Q.24 Discuss the working principles, advantages and limitations of solar collectors, such as Flat Plate Collectors. (CO4)

Q.25 Discuss two petroleum products obtained from crude oil processing. Explain their properties and various industrial, domestic and commercial applications. (CO3)

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6th Sem.
Branch : Chemical Engineering
Sub. : Energy Technology

Time : 3 Hrs. **M.M. : 60**

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (6x1=6)

Q.1 Which of the following fuels can be tested in a Bomb calorimeter? (CO2)

a) Solid fuels only

b) Liquid fuels only

c) Gaseous fuels only

d) Solid, Liquid and gaseous fuels

Q.2 In which distillation process is crude oil heated and separated in one step? (CO3)

a) Shell still distillation

b) Single stage distillation

c) Two stage distillation

d) Three stage distillation

Q.3 Which of the following is s renewable energy source? (CO4)

a) Petroleum b) Natural Gas

c) Wind Energy d) Diesel

Q.4 The main component of petroleum is (CO3)

a) Oxygen b) Hydrocarbons

c) Nitrogen d) Carbon dioxide

Q.5 Solar energy comes from (CO4)

a) Wind b) Sun

c) Water d) Biomas

Q.6 The SI unit of energy is (CO1)

a) Calorie b) Joule

c) Watt d) Newton

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Producer gas has a higher calorific value than LPG. (True / False) (CO2)

Q.8 The method used to determine moisture, volatile matter, fixed carbon, and ash content in coal is called _____ analysis. (CO2)

Q.9 The gross calorific value (GCV) of coal is always higher than its net calorific value (NCV). (True / False) (CO2)

Q.10 Expand KVIC. (CO4)

Q.11 Petroleum is a renewable source of energy. (True/ False) (CO3)

Q.12 The two main types of solar collectors are ___ and _____. (CO4)

SECTION-C

Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x4=32)

Q.13 Differentiate between renewable and non renewable energy sources. (CO4)

Q.14 Describe Mechanical Energy and Heat Energy with example. (CO1)

Q.15 Explain proximate analysis of coal and its significance. (CO2)

Q.16 Describe about wind turbines. (CO2)

Q.17 Explain net calorific value and write its formula. (CO2)

Q.18 Explain low temperature carbonization. (CO2)

Q.19 Describe the working principle of a solar chimney power plant. (CO4)

Q.20 Explain the role of sustainable energy in environmental protection. (CO1)

Q.21 Describe the manufacturing process of water gas. (CO3)

Q.22 List two merits and demerits of solid fuels with gaseous fuels. (CO2)

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x8=16)

Q.23 Describe the construction and working of KVIC digester with neat and clean diagram used for bio gas plant.(CO4)