Roll No.												

PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF ENGINEERING

TEST - 1

Even Semester: 2018-19 | **Date**: 01 March 2019

Course Code: Reservoir Engineering-II | **Time**: 1 Hour

Course Name: PET 212 | **Max Marks**: 40

Programme & Sem: B.Tech (PET) & VI Sem | **Weightage**: 20%

Instructions:

(i) Read the question properly and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **four** marks. (3Qx4M=12)

1. What is difference between secondary and tertiary recovery? Name the reservoir characteristics that effects the water flooding.
2. Draw the staggered line and Direct-line drive flood patterns and mention their ratio of producing to injection wells.
3. A volumetric solution-gas-drive reservoir has an initial water saturation of 18%. The initial oil formation volume factor is reported at 1.51 bbl/STB. When 15% of the initial oil was produced, the value of B_o decreased to 1.38. Calculate oil saturation and gas saturation.

Part B

Answer **all** the Questions. **Each** question carries **eight** marks. (2Qx8M=16)

4. Adjust the oil saturation equation for gas cap expansion with a neat diagram.
5. Explain the principal of immiscible displacement.

Part C

Answer the Question. Question carries **twelve** marks. (1Qx12M=12)

6. Explain the Tracy's Method for Predicting oil well future performance production along with the alternative techniques suggested by Tracy.

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SCHOOL OF ENGINEERING

TEST - 2

Even Semester: 2018-19 | **Date**: 13 April 2019

Course Code: PET 212 | **Time**: 1 Hour

Course Name: Reservoir Engineering II | **Max Marks**: 40

Program & Sem: B.Tech & VI Sem | **Weightage**: 20%

Instructions:

(i) Read the question properly and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are not permitted.

Part A

Answer **both** the Questions. **Each** question carries **four** marks. (2Qx4M=08)

1. What factors are considered to calculate the optimum time to waterflood?
2. What is the principal requirement for successful fluid injection project?

Part B

Answer **both** the Questions. **Each** question carries **six** marks. (2Qx6M=12)

3. Draw a neat field life and operational flow chart.
4. Explain the overall recovery efficiency.

Part C

Answer **both** the Questions. **Each** question carries **ten** marks. (2Qx10M=20)

5. Write the assumptions and equations of Buckley Leveratt theory with proper notations. Draw and explain the fractional flow curve.
6. Describe the various injection patterns.

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END TERM FINAL EXAMINATION

Even Semester: 2018-19 | **Date**: 21 May 2019

Course Code: PET 212 | **Time**: 3 Hours

Course Name: Reservoir Engineering-II | **Max Marks**: 80

Program & Sem: B.Tech & VI Sem | **Weightage**: 40%

Instructions:

(i) *Read the question properly and answer accordingly.*

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **two** marks. (2Qx10M=20M)

1. Fill in the blanks.

a) If the reservoir pressure is high, the cost of injection equipments will be_____.
b) Water flooding is_____displacement process.
c) Reservoir heterogeneity generally denotes variation in_____.
d) The objective of appraisal study is to reduce the uncertainity in _____.
e) Water injection in water drive reservoirs can be considered to support higher_____rates.

2. Match the following drive mechanisms with their percentage recovery.

a)	Rock and liquid expansion	1)	30-60%
b)	Solution Gas Cap	2)	3-7%
c)	Gas Cap	3)	<80%
d)	Combination drive	4)	20-40%
e)	Gravity Drainage	5)	5-30%

Part B

Answer **all** the Questions. **Each** question carries **ten** marks. (3Qx10M=30M)

3. a. Explain history matching.

b. How black oil simulator is different from compositional simulator?

4. What is reservoir modelling and what are its types?
5. How reservoir heterogeneity influence the performance of a secondary or tertiary injection pattern?

Part C

Answer **both** the Questions. **Each** question carries **fifteen** marks. (2Qx15M=30M)

6. Explain how Reservoir heterogeneity, Reservoir Dip angle and well location and pattern effects secondary recovery and pressure maintenance schemes.
7. The following production data is available on a depletion drive reservoir:

P (psi)	GOR (scf/STB)	N_p (MMSTB)
	1340	0
3600	1340	1.380
3400	1340	2.260
3100	1340	3.445
2800	1936	7.240
2500	3584	12.029
2200	6230	15.321

The initial reservoir pressure is 3925 psia with a bubble point pressure of 3100 psia. Calculate cumulative gas produced Gp and cumulative GOR at each pressure.

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SUMMER TERM / MAKE UP END TERM EXAMINATION

Semester: Summer Term 2019 | **Date**: 22 July 2019

Course Code: PET 212 | **Time**: 2 Hours

Course Name: Reservoir Engineering-II | **Max Marks**: 80

Program & Sem: B.Tech & VI (2015 Batch) | **Weightage**: 40%

Instructions:

(i) Read the question properly and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and Non-programmable calculators are permitted.

Part A

Answer **all** the Questions. **Each** question carries **five** marks. (3Qx5M=15M)

1. What is Black Oil Equation and Compositional Oil Equation?
2. What is field development planning?
3. What is Appraisal Phase?

Part B

Answer **all** the Questions. **Each** question carries **ten** marks. (5Qx10M=50M)

4. What is reservoir Modelling? Explain its types.
5. Explain the applications of Reservoir Simulation.
6. What is feasibility study? Discuss feasibility study working plan.
7. Explain Field Life and Operations Flowchart.
8. Discuss briefly about integrated reservoir management.

Part C

Answer the Question. Question carries **fifteen** marks. (1Qx15M=15M)

9. Explain Buckley Leveret Theory.