

NOTE: i) All the questions are compulsory.

ii) Figures to right indicate full marks.

iii) Use of non-programmable calculator / log table is allowed.

Q.1. Attempt any four:

[20]

A) Explain following properties of halogens:

1) Oxidation state 2) Ionization energy 3) Electronegativity 4) Oxidising power

B) Describe in brief Preparation, Properties and Structure of XeF_6 .

C) Explain any five chemical properties of Halogens.

D) Describe Hemoglobin and Myoglobin. Also Explain their role in transport and storage of oxygen.

E) Explain brief account of following pseudohalogens: a) ThioCynogen b) Azide

F) Explain structures of: a) XeOF_2 b) XeOF_4

G) Write a note on Heme protein.

H) Explain the Physical and Chemical properties of noble elements.

Q.2. Attempt any four:

[20]

A) Explain Arrhenius concept and give any two applications and limitations.

B) Explain 18 electron rule.

C) Write a short note on hydrogen Bonding.

D) Discuss the Bronsted-Lowry concept and explain conjugate acid-base pair with examples.

E) Write a short note on Usanovich concept.

F) Explain four chemical properties of 16 group elements.

G) Write down the classification based on the nature of metal-carbon bond.

H) Define haptacity and explain classification based on it.

Q.3. Attempt any four:

[20]

A) What is wet and dry corrosion? Explain the main types.

B) How the metal is protected from corrosion using coating and electroplating?

C) Explain the use of cathodic protection and anodizing in prevention of corrosion.

D) What is soil pollution. Explain causes of soil pollution and effects of soil pollution.

E) Write down the causes of water pollution and control measures of water pollution.

F) Write down the role of an individual in prevention of pollution.

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G) Write a note on "Environmental Protection Act".

H) Define pollution. Explain water pollution and effects of water pollution.

Q.4. Attempt any three:

[15]

A) Write short note on: corrosion, economics and importance of corrosion

B) Explain the electrochemical theory with reaction.

✓ C) Write any four physical characteristics of 15 group elements.

D) Write three types of carbonyl groups on the basis of bonding.

E) Name the elements of group 17. Give their electronic configuration.

✓ G) Explain structures of: a) XeF_2 b) XeF_4
