R09

Code No: 58599

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, May - 2017
ENHANCED OIL RECOVERY TECHNIQUES
(Petroleum Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks
- - -

1.a) What do you understand by unit displacement efficiency and volumetric displacement efficiency?
b) Write a short note on tertiary oil recovery methods. When do you think one should start with EOR application? [8+7]

2.a) Write limitations and disadvantages of secondary oil recovery techniques.
b) Write down major differences between polymer and surfactant flooding. [8+7]

3.a) What is the significance of contact angle and capillary number in enhanced oil recovery techniques.
b) Explain the significance of mobility ratio. What is steam assisted gravity drainage and how does it affect the production of crude oil? [8+7]

4.a) Explain about chemical EOR techniques.
b) Explain operational aspects of steam injection processes. [8+7]

5.a) Specify the role of wettability and contact angle in EOR applications.
b) Why do we use anionic surfactants in EOR and explain the working mechanism of surfactant in enhancing production. [7+8]

6.a) Write a short note on microbial enhanced oil recovery and its limitations.
b) Write a note on steam flooding for EOR. Discuss major components of steam flooding technique. [7+8]

7.a) Write short note on ignition methods.
b) How will you choose a candidate oil well for EOR project? [8+7]

8.a) With the help of neat diagram, explain surfactant/polymer flooding process.
b) How much oil volume can be recovered with EOR techniques? Do you think every company must comply with EOR technique? Why? [7+8]

--ooOoo--