



ID NO.	
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PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Weightage: 40 %

Max Marks: 40

Max Time: 2 hrs.

14 May 2018, Monday

ENDTERM FINAL EXAMINATION MAY 2018

Even Semester 2017-18

Course: **PET 214 Surface Production
Operations**

VI Sem. Petroleum

Instructions:

- (i) Read the question properly and answer accordingly.
 - (ii) Scientific and Non-programmable calculators are permitted
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Part A

(2 Q x 4 M = 8 Marks)

1. Write a short note on globe valves and draw a rough sketch of it.
2. Name and define the usual schemes implemented through the vapor recovery unit.

Part B

(2 Q x 6 M = 12 Marks)

3. I. Write a short note on spray nozzles and draw a diagram of it.
II. Briefly explain static mixers.
4. Write a summary on refinery storage tanks distinguishing standard storage tanks and 3 different type conservation storage tanks based on evaporation losses, operating conditions, sub-classification & application characteristics.

Part C

(2 Q x 10 M = 20 Marks)

5. Explain the following important constituents of produced water
 - I. Dissolved solids
 - II. Scale removal
 - III. Sand and other suspended solids
 - IV. Dissolved gases

6.
 - I. Write eight points discussing when hydro-cyclones can be applied. [4 M]
 - II. Write four points when hydro-cyclones are not applicable. [2 M]
 - III. Name the parameters by which the performance of hydro-cyclones is affected and write how it is affected also. [4 M]



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Weightage: 20%

Max Marks: 20

Max Time: 1 hr.

2 April Monday 2018

TEST – 2

SET B

Even Semester 2017-18 Course: **PET 214 Surface Production Operations** VI Sem. Petroleum

Instruction:

- (i) Read the question properly and answer accordingly.
- (ii) Question paper consists of 3 parts.

Part A

(2 Q x 2 M = 4 Marks)

1. Write any six factors on which the stability of an emulsion is dependent.
2. Illustrate vertical FWKO.

Part B

(1 Q x 6 M = 6 Marks)

3. Determine the size of a two phase horizontal separator using the data given below

Gas Flow rate	=	12 MMscfd at 0.6 specific gravity
Oil Flow rate	=	1,800 BOPD at 40°API
Operating Pressure	=	1,100 psia
Operating Temperature	=	60°F
Droplet size removal	=	140 microns
Retention time	=	3 Min
Settling Velocity	=	0.548 ft/s
Drag coefficient	=	0.851
Reynolds Number	=	108
Gas compressibility factor	=	0.84

Part C

(1 Q x 10 M = 10 Marks)

4. Elaborately explain vertical heater-treaters.



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Weightage: 20 %

Max Marks: 20

Max Time: 1 hr.

23 Feb Friday 2018

TEST – 1

Even Semester 2017-18

Course: **PET 214 Surface Production Operations**

VI Sem. Petroleum

Instruction:

- (i) *Read the question properly and answer accordingly.*
 - (ii) *Question paper consists of 3 parts.*
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Part A

(2 Q x 2 M = 4 Marks)

1. What are the auxiliary systems which support functioning of a production facility?
2. Illustrate any 8 common symbols used in process flow sheet.

Part B

(2 Q x 3 M = 6 Marks)

3. Compare Vertical, Horizontal, Spherical Gas-Oil separators based on their usage, capacity, handling foreign material, separation efficiency, cost per unit capacity and installation.
4. What are the factors to be determined before separator design?

Part C

(2 Q x 5 M = 10 Marks)

5. Explain typical glycol contact tower with a neat sketch.
6. Briefly explain Horizontal two phase separator with a figure.