



ROLL NO:

**PRESIDENCY UNIVERSITY, BENGALURU**  
**SCHOOL OF ENGINEERING**

Weightage: 20%

Max Marks: 20

Max Time: 1 hr.

Monday, 24<sup>th</sup> September 2018,

**TEST – 1**

Odd Semester 2018-19

**Course: PET 211 Well completion and  
Testing**

V Sem. Petroleum

**Instruction:**

- (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**

(3 Q x 2 M = 6 Marks)

1. What are the objectives of Well Completion of an Exploratory well? [2]
2. Why a well is Cased and Cemented ? [2]
3. Write the main functions of a Christmas tree. [2]

**Part B**

(2 Q x 3 M = 6 Marks)

4. Write names of two Subsurface valves. Explain their functions. [1+2]
5. Explain the functions of Sliding sleeves. [3]

**Part C**

(1 Q x 8 M = 8 Marks)

6. a. Draw a labelled diagram of Shaped Charge. What is function of Liner? [2+1]
- b. How Depth correlation is achieved during Perforation job? [3]
- c. Write functions of Bridge Plug and Cement Retainer Plug. [1+1]



PRESIDENCY UNIVERSITY,  
BENGALURU

SCHOOL OF ENGINEERING

TEST 2

Odd Semester: 2018-19

Course Code: PET 211

Course Name: Well Completion & Testing

Branch & Sem: PET & V Sem

Date: 27 November 2018

Time: 1 Hour

Max Marks: 20

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 **two** marks.

(3x2=06)

1. (a) Write the function of Thermo-setting Resins in Sand Control.  
(b) Write the associated problem of this process?
2. What is Galvanic Corrosion?
3. Write the names of few methods for Corrosion Inhibition.

(2)

(2)

(2)

**Part B**

Answer **all** the Questions. **Each** question carries **three** marks.

(2x3=6)

4. What is Acid Fracturing? When it is used?
5. What is Pre-fracturing in Hydro-fracturing?

(3)

(3)

**Part C**

Answer the Question. Question carries **eight** marks.

(1x8=8)

6. a. Write the three steps required for Sandstone Acidizing job.
- b. Write one name of Viscosifier used in Hydrofrac job.
- c. Does corrosion depend on Electrolyte?
- d. What is the order of Permeability of Shale Hydrocarbon formation?
- e. What is the Utility of Hydrofracturing?

(4)

(1)

(1)

(1)

(1)



Roll No.

**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING**

**END TERM FINAL EXAMINATION**

**Odd Semester:** 2018-19

**Course Code:** PET 211

**Course Name:** Well Completion and Testing

**Programme & Sem:** PET & V Sem

**Date:** 28 December 2018

**Time:** 2 Hours

**Max Marks:** 40

**Weightage:** 40%

*1st Final*

**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 **both** the Questions.

(2Q=14)

1. Write two merits and one Demerit of the following Pumps, i.e SRP Pump, ESP Pump, Hydraulic Pump and Progressive Cavity pump. [6]
2. What are the Assumptions (with equations) incorporated in derivation of Diffusivity Equation. Write the Diffusivity equation in Radial form. [7+1]

**Part B**

Answer **both** the Questions. **Each** question carries **six** marks.

(2Qx06M=12)

3. Write the assumptions to derive a workable Solution of the Diffusivity Equation. When logarithmic approximation is valid? [4+2]
4. Derive Horner's Pressure Build up formula. Name the Parameters We get from this test. Write the assumptions made. [3+2+1]

Part C

Answer **both** the Questions. **Each** question carries **seven** marks.

(2Qx7M=14)

5.

1.9 (a) Suppose a well is 250 ft due west of a north-south trending fault. From pressure transient tests, the skin factor,  $s$ , of this well has been found to be 5.0. Suppose further that the well has been flowing for 8 days at 350 B/D; reservoir and well properties

$B=1.13$ ,  $p_i=3000$  psia,  $\mu=0.5$  cp,  $k=25$  md,  $h=50$  ft,  $C_t=0.00002$ ,  $\Phi=0.16$ ,

$r_w=0.333$  ft,

Where parameters have usual meaning.

[07]

6. From the flow after flow data given below, Calculate AOFP  
Given Average stable flowing pressure  $\bar{p}=408.2$  psia

[07]

TABLE 5.1 – STABILIZED FLOW TEST DATA

Test	$p_{wf}$ (psia)	$q_o$ (MMscf/D)
1	403.1	4.288
2	394.0	9.265
3	378.5	15.552
4	362.6	20.177

well flows until the pressure stabilizes again at the new rate. The process is repeated for a total of three or four rates.



