QP Code:RM21BTECH505 | Reg. No | | | | | | | | | | | AY 21

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Sixth Semester Regular) Examinations, May – 2024

21BCHPE36002 – Fuel and Energy Technology

(Chemical)

Time: 3 hrs | Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a. Explain Coalification Process. Discuss it with respect to rank.	CO1	K1
b. What are the compositions of LPG? Why mercaptan is added in LPG?	CO1	K2
c. What is Stabilisation? Why it is done?	CO2	K1
d. What are the advantages of Catalytic Cracking over Thermal Cracking?	CO2	K2
e. What is the purpose of Radiation shield?	CO3	K1

PART – B **(15 x 4=60 Marks)**

Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a. Enumerate about the origin of coal formations.	7	CO1	K2
b. What are the different Losses take place during Coal Storage? How it can be Prevented?	8	CO1	K2
(OR)			
c. Examine the typical composition of Coal Tar. Discuss about the coal tar distillation process.	7	CO1	K2
d. Elaborate the Beehive coke oven process with neat diagram during the manufacturing coke.	8	CO1	K3
3.a. Differentiate between High and Low temperature carbonizations.	7	CO2	K1
b. Outline the by-product coke oven process with neat diagram during the manufacturing coke.	8	CO2	K2
(OR)			
c. Demonstrate the formation of petroleum on the basis of inorganic and modern theory.	7	CO2	K1
d. Analyse the different Pre-treatment processes of oil at Oil field before Refining.	8	CO2	K2
4.a. With a neat flow sheet show the flow sheet of different product from crude mentioning its end uses of each.	7	CO3	K3
b. Enumerate the various steps in atmospheric crude oil distillation during processing step.	8	CO3	K2
(OR)			

c.	What are the factors affecting cracking?	7	CO3	K2
d.	What is cracking? Why is its requirement? Write the reactions involved in catalytic cracking. Explain FCC with neat sketch.	8	CO3	K3
5.a.	Differentiate among water gas, semi water gas and Carburetted water Gas.	7	CO4	K1
b.	What is Synthetic Fuel? Discuss the Fischer Troph Process for converting the solid into liquid fuel.	8	CO4	K2
	(OR)			
c.	What is nuclear fuel? Why it is popular for power generation.	7	CO4	K2
d.	Discuss about the types and elements of a nuclear reactor in detail mentioning.	8	CO4	K2

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