

**END SEMESTER/ RETEST EXAMINATION 2021**

**SEMESTER : 2<sup>nd</sup>**

**Subject code : Sc- 203**

**Subject : Chemistry-II**

**Full marks : 70 ( Part A-25 + Part B- 45)**

**Duration : Three hours**



**Instructions:**

1. All questions in **Part A** are compulsory.
2. Answer **any five** from **Part B**.

**Part A**

**Marks-25**

**Q.1. Fill in the blanks.**

1x10=10

- a. Full form of BOD is .....
- b. During roasting sulphide ores are converted into .....
- c. Cement is discovered by ..... in 1824.
- d. Lignite is also known as .....
- e. Petroleum along with coal is considered as .....
- f. Oil and grease are the most common .....
- g. At critical humidity the rate of corrosion is .....
- h. Urea formaldehyde resins are a class of .....
- i. Full form of PVC is .....
- j. Alkanes are acyclic ..... hydrocarbons.

**Q.2. Write true or false.**

1x10=10

- a. Lead is the most serious atmospheric heavy metal pollutant.
- b. All minerals may not be ores but all ores are minerals .
- c. The calorific value of kerosene is higher than that of diesel.
- d. PTFE is a non-solid lubricant.

- e. Bakelite is a thermoplastic polymer.
- f. Plastics can be used at low temperatures.
- g. 2,2-Dimethylpropane is also known as neo-pentane.
- h. Lindlar's catalyst ( $H_2/Pd/CaCO_3/S$ ) can form the trans product.
- i.  $SN_1$  reactions follow unimolecular pathway and second order kinetics.
- j. Isoprene is a monomer of natural rubber.



**Q.3. Choose the correct answer.**

1x5=5

- i. Iron is manufactured from
  - a) Bauxite b) Calcite c) Cryolite d) Haemalite
- ii. The organic gas used in welding is
  - a)  $CH_2$  b)  $C_2H_6$  c)  $C_2H_2$  d)  $C_2H_4$
- iii. Nylon is
  - a) An addition polymer b) a linear polymer c) a condensation polymer d) None of these.
- iv. PVC is prepared from
  - a) Styrene b) Nylon-6,6 c) Nylon-6 d) Vinyl chloride
- v. The class of compound to which pyridine belongs is
  - a) alicyclic b) aromatic c) heterocyclic d) none of these

**Part B**

**Marks-45**

- Q.4.** a) What are biodegradable and non-biodegradable pollutants? give examples. 3
- b) What do you mean by COD? 2
- c) Write short notes on any two of the following. 2x2=4
- i) Ozone hole
  - ii) Water pollution
  - iii) Acid rain
- Q.5.** a) What do you mean by calcination and roasting? 2
- b) Write difference between metals and non-metals. 4
- c) Write a note on froth flotation process. 3



- Q.6** a) What is gypsum? What is the function of gypsum in the manufacturing of cement? 2  
b) Describe the wet process for the manufacture of cement. 3  
c) Write the name of three important cement factories. 3  
d) What is concrete? 1
- Q.7.** a) What is Anti-Knock Index(AKI) ? Give two examples of anti-knock compounds. 1+2=3  
b) What is fuel? How it can be classified? 3  
d) Difference between advantage and disadvantage of liquid fuels . 3
- Q.8.** a) Write the characteristics of a good lubricant. 4  
b) What is viscosity index? What is its importance? 2  
c) What are the different types of lubrication? 3
- Q.9.** a) What do you mean by galvanic corrosion ? 3  
b) What is rusting of iron? 3  
c) what do you mean by pitting corrosion? 3
- Q.10.** a) What do you mean by homopolymers and copolymers ? Give examples of each. 4  
b) Difference between thermoplastic and thermosetting polymers. 3  
c) How does Nylon-6,6 prepare ? 2
- Q.11.** a) Write IUPAC name of the following compounds. 3  
i)  $\text{CH}_3\text{CH}_2\text{CH}_2\text{COOH}$  ii)  $\text{CH}_3\text{CH}_2\text{CONH}_2$  iii)  $\text{C}_2\text{H}_5\text{COOC}_2\text{H}_5$   
b) Write the mechanism of  $\text{SN}_1$  and  $\text{SN}_2$  reaction. 4  
c) Write the chemical equations for the following. 2  
i) Ethene is ozonolysed.  
ii) Propane-1,2-diol is oxidised by Baeyer's reagent.

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