

# CBCS SCHEME

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18PC61

## Sixth Semester B.E. Degree Examination, July/August 2022 Natural Gas Processing

Time: 3 hrs.

Max. Marks: 100

**Note:** Answer any FIVE full questions, choosing ONE full question from each module.

### Module-1

- 1 a. What is natural Gas? Give its importance as a fuel. (06 Marks)
- b. Write a note on branches of petroleum industry. (06 Marks)
- c. Explain about sources of information of natural gas engineering and its applications. (08 Marks)

OR

- 2 a. Discuss in detail about origin of petroleum and sedimentation process. (10 Marks)
- b. Write a detailed note on :
  - i) Petroleum reservoirs
  - ii) Earth Temperature and Pressure. (10 Marks)

### Module-2

- 3 a. Explain about phase behavior of natural gas. (07 Marks)
- b. Write a note on qualitative hydrocarbon phase behavior. (07 Marks)
- c. Describe about single component and multi-component systems. (06 Marks)

OR

- 4 a. Explain about VLE diagrams of Natural Gas. (10 Marks)
- b. Write a note on equations and State-Real and Ideal Gases. (10 Marks)

### Module-3

- 5 a. With an application of gas compressor, explain about types of compressors. (10 Marks)
- b. Write a note on centrifugal compressors with a neat diagram. (10 Marks)

OR

- 6 a. Define compressible flow. Explain about compressible flow in pipes. (08 Marks)
- b. Discuss about fundamental equations of flow, continuity, momentum and energy equation. (12 Marks)

### Module-4

- 7 a. Define Gas-liquid separation. Explain about separation principles of different methods. (10 Marks)
- b. Write a note on types of separators and separation equipment used for gas-liquid separation. (10 Marks)

OR

- 8 a. Discuss about the different factors affecting separation of gas-liquid. (08 Marks)
- b. What is gas dehydration? Explain about adsorption hydration and types of adsorbents. (12 Marks)

**Module-5**

- 9 a. What is gas desulfurization? Discuss about need and importance of desulfurization. (07 Marks)  
b. Explain about sour gas and sweet gas. (06 Marks)  
c. Write a note on different desulfurization processes. (07 Marks)

**OR**

- 10 a. Discuss about different types of gas flowmeters. (08 Marks)  
b. What is orifice system? Discuss about factors affecting orifice meter accuracy and common measurement problems encountered in gas metering. (12 Marks)

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