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## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B.TECH APE UP

Subject (Course): INTRODUCTION TO PETROLEUM OPERATIONS.

Course Code : PTEG201

No. of page/s:02

Semester – III

Max. Marks : 100

Duration : 3 Hrs

**SECTION-A: Answer All the Questions.**

**5\*4=20M**

1.
  - a) Define Hydrogen Index and explain its role in hydrocarbon exploration? (2M)
  - b) List the functions of Surface Casing? (2M)
2.
  - a) Discuss the main applications of Formation Evaluation? (2M)
  - b) Discuss the primary objectives of well testing? (2M)
3. Define Normal, Abnormal and Subnormal Pressures with their pressure gradient variation values? (4M)
4. Discuss about the principle process of different artificial lift methods? (4M)
5. Explain the terms (4M)
  - i) Desalter.
  - ii) Distillation Unit.
  - iii) Distillation Hydro treater.
  - iv) Fluid Catalytic Cracking.

**SECTION-