AT – 271

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

1S:PETROCHEMICAL SCIENCE

P. Pages : 6

Time : Three Hours] [Max. Marks : 80

Note : (1) Question no. **One** compulrosy and carries **Eight** marks.
(2) Remaining **Six** question 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 process and removal of salt from crude oil is known as ————.

(ii) ———— is a mixture of carbon monoxide and Nitrogen.

(iii) When natural gas contains very small amount of condensable hydrocarbons it is called as ————.

(iv) pH value is less than seven then solution is ————. 2

(B) Choose correct alternative : –

(i) Water gas is also known as————.

(a) Colourless gas (b) Blue gas

(c) Red gas (d) Yellow gas

(ii) Hydrocarbons not present in crude oil—————.

(a) Paraffinic (b) Olefinic

(c) Naphthenic (d) Aromatics

(iii) In key fraction No 1 API gravity > 40 then crude oil is ————

(a) Paraffinic base (b) Napthenic base

(c) Mixed base (d) Aromatic base

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(iv) If temprature of lube oil increased then vicosity of oil ————

(a) Decreases (b) Remains same

(c) Increases (d) None of these

(C) Answer the following question in **One** sentece:—

(i) What is general formula of paraffins ?

(ii) Which type of rock is probable source of crude oil ?

(iii) What is refining ?

(iv) What is peat ? 4

2. (A) Define and explain following terms :

(i) Atomic weight. 3

(ii) Equivalent weight. 3

(iii) Molecular weight. 3

(iv) Mole fraction. 3

OR

(P) What is molarity ? Calculate the molarity of 324 gm of $AgNO_3$ dissolved in water to form 500 ml of solution. 6

(Q) What do you mean by potential hydrogen ? Describe in detail. 6

4. (A) Describe the history of petroleum and gas industry in India. in detail. 8

(B) Describe secondary gases fuels with their examples. 4

OR

5. (P) Petroleum is an importent source for fuel and petrochemical products. Discuss their importance as a source of petrochemical. 8

(Q) Describe relative merits and demerits of conventional and non conventional energy resources. 4

6. (A) Describe the following petroleum prospeting method :

(i) Gravimetric method. 6

(ii) Seismic method. 6

OR

7. (P) What is drilling ? Discuss cable tool drilling method in detail. 6

(Q) What are the observations of Engler organic theory ? 6

8. (A) Paraffinic type of hydrocarbons are present in crude oil. Describe those paraffins with their properties and examples. 6

(B) Describe the composition of crude oil in detail. 6

OR

9. (P) Why classification of crude oil is necessary? Describe key fraction method based on API gravity. 6

(Q) Discuss oleophilic and oleophobic impurities present in crude oil. 6

10. (A) What is distillation ? Explain in detail its application in petroleum refinery. 8

(B) Why desalting of crude oil is necessary ? Describe settling method for desalting operation. 4

OR

11. (P) Why residum of A.D.U. Processed in V.D.U.? Explain with well labeled diagram. 8

(Q) Which fractions are obtained from atmospheric distillation unit. Name them with their composition, boiling range and their uses. 4

12. (A) Why diesel index test is important for diesel fuels ? Explain with the formula. 6

(B) Why octane number calculated for gasolene fuel ? Explain in detail. 6

OR

13. (A) How to calculate API gravity ? Describe its significance in characterizing petroleum products. 6

(Q) Describe Conradson carbon residue test and its significance in detail. 6