Roll No											

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING
MID TERM EXAMINATION - APR 2023

Semester : Semester VI - 2020
Course Code : PET2018
Course Name : Sem VI - PET2018 - Integrated Field Development and Planning
Program : PET

Date : 15-APR-2023
Time : 2PM - 3.30PM
Max Marks : 60
Weightage : 30%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS **(5 X 2 = 10M)**

1. Define reservoir rock.

(CO1) [Knowledge]

2. List any two objective of reservoir management.

(CO1) [Knowledge]

3. Define Reservoir Management.

(CO1) [Knowledge]

4. Name the recovery stages of hydrocarbons.

(CO2) [Knowledge]

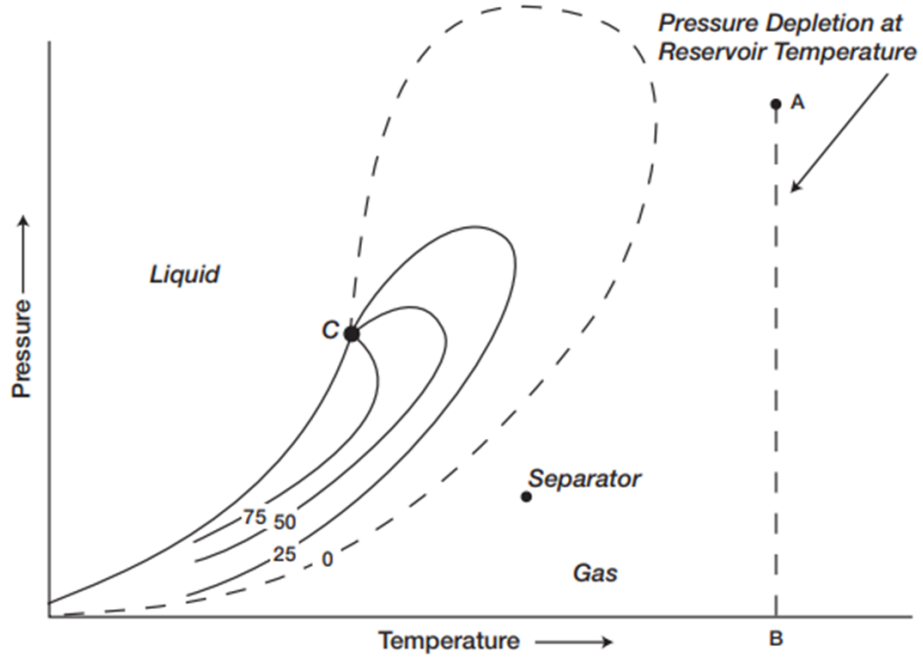
5. Define productivity Index with mathematical expression.

(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS **(3 X 10 = 30M)**

6. (a) Being a petroleum engineer you have been given the following data of core (obtained from sidewall coring method): weight of the clean dried core sample in the air: Wt (dry) =20.0gm; Weight of the core sample saturated with water: Wt (sat) =22.5gm; Density of water: ρ_w = 1.0 gm/cc; diameter and length of the core sample is 2.34 cm. Estimate the pore volume and porosity of the core sample.
(b) Identify the type of gas reservoir from the following P-T phase diagram given below in the figure. Also, explain the type of gas reservoir with its characteristics.



(CO1) [Comprehension]

7. Explain steps followed in Flash expansion and differential expansion for calculating the various properties of the reservoir.

(CO1) [Comprehension]

8. Discuss petrolium rules made by Indian Government. Also explain the salient features of New Exploration Lisencing Policy (NELP).

(CO1) [Comprehension]

PART C

ANSWER THE FOLLOWING QUESTION **(1 X 20 = 20M)**

9. While primary recovery, hydrocarbons are transported into and out of the production wells using the reservoir's natural energy. Each of the various energy sources results in a separate drive mechanism. Elucidate all known natural energy sources (drive mechanisms) available for primary recovery.

(CO2) [Application]