Roll No. 22GITA-42

GLOBAL INSTITUTE OF TECHNOLOGY

B. Tech. I Semester I MidTermExam.-2022

1FY2-03Engineering Chemistry

Branch: Common for Section A & B

Date:23/12/2022; Day: Friday

Time: 3 Hours **Maximum Marks: 70**

Attempt all questions

Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. no supplementary sheet shall be issued in any case.

Part A (Answer should be given up to 25 words only)
All questions are compulsory

Q.1Define degree of hardness of water.

Q.2What is sludge and scale formation and their disadvantages?

Q.3Define Gross and Net calorific value?

Q.4What is carbonization of coal andits significance?

Q.5 What is cetane number and its significance?

Q.6Write the units of hardness of water and their interrelation?

Q.7 What is disinfection of water?

Q.8 What is priming and foaming?

Q.9What is quenching and its significance?

Q.10 What is fractional distillation?

10x 2 = 20

Part B Analytical/Problem solving questions
Attempt all questions (word Limit 100)

Q.1A sample of water on analysis was found to contain the following in mg/l

$Mg(HCO_3)_2$= 36.5; $MgSO_4$=60;$CaCl_2$= 111;$Ca(NO_3)_2$=82;SiO_2= 2.4; NaCl= 2.5.

Calculate the amount of lime (85%) and soda (90 %) for softening one billion liters of water.

Q.2Describe the method for the determination of calorific value of solid fuels.

Q.3Describe the proximate analysis of coal.

Q.4Explain the break point chlorination.

Q.5Describe the Permutit method. **5 x 4 =20**

Part C (Descriptive/Analytical/Problem Solving/Design Question)
Attempt all questions

Q.1Define cracking. Describe moving bed catalytic cracking process with neat and labeled diagram?

Q.2Describe the cold -lime soda treatment method with chemical reactions for the softening of water.

Q.3What is synthetic petrol? Describe the process of preparing synthetic petrol

3x10 =30