B.Sc. Part–I Semester–I Examination
PETROCHEMICAL SCIENCE

Time : Three Hours] [Maximum Marks : 80

N.B. : (1) Question No. **1** is compulsory and carries **8** marks.
(2) Remaining **six** questions carry **12** marks each.
(3) Give chemical equation and draw diagram wherever necessary.
(4) Use of calculator permitted.

1. (A) Fill in the blanks :
(i) The C.G.S unit of force is _____.
(ii) In India first oil well was discovered at Assan in year _____.
(iii) Drilling fluid is also called as _____.
(iv) Viscosity of oil decrease with increase in _____. 2

(B) Choose the correct alternative :
(i) m^3 is the unit of :
(a) Density (b) Area
(c) Volume (d) Velocity
(ii) Water gas is also called as _____ gas.
(a) Blue (b) White
(c) Yellow (d) Red
(iii) Crude oil mostly occurs in the _____ rocks.
(a) Ingneous (b) Sedimentary
(c) Metamorphic (d) All of these
(iv) The specific gravity of the hydrocarbon increases with _____.
(a) Molecular weight (b) Atomic weight
(c) Equivelt weight (d) All of the above 2

(C) Answer the following question in **one** sentence :
(i) What are Distillates ?
(ii) What is Rotary table ?
(iii) What is meant by Weight Fraction ?
(iv) What are primary fuels ? 4

2. (A) Define the following terms :
(i) Acid 2
(ii) Base 2
(iii) Part per million 2
(iv) Weight fraction 2
(v) Atomic weight 2
(vi) Equivalent weight 2

OR

3. (P) What is molecular weight ? How will you calculate it ? Describe with example. 6

(Q) Why calorific value was important term of each fuel. Describe in detail. 6

4. (A) Compare conventional and non-conventional fuel with their demerits and merits. 6

(B) What is Petroleum ? Describe Indian Petroleum industries with their name, location and year of installation. 6

OR

5. (P) What is Fuel ? Classify fuels with their classes. 6

(Q) Which are the Petroleum fuels ? Describe with example. 6

6. (A) What is the function of drilling muds ? 6

(B) Describe Gravimetric method used for exploration of crude oil. 6

OR

7. (P) Describe rotary drilling with their essential parts. 12

8. (A) Describe the following with their general formula, physical, chemical properties and example :

(i) Paraffins 6

(ii) Olefins 6

OR

9. (P) Discuss the composition of crude oil in detail. 6

(Q) What is oleophilic impurities ? Explain with example. 6

10. (A) In which process reduced crude process ? Discuss with their operating data. 6

(B) Why purification of crude oil is necessary before process ? Which impurities are present in crude oil ? 6

OR

11. (P) Describe desalting of crude oil through settling method with diagram. 6

(Q) Discuss operating data of atmospheric distillation unit in detail. 6

12. (A) Define and describe the following in detail :

(i) Flash point 4

(ii) Smoke point 4

(iii) Aniline point 4

OR

13. (P) What is octane number ? Explain significance of this property. 6

(Q) How will we calculate diesel index ? What is the importance of this test property ? 6