PRE - CHE 4053 END SEM - JUNE - 2023

Type: DES

Q1. Classify the crude oil based on location, key fraction 1 & 2 and characterization facto (4)

Q2. Manufactured gas with 15 (in watts) Wobbe number is burning at 8 m bar. This is required to replace with 45 (in watts) Wobbe number natural gas. Calculate the pressure requirement of natural gas (Hint: Gas Modulus = [P^(1/2)]/Wobbe number), where P is pressure (3)

Q3. Draw the atmospheric distillation column and mention the products? (3)

Q4. Determine the volume average boiling point of crude oil. (graph sheet will be provide (check the resource material for additional data/information) (5)

Q5. Estimate the viscosity of pure benzene at 15 °C and its specific gravity is 0.9 (check the resource material for additional data/information) (3)

Q6. Sulphur is present in crude oil in various forms, Explain the types of sulphur compon present in crude oil and derived products (2)

Q7. Inorganic salts present in crude oil leads to corrosion problem to the equipment. Pla suitable method to remove the salts present in crude oil and describe with the hel diagram. (5)

Q8. List the major properties usually measured for gasoline and explain Reid vapour pres measurement technique (3)

Q9. Define the burning quality test for kerosene (2)

Q10. Smoke point of crude oil product is high if the paraffinic components is high in product. Justify the statement. Define smoke point. (3)

Q11. Compare the hydrodesulphurization process of kerosene and diesel with flow sheet.

Q12. Name at least five additives blended with lube oil and explain any two. (3)

Q13. Hydrogen requirement is high in petroleum products processing and purifica process. With the help of various reactions, explain hydrogen manufacturing. (5)

Q14. Thickeners are used in grease manufacturing, name at least two thickeners and exp (3)

Q15. Discuss at least two lubricants used in industry (2)