B. Sc. CHEMISTRY FOURTH SEMESTER PETROLEUM & PETROCHEMICALS

BSC - 406A

(Use Separate Answer Scripts for Objective & Descriptive)

Duration 1.30 hrs

Full Marks: 35

[PART-A: Objective]

Time: 10 min

Marks: 10

Choose the correct answer from the following:

 $1 \times 10 = 10$

1. Energy resources derived from organic material are called:

a. Geothermal energy c. Bio mass

b. Fossil fuel d. All of these

2. Which of the following is/are renewable energy source?

(i) Solar, (ii) Methane, (iii) Hydroelectric and (iv) Coal

a. I & iii only

b I, ii & iii

c. ii & iii

d I, iii & iv

3. What is the significance of calorific value?

a. Helps in deciding which fuel is good.

b Helps in locating fuel

c. Heps in deciding ignition temperature.

d Helps in deciding fire points.

4. Crude oil is heated to about what temperature for collecting different fractions during fractional distillation.

a. 100°C

b 300°C

c. 400°C

d 1000°C

5. Which of the following petroleum product will have highest viscosity at a given temperature?

a. Motor spirit

b Light diesel oil

c. Aviation Turbine fuel

d High speed diesel oil

6. Which of the following raw material obtained from petroleum can be used in preparation of acetic acid?

a. Acetone

b Phosphoric acid

c. Ethylene

d Tartaric acid

7. The compound A formed and compound B necessary to produce polyester in the following set of reactions are respectively:

a. Phthalic acid and ethylene glycol.

b Terethalic acid and ethylene glycol.

c. Phthalic acid and ethylene diamine.

d Terethalic acid and ethylene diamine.

8. Lubrication is necessary to protect wear and tear caused due to:

a. Electrostatic force

b Gravitational force

c. Frictional force

d Magnetic force

9. Which of the following is an important property of lubrication?

a. Viscosity

b Density

c. Thermal conductivity

d Melting point

10. Water gas is a mixture of:

a. H₂, O₂, N₂

b H₂, CO₂, N₂

c. H₂, CO, CO₂

d CO, CO₂, N₂

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(PART-B : Descriptive)

Time: 1 hr. 20 min. Marks: 25

[Answer question no.1 & any four (2) from the rest]

1.	nonrenewable source of energy. What are their merits and demerits?	
2.	what is crude oil? Narrate theories of origin of crude oil? Give a short account of refining of crude oil along with name and composition of different fraction.	2+2+ =1
3.	Give a short account of composition, use and production/ sources of the following type of fuels: (i) Bio gas (ii) Natural gas (iii) LPG (iv) LNG (v) SNG	1
4.	a. Explain the following: (i) Viscosity Index and (ii) Cloud point of a lubricant.	3+2=5
	b. What is the full form of the petrochemical BTX. Mention names of some chemicals that can be obtained from these petrochemicals. Give chemistry of production of at least one of the chemicals mentioned.	1+2+2 =5
5.	a. Describe coal in terms of its composition, types of coal in terms of carbon content and their uses.	1+2+2
	b. Briefly describe composition of different fractions obtained by fractional distillation of coal tar, obtained during	5

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