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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Term Examinations –August, 2020

Program/course: B.Tech: APE (Gas) | **Semester : VIII**
Subject: Air Fractionation & Gas Purification | **Max. Marks : 100**
Code : PTEG 372 | **Duration : 3 Hrs**
No. of page/s: 2

Note: Assume Suitable and necessary data if required and Justify

Section-A (Marks: 30)

Answer ***all*** the questions

1. List out Industrial applications of liquid oxygen [5] [CO1]

2. What are the sources of carbon dioxide [5] [CO4]

3. How the field of cryogenics is useful in Gas Industry [5] [CO3]

4. Relative volatility is Unit less quantity : (True/False) [5] [CO2]

5. Write about contacting devices of air fractionation systems [5] [CO1]

6. Membranes are most economical for recovery of hydrogen from refinery streams. (True/False) [5][CO5]

Section-B (Marks: 50)

Answer ***all*** the questions and ***any one*** in question ***no: 11***

7. Discuss various commercial applications of Gas Separation and Purification by Adsorption Technology [10] [CO5]

8. Explain in detail variable load plants for oxygen [10] [CO3]

9. What are the drawbacks of Linde's liquefaction system?. [10] [CO1]

10. Explain the carbon dioxide recovery process from refinery off gases [10] [CO2]

11. Describe Helium recovery process from Natural Gas [10] [CO4]

OR

Describe Methane wash recovery for CO production

Section-C (Marks: 20)

12. Explain Nitrogen recovery by membrane separation and compare it with cryogenic method of recovery.

List out the industrial applications of all Rare Gases [20][CO5]

END