

20PEB322					Surface Production Operations					
Teaching Scheme					Examination Scheme					
L	T	P	C	Hrs/Week	Theory			Practical		Total Marks
					MS	ES	IA	LW	LE/Viva	
2	0	0	2	2	25	50	25	--	--	100

COURSE OBJECTIVES

- To provide the understanding of production system and operations
- Explain the classification and working principle of various types of equipment (e.g. separators, storage facilities etc.) used in production operations and transportation.
- To provide an overview of the difference between onshore and offshore productions and processing system

UNIT 1 Separation and Treatment of produced fluid**7 Hrs.**

Classification of separators, Components of separator, Types of separator, Liquid level control and relative advantages / disadvantages of different types of separators, Dehydration & Desalting of Oil, Demulsification, Effluent Treatment, and Design of Separator.

UNIT 3 Storage and Transportation of Oil and Gas**6 Hrs.**

Storage tank for Oil, storage of LPG, Underground storage, Measurement-metering of Oil and Gas

UNIT 2 Surface facilities for Production System**7 Hrs.**

Group Gathering Station, Central Tank farm, Feeder and Trunk pipeline system,

UNIT 4 Flow assurance and Mitigation**6 Hrs.**

Scale & Paraffin Deposition and their Mitigation, Flow improver (Pour point depression and Drag reducer, heat treatment), pigging in pipe lines.

Max. 30 Hrs.**COURSE OUTCOMES**

On completion of the course, student will be able to

- CO1: Demonstrate the understanding of different types phase separator and application of these separators for efficient separation of gas, oil and connate water.
- CO2: Apply the fundamental principles of operation of demulsification, dehydration and desalting of oil.
- CO3: Understand wide range of produced fluid volume measurement and metering devices for oil and gas.
- CO4: Specify the material of construction of storage tanks for oil and equipment used to storage of LPG on surface and subsurface.
- CO5: Analyse the various transportation systems for oil and gases to understand difficulties of transportation to make use of flow improvers and other techniques to avoid pigging in the pipes.
- CO6: Design of Separators, Storage tanks and Pipelines and to understand the effect of design parameters.

TEXT/REFERENCE BOOKS

- Arnold Ken and Stewart Maurice, Surface Production Operations Vol-I and II.
- Chillangarian G V, Surface Operations in Petroleum Production.
- Huges J R and Swindles, Storage and Handling of Petroleum Liquids.
- Alex Marks, Petroleum Storage Principles.
- Handbook of Offshore Engineering, vol.2, S K Chakrabarti.

END SEMESTER EXAMINATION QUESTION PAPER PATTERN**Max. Marks: 100**

Part A/Question: <Details>

Part B/Question: <Details>

Exam Duration: 3 Hrs

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