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18PC53

Fifth Semester B.E. Degree Examination, Feb./Mar. 2022
Reservoir Engineering

Time: 3 hrs. Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. List out the activities of reservoir engineer and explain their role. **(10 Marks)**
  b. Discuss the physical principles involved in servior engineering. **(10 Marks)**

OR

2 a. Discuss physical properties of crude oil, explain pressure-volume-temperature fluid properties. **(10 Marks)**
  b. Write a note on ;
    i)   Equity determination
    ii) Pressure – depth plot. **(10 Marks)**

Module-2

3 a. Explain various geological models under in reservoir geology. **(10 Marks)**
  b. Explain about sesmic development survey. **(10 Marks)**

OR

4 a. Write a note on : i) Reservoir geometry   ii) Fluid flow equation. **(10 Marks)**
  b. With neat sketch explain horizontal and vertical oil wells. **(10 Marks)**

Module-3

5 a. How do you classify reservoir and reservoir fluids? Explain. **(10 Marks)**
  b. Write note on :
    i) Calculation of viscosity of natural gas
    ii) Properties of crude oil systems. **(10 Marks)**

OR

6 a. Explain the laboratory analysis of gas condensate system. **(10 Marks)**
  b. Write notes on :
    i) Rock compressibility and reservoir heterogeneity
    ii) Two and three phase relative permeability. **(10 Marks)**

Module-4

7 a. Explain in detail about primary recovery mechanism and material balance equation. **(10 Marks)**
  b. Explain volumetric method of material balance equation in gas reservoir. **(10 Marks)**

OR

8 a. List out essential observation is required in well testing and their purpose. **(10 Marks)**
   b. Write note on :
       i)   Pressure buildup testing
       ii) Pressure support during appraisal well testing. **(10 Marks)**

Module-5

9 a. Discuss the factors that are to be considered in water flooding. **(10 Marks)**
   b. Write in brief about :
       i)   recovery efficiency
       ii)   displacement efficiency. **(10 Marks)**

OR

10   Write a notes on :
       a) Equilibrium ratio
       b) Vertical sweep efficiency
       c) Optimum time to water flooding
       d) Application of equilibrium ratio. **(20 Marks)**

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