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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING**

2<sup>nd</sup> Final

**END TERM FINAL EXAMINATION**

**Odd Semester:** 2018-19

**Date:** 28 December 2018

**Course Code:** PET 211

**Time:** 2 Hours

**Course Name:** Well Completion and Testing

**Max Marks:** 40

**Programme & Sem:** PET & V 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 **both** the Questions.

(2Q=14)

1. Write two merits and one Demerit of the following Pumps, i.e SRP Pump, ESP Pump, Hydraulic Pump and Progressive Cavity pump. [6]
2. What are the Assumptions (with equations) incorporated in derivation of Diffusivity Equation. Write the Diffusivity equation in Radial form. [7+1]

**Part B**

Answer **both** the Questions. **Each** question carries **six** marks.

(2Qx06M=12)

3. Write the assumptions to derive a workable Solution of the Diffusivity Equation. When logarithmic approximation is valid? [4+2]
4. Derive Horner's Pressure Build up formula. Name the Parameters. We get from this test. Write the assumptions made. [3+2+1]

### Part C

Answer **both** the Questions. **Each** question carries **seven** marks.

(2Qx7M=14)

5. Suppose a well is 250 ft due west of a north-south trending fault. From pressure transient tests, the skin factor,  $s$ , of this well has been found to be 5.0. Suppose further that the well has been flowing for 8 days at 350B/D; reservoir and well properties

$B = 1.13$ ,  $P_i = 3000$ psia,  $\mu = 0.5$  cp,  $k = 25$  md.  $H = 50$  ft,  $C_t = 0.00002$ ,  $\Phi = 0.16$ ,

$r_w = 0.333$ ft, where parameters have usual meaning. Calculate distance of the fault(L):

[07]

6. From the flow after flow data given below, Calculate AOFP. Given Average stable flowing pressure  $\bar{p} = 408.2$  psia

[07]

**TABLE . STABILIZED FLOW  
TEST DATA**

<u>Test</u>	<u><math>p_{wf}</math> (psia)</u>	<u><math>q_o</math> (MMscf/D)</u>
1	403.1	4.288
2	394.0	9.265
3	378.5	15.552
4	362.6	20.177

Well flows until the pressure stabilizes again at the new rate. The process is repeated for a total of three or four rates.



Roll No. 

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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING**

**END TERM FINAL EXAMINATION**

*3rd final*

**Odd Semester:** 2018-19

**Course Code:** PET 211

**Course Name:** Well Completion and Testing

**Programme & Sem:** PET & V Sem

**Date:** 28 December 2018

**Time:** 2 Hours

**Max Marks:** 40

**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 **both** the Questions.

(2Q=14)

1. Write two merits and one Demerit of the following Pumps, i.e SRP Pump, ESP Pump, Hydraulic Pump and Progressive Cavity pump. [6]
2. What are the Assumptions (with equations) incorporated in derivation of Diffusivity Equation. Write the Diffusivity equation in Radial form. [7+1]

**Part B**

Answer **both** the Questions. **Each** question carries **six** marks.

(2Qx06M=12)

3. Write the assumptions to derive a workable Solution of the Diffusivity Equation. When logarithmic approximation is valid? [4+2]
4. Derive Horner's Pressure Build up formula. Name the Parameters. We get from this test. Write the assumptions made. [3+2+1]

### Part C

Answer **both** the Questions. **Each** question carries **seven** marks.

(2Qx7M=14)

5. Suppose a well is 250 ft due west of a north-south trending fault. From pressure transient tests, the skin factor,  $s$ , of this well has been found to be 5.0. Suppose further that the well has been flowing for 8 days at 350B/D; reservoir and well properties

$B = 1.13$ ,  $P_i = 3000$ psia,  $\mu = 0.5$  cp,  $k = 25$  md.  $H = 50$  ft,  $C_t = 0.00002$ ,  $\Phi = 0.16$ ,

$r_w = 0.333$ ft, where parameters have usual meaning. Calculate the pressure

[07]

6. From the flow after flow data given below, Calculate AOFP. Given Average stable flowing pressure  $\bar{p} = 408.2$  psia

[07]

TABLE STABILIZED FLOW

TEST DATA

Test	$p_{wf}$ (psia)	$q_o$ (MMscf/D)
1	403.1	4.288
2	394.0	9.265
3	378.5	15.552
4	362.6	20.177

Well flows until the pressure stabilizes again at the new rate. The process is repeated for a total of three or four rates.