Code No: **RT42272C** **R13** **Set No. 1**

IV B.Tech II Semester Regular/Supplementary Examinations, April - 2018

LNG: PROCESSES, TRANSPORTATION & STORAGE

(Petroleum Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

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PART–A *(22 Marks)*

1. a) What are the key elements of traditional LNG supply chain? [3]
   b) Explain the criteria to evaluate offshore natural gas liquefaction cycles. [4]
   c) Draw a schematic diagram for a typical vessel type slug catcher. [4]
   d) Differentiate between onshore and offshore LNG terminals. [4]
   e) How are the LNG cargo tank volumes measured? [3]
   f) What are the hazards associated with LNG plants? [4]

PART–B *(3x16 = 48 Marks)*

2. a) Discuss the global production of LNG and its trade. [8]
   b) Describe the LNG infrastructure in India giving examples. [8]

3. a) Describe the APCI propane precooled mixed refrigerant process using a flow diagram. [8]
   b) Bring out a qualitative comparison of the efficiency and complexity of gas liquefaction technologies for FLNG. [8]

4. a) Distinguish between chemical solvent processes and physical solvent processes for the removal of acid gases from natural gas. [8]
   b) Describe an NGL recovery process. [8]

5. a) Detail the LNG quality and gas interchangeability. [8]
   b) Depict a typical process scheme of an LNG receiving terminal mentioning the function of each equipment. [8]

6. a) Classify and briefly describe LNG cargo containment systems. [8]
   b) Describe the LNG loading facilities. [8]

7. a) Discuss the emission sources in an LNG plant. [8]
   b) Describe an intermediate fluid vaporizer process, employed in an LNG regasification unit, using a flow diagram. [8]