



C20-PET-402

7486

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DPET – FOURTH SEMESTER EXAMINATION

RESERVOIR ENGINEERING

Time : 3 Hours]

[Total Marks : 80

PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **three** marks.
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Define under saturated oil reservoir and saturated oil reservoir.
2. Write a short note on retrograde gas condensate reservoir.
3. Write a short note on compressibility of natural gas.
4. Three pounds of n-butane are placed in a vessel at 120 °F and 60 psia. Calculate the density of gas assuming ideal gas behavior.
5. Write a short note on capillary pressure.
6. Write a short note on Leverett J-function.
7. Write any three characteristics of gravity drainage drive mechanism.
8. Write a short note on gas oil ratio of water drive mechanism.
9. Write about thermal flooding.
10. What is mobility ratio?

PART—B

8×5=40

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Explain the classification of gas reservoirs with phase diagrams.

(OR)

(b) Explain the classification of oil reservoirs with phase diagrams.

12. (a) Explain briefly about the behavior of real gases.

(OR)

(b) A gas has the following composition :

COMPONENT	y_i	M_{Wi}
C1	0.75	16.04
C2	0.07	30.07
C3	0.05	44.10
C4	0.04	58.12
C5	0.04	72.15
C6	0.03	86.18
C7	0.02	100.21

Assuming an ideal gas behavior, calculate apparent molecular weight, specific gravity, gas density and specific volume at 1000 psia and 100 °F.

13. (a) Explain about Dykstra-Parsons permeability variation.

(OR)

(b) Explain briefly about the Klinkenberg effect.

14. (a) Explain briefly about the combination drive mechanism.

(OR)

(b) Explain about the parameters involved in gas cap drive.

15. (a) Explain the factors effecting water flooding.

(OR)

(b) Explain briefly about the alkaline flooding.

PART—C

10×1=10

- Instructions :**
- (1) Answer the following question.
 - (2) The question carries **ten** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. When is insitu flooding used? Explain briefly.

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