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DEPARTMENT OF CHEMICAL ENGINEERING

VII Semester B.Tech.

End-Semester Examination – Dec 2021 (Proctored Online Examination)

CHE 4304: Introduction to Petroleum Engineering (Open Elective-IV)

PART B

DATE: 29/12/2021

TIME: 75 + 10 MINUTES

MAX. MARKS: 20

Note: Answer ALL questions

Q.1A) Define the term sedimentary basin. Describe the organic theory for the basin formation.

[3]

Q.1B) What is casing in the drilled oil well? Discuss in detail the types of casing used in oil well during drilling.

[3]

Q.1C) In the case of a water drive reservoir mechanism, if a down structure well is perforated (i.e. for a structurally located low wells), what will be the effect on the reservoir pressure, gas-oil-ratio, water production rate and oil recovery? Also, comment whether the down structure perforation of hole will be favorable for the maximum recovery or not.

[4]

Q.2A) Discuss the significance of capillary number and mobility ratio. How these two parameters affect the recovery of residual oil present in the reservoir?

[3]

Q.2B) Discuss the polymer flooding EOR method in detail including its mechanism, process, and limitations.

[4]

Q.2C) Explain the crude atmospheric distillation (AD) process with a neat sketch of a process flow diagram. Clearly mention the operating conditions, and typical products obtained in the substreams of AD process.

[3]