possess only transition motion is _____.
   (a) Gaseous State (b) Solid State
   (c) Liquid State (d) None of these
17. The pH of human blood is between _____.
   (a) 5.0 – 7.0 (b) 6.5 – 7.0 (c) 7.35 – 7.45 (d)7.64 – 7.80

Section – B

(Short Answers)

Note: Answer any Eight of the following questions. Each question carries 05 marks.

Q.2 Enlist the name of branches of Chemistry and define any two of them.

Q.3 C–14 and N–14 both have same mass number yet they are different elements. Explain.

Q.4 What are lanthanides and actinides?

Q.5 What are the valence electrons of an atom? How many valence does a nitrogen atom passes?

Q.6 What is Brownian movement? Describe with example.

Q.7 What is the difference between a primary and secondary cell?

Q.8 What is potable water? Write four main characteristics of potable water.

Q.9 How ethane is prepared from ethyl alcohol?

Q.10 Calculate the pH and pOH of a solution whose (H^+) ion concentration is 3.0×10^{-2} moles / litre.

Q.11 Define any five chemical differences between Metals and Non-metals.

Q.12 Nitric acid is an important chemical compound. Give any five uses of nitric acid.

Q.13 Balance the following chemical equations.

(i) $Ca + H_2O \longrightarrow Ca(OH)_2 + H_2$

(ii) $CH_4 + O_2 \longrightarrow CO_2 + H_2O$

(iii) $NaHCO_3 \longrightarrow Na_2CO_3 + H_2O + CO_2$

(iv) $CO + O_2 \longrightarrow CO_2$

(v) $Fe + H_2O \longrightarrow Fe_3O_4 + H_2$

Section – C

(Descriptive Answers)

Note: Answer any TWO of the following question. Each question carries 14 (7 + 7) marks.

Q.14 (a) What is chemical reaction? How many types of chemical reaction? Explain any two reactions with examples.

(b) What common properties are shown by ionic compound?

Q.15 (a) State and explain Faraday's First Law of Electrolysis.

(b) State Exothermic and Endothermic reaction. Give any two examples.

Q.16 (a) Differentiate between any one of the following.

Diamond and Graphite Wrought iron and Steel

(b) How methane is prepared? Give its properties.

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Section - A

Multiple Choice Questions (MCQ's)

Q.1 Choose the correct answer for each from the given options.

1. _____ is an input device to read images as input.
   (a) Scanner (b) Printer (c) Magnetic tape (d) None of these
2. The commands that copies of all contents of a disk to another disk is _____.
   (a) COPY (b) XCOPY (c) DISKCOPY (d) COPY*.*
3. Digital computer works with data in _____ form.
   (a) Discrete (b) Magnetic (c) Analogues (d) None of these
4. SIMM provide _____ memory capacity as compared to DIMM.
   (a) Large (b) Small (c) Equal (d) None of these
5. Operation of inserting data into program and taking data out of the program is called _____ operation.
   (a) Input (b) Output (c) Input / Output (d) None of these
6. Double complementation has _____ effect.
   (a) Insertion (b) Deletion (c) Confirmation (d) Cancelation
7. The CD-writer performance is measured in _____ units.
   (a) DPI (b) Y (c) X (d) Hurtz
8. _____ data consists of the sequence of characters.
   (a) Integer (b) String (c) Floating point (d) Graphical

9. First generation computer were developed during _____.
   (a) 1940 – 56 (b) 1957 – 63
   (c) 1964 – 91 (d) None of these
10. A hard disk is also called _____.
   (a) Compact Disk (b) System
   (c) Winchester Disk (d) Changeable Disk
11. DOS internal commands are stored in the _____ file.
   (a) system.sys (b) command.com
   (c) autoexe.bat (d) command.sys
12. High level language can be translated through _____.
   (a) Assembler (b) Interpreter
   (c) Compiler (d) Both (b) and (c)
13. _____ key is also used to delete a character.
   (a) Delete (b) Backspace (c) Insert (d) Esc
14. _____ is a pointing input device that contains a photo detector.
   (a) Mouse (b) Trackball (c) Light pen (d) Joystick
15. An EPROM is a special type of ROM that can be erased by exposing it to _____.
   (a) X-rays (b) UV light
   (c) Electrical charges (d) Laser Light

Section – B

(Short Answers)

Note: Answer any Nine of the following questions. Each question carries 04 marks.

