

Seat No: _____

Enrollment No: _____

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Winter 2019 - 20 Examination

Semester:3
Subject Code: 203120207
Subject Name: Petroleum Exploration

Date:06/12/2019
Time:02:00pm to 04:30pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five (15) in case of MCQ) (All are compulsory) (Each of one mark)

- 1.The oil window temperature range for hydrocarbon is _____
- 2.Seismic data at sea is acquired using_____
- 3.The initial stage of kerogen alteration is termed as _____
- 4.The _____ rocks are are kerogene rich rock
- 5.The Bombay high basin has _____ reservoir rock
- 6.The H/C ratio for kerogen III
 - a) 0.5-0.8
 - b) 0.8-1.3
 - c) More than 1.5
 - d) None of the above
- 7.The process where kerogen is subjected to more heat and is further changed to liquid and gaseous hydrocarbon
 - a) Metagenesis
 - b) Catagenesis
 - c) Diagenesis
 - d) All of the above
- 8.Reservoir rock containing petroleum has
 - a) Low permeability
 - b) High permeability
 - c) High porosity
 - d) Both b an c
- 9.which of the following types of organic matter in sediments include oil shale of marine organism
 - a) Type I
 - b) Type II
 - c) Type III
 - d) Type IV
- 10.Which of the following method measures spatial variations in the earth
 - a) Seismic reflection survey
 - b) Gravity survey
 - c) Magnetic survey
 - d) Geochemical survey
11. What do you mean by Hydrodynamic trap?

12. What is CMP Gather?
13. Write any one difference between kerogen and bitumens.
14. What are conventional and unconventional sources?
15. What is tertiary migration?

Q.2 Answer the following questions. (Attempt any three) **(15)**

- A) What do you mean by reserves? Describe classification of reserves.
B) What do you mean by exploration of hydrocarbon? Write different exploration methods.
C) What is trap? Describe various types of traps.
D) Write a short note on body waves.

Q.3 A) Derive the expression of travel time taken by seismic wave in seismic reflection survey with neat and clean diagram. **(07)**

B) What do you mean by hydrocarbon? Write composition of hydrocarbon. Describe various theories for origin of hydrocarbon. **(08)**

OR

B) Write a short note on various methods for detection of hydrocarbon. **(08)**

Q.4 **(07)**

A) Explain how pyrolysis is useful for simulation of natural petroleum generation process.

OR

A) Write a brief note on accumulation and maturation of petroleum **(07)**

B) What do you mean by seismic processing? Write various steps involve in processing. **(08)**