(ii) Part per million.   3

(iii) Vapour pressure.   3

(iv) Weight fraction.   3

4. (a) What is petroleum ? Describe use of petroleum as a fuel with their example.   8

    (b) What do you mean by conventional and non conventional fuel ? Distinguish between these two.   4

OR

5. (p) Where Petroleum refineries are located in India ? Name these refineries with their organization year of installation and production capacity.   8

    (q) Describe primary solid fuel in detail.   4

6. (a) Which observation and facts are explained by J. D. Haun for accepting the organic theory for formation of Petroleum ?   6

    (b) Describe the magnetic method in detail for prospecting of crude oil.   6

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First Semester B. Sc. (Part - I) Examination

1S : PETROCHEMICAL SCIENCE

P. Pages : 6

Time : Three Hours]   [Max. Marks : 80

Note : (1) Question no. **one** compulsory and carries **eight** marks.
      (2) Remaining **six** questions carry **twelve** marks each.
      (3) Give chemical equations and draw diagrams wherever necessary.
      (4) Use of calculator is permitted.

1. (a) Fill in the blanks with appropriate words :—

    (i) The pressure exerted by the vapour above the free surface of the liquid at the temperature is called as _____ .

    (ii) In Malison classification, residue less than 2% _____ is _____ base.

    (iii) General formula of mercaptans _____ .

    (iv) Butane exhibits _____ isomers.

    2

(b) Choose correct alternative :

(i) Composition of crude oil is _____ if source of formation changes.

    (a) Same

    (b) different

    (c) mixed

    (d) None of these

(ii) The homologous series present in petroleum are found only in _____ matter.

    (a) Organic

    (b) Inorganic

    (c) Bioorganic

    (d) All above

(iii) Petroleum occurs in the earth's crust in the form of _____ .

    (a) Solid state

    (b) gases state

    (c) Liquid state

    (d) All above

(iv) When natural gas contains small amount of condensable higher hydrocarbon called as _____ .

    (a) Dry gas

    (b) Dissolved gas

    (c) Casing head gas

    (d) Associated gas.   2

(c) Answer the following questions in one sentence :—

    (i) What is weight fraction ?

    (ii) What is Petroleum ?

    (iii) What is Kinematic viscosity ?

    (iv) Which non-hydrocarbon impurities present in crude oil ?   4

2.   (a) Define the term normality. Find the normality of solution prepared 10 gm of NaOH in 1 liter distill water.   6

    (b) What is Calorific value ? Describe with their example.   6

OR

3.   (p) Define the following terms :—

    (i) Acids and base.   3

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OR

7. (p) Discuss the formation of crude in detail. 6

(q) Why drilling mud utilized in drilling operation ? Mention the functions of mud fluid. 6

8. (a) Describe elemental composition of crude oil. 6

(b) Describe key fraction method used for classification of crude oil. 6

OR

9. (p) Which non hydrocarbons impurities are found in crude oil ? Explain these impurities with their disadvantages. 6

(q) Which hydrocarbon are not present in crude oil ? Explain with examples. 6

10. (a) Which technique is used for separation OR purification of hydrocarbon ? Explain in detail. 8

(b) Describe the function of pump around reflux column with well lable diagram. 4

OR

11. (p) Desalting is important step in crude oil refining. Explain electrical desalting method with well labled diagram and process parameters involved. 8

    (q) Mention the general operating data and dimensions for A. D. U. 4

12. (a) Describe the following test properties in detail :-

    (i) Flash and Fire Point. 4

    (ii) Smoke point. 4

    (iii) Aniline point. 4

OR

13. (p) What is the importance of following properties for petroleum products ?

    (a) Viscosity. 3

    (b) Octane number. 3

    (c) Cetane number. 3

    (d) Diesel index. 3

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