Q.2 Define screen navigation keys.

Q.3 Define Port. Compare and contrast serial port and parallel port.

Q.4 Define Pen plotter and its types.

Q.5 What are the Laws of Boolean algebra?

Q.6 What is computer virus? How a virus is removed from disk?

Q.7 Why we need to translate a source code into machine code?

Q.8 What are the types of character data?

Q.9 Convert the following.

(i) $(110010111)_2 = (?)_{16}$ (ii) $(BA4CF7)_{16} = (?)_8$

Q.10 Explain any TWO of the following.

(i) x-copy (ii) deltree (iii) sys

Q.11 Write note on Micro-computer.

Q.12 Compare my computer and windows explorer.

Section – C

(Descriptive Answers)

Note: Answer any Three of the following questions. Each question carries 08 marks.

Q.13 What is CPU? Draw the block diagram of computer system with sub-units of CPU.

Q.14 What is software? Also define its types with example.

Q.15 Describe Buses with their types.

Q.16 Define ROM. Explain its types.

Q.17 Write note on any TWO of the following.

(i) Hard Disk

(ii) Operating System

(iii) Language Translators

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Section – A

Multiple Choice Questions (MCQ's)

Q.1 Choose the correct answer for each from the given options.

1. Which one is not an alga?
   (a) Chlorella (b) Volvox (c) Spirogyra (d) Yeast
2. Chloroplast of Spirogyra is _____.
   (a) Ring shaped (b) Cup shaped (c) Ribbon shaped (d) Spherical
3. Spiders do not have _____.
   (a) Jointed legs (b) Wings (c) Exoskeleton (d) Head
4. Which of the following is gill breather?
   (a) Frog (b) Fish (c) Whale (d) Turtle
5. Biology is the study of _____.
   (a) Life (b) Non-Living things (c) Space (d) Earth
6. Developmental Biology deals with the _____.
   (a) Growth of organism
   (b) Function performed by an organism
   (c) Development of groups and classes
   (d) Changes occurring in Zygote
7. Nucleus of cell was discovered by _____.
   (a) Robert Hook (b) Scheilden (c) Robert Brown (d) Virchow

8. The number of chambers in the heart of a frog is _____.
   (a) Two (b) Three (c) Four (d) Five
9. Multi-cellular organism having no cell-wall and no chlorophyll are _____.
   (a) Fungi (b) Bacteria (c) Animals (d) Plants
10. It has no teeth in mouth _____.
   (a) Shark (b) Frog (c) Elephant (d) Sparrow
11. CO_2 from air taken by leaf through _____
   (a) Stomata (b) Epidermis (c) Mesophyll (d) Lenticle
12. Rickets develops due to the deficiency of vitamin _____.
   (a) A (b) B (c) C (d) D
13. Tuberculosis is caused by:
   (a) Virus (b) Bacteria (c) Worm (d) None of these
14. Bacilli bacteria are _____.
   (a) Rounded (b) Rod shaped (c) Spiral (d) Curved
15. Nostoc belongs to _____.
   (a) Cocci Bacteria (b) Eubacteria
   (c) Cyanobacteria (d) None of these
16. The group of Marchantia is _____
   (a) Hepaticae (b) Musci (c) Mosses (d) Anthocerotae
17. Horse tails are the common name of _____
   (a) Psilopsida (b) Lycopsida (c) Sphenopsida (d) Pteropsida

Section – B

(Short Answers)

Note: Answer any Eight of the following question. Each question carries 05 marks.

Q.2 Define the following terms:

Physiology Biochemistry

Q.3 Why is cell membrane differentially permeable?

Q.4 Distinguish between light and electron microscope.

Q.5 Write a note on binomial nomenclature.

Q.6 Describe salient features of cyanobacteria.

Q.7 Write notes on Hydra and Tape Worm.

Q.8 Why are amphibia regarded as having "dual life"?

Q.9 What is a vertebrate?

Q.10 What are ADP and ATP? What is their importance?

Q.11 What is open type circulatory system?

Q.12 Write a note on kidney stones.

Q.13 How does amoeba excrete?

Section – C

(Descriptive Answers)

Note: Answer any Two of the following question. Each question carries 14 marks.

Q.14 What is Pisces? Discuss their important characters.

Q.15 Describe the structure of a human heart.

Q.16 What is CNS? Describe its main components and their important function.