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**Question Paper Code: 99901**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Elective

Chemical Engineering

19UCH901 - Petroleum Refining Engineering

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

- Name the extraneous substances that are found in crude oil CO1- U  
(a) Water and gas      (b) Hydrocarbons      (c) Sulphur      (d) Nitrogen
- Name the hydrocarbons which are called as paraffins CO1- U  
(a) alkynes      (b) alkenes      (c) alkanes      (d) arenes
- Which of the following petroleum products has minimum flash point CO2- U  
(a) gasoline      (b) kerosene      (c) high speeddiesel oil      (d) fuel oil
- Which of the following products contains maximum sulphur? CO2- U  
(a) LPG      (b) ATF      (c) LDO      (d) Furnace oil
- During Cracking of Natural gas, what is produced? CO2- U  
(a) Carbon      (b) Hydrogen      (c) Both C and H<sub>2</sub>      (d) None of the above
- In presence of which catalyst is H<sub>2</sub> from water gas and steam extracted? CO2- U  
(a) Magnesium oxide      (b) Copper oxide      (c) Iron oxide      (d) Nickel
- By which process only saturated hydrocarbons are obtained in LPG? CO4- U  
(a) Straight distillation      (b) Thermal cracking  
(c) Hydrocracking      (d) Reforming
- What does the word petrochemicals signify? CO4- U  
(a) Chemicals based on coal      (b) Chemicals based on rocks  
(c) Chemicals based on atmospheric conditions      (d) Chemicals based on fertility

9. Petroleum proteins are obtained by \_\_\_\_\_ of straight chain paraffin's. CO5- U
- (a) Fermentation (b) Controlledoxidation
- (c) Chlorination (d) Thermal cracking

10. Which of the following are contains crudes of mixed base oils? CO5- U
- (a) Ankaleswar (b) Cambay (c) Naharkatiya (d) Mumbai

PART – B (5 x 2= 10 Marks)

11. What is meant by in organic theory in formation of crude oil? CO1- U
12. What are the disadvantages results by processing salt content crude oil? CO2- U
13. Give the classification of crude oil. CO3- U
14. What is meant by coking process? CO4- U
15. Expand PCRA. CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) Explain in detail the constituents of crude oil. CO1- U (16)
- Or
- (b) Discuss in detail the hydrocarbons present in the crude oil CO1- U (16)
17. (a) Why quality control of petroleum products is essential in petroleum industries and what are the properties are considered for analysis. CO2- U (16)
- Or
- (b) Narrate the importance of analyzing the viscosity of fuel and the role of viscosity index. CO2- U (16)
18. (a) Discuss in detail about the Electrical Desalting procedure in removing impurities from crude oil. CO3- U (16)
- Or
- (b) Explain the importance of Atmospheric distillation of crude oil with a neat flow diagram mentioning its products CO3- U (16)
19. (a) Narrate the chemistry, catalyst and UOP catalytic polymerization process in refineries CO4- U (16)

Or

- (b) Explain in detail the reactions, catalysts and process involved in catalytic reforming with a neat flow diagram. CO4- U (16)
20. (a) Write short notes on CO5- U (16)
- (i) Cloud point and pour point
  - (ii) Flash point and fire point
  - (iii) Freezing point
- Or
- (b) What is a suitable Petroleum Production based on Industry? CO5- U (16)

