10/10/2017 CHEMISTRY P-III S.Y.B.Sc SEM-III MARKS 75 TIME 2.5HRS

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 the composition of crude oil.
B. What is syn gas? How it is prepared from i) coal ii) Natural gas
C. Explain coal liquefaction process
D. Explain the refining of the petroleum.
E. Explain different types of coals with its properties.
F. What is biofuel? Write a note on biodiesel.
G. What is nitration? Explain the mechanism of nitration.
H. Explain fractional distillation process.

Q.2. Attempt any four **[20]**

A. Describe in brief the Oxygen cycle with flow diagram.
B. Explain Le-chatelier's principle. Explain the effect of different conditions based on the principles.
C. Explain the process and working of contact process in brief. Give uses of sulphuric acid.
D. Illustrate the Nitrogen cycle with flow diagram.
E. Explain in brief any three physico-chemical principles involved in manufacture of Ammonia by Habers process. Give uses of ammonia.
F. Explain in brief concept of 4 'R' involved in waste management.
G. What is catalyst and give its any two ideal requirements? Explain the general characteristics of the catalytic reactions.
H. Explain the composition of different segments of Environment.

Q.3. Attempt any Four **[20]**

A. Explain the natural sources of water.
B. Give chemical composition of surface water and sea water.
C. Give reason a) Why ice floats on the water b) Water is used as a coolant.
D. What is Hydrogen bonding of water molecule? How it affects the properties of water?
E. What are the surface water requirement of water for - i) recreation and aesthetic value ii) Aquatic life and wild life
F. Give standards of water for any five industries.
G. Explain any five chemical properties of water.
H. Mention the parameters & the permissible limits by WHO for drinking water

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Q.4. Attempt any three: **[15]**

A. What is sulphonation ? Explain mechanism of sulphonation with example
B. Discuss the carbide theory for origin of petroleum.
C. Explain in brief any one chemical event causing hazard to Environment.
D. Explain in brief any three physico-chemical principles involved in manufacture of sulphuric acid.
E. Write a short note on TS, TDS, and TSS of the water.
F. Give method for the determination of chlorides in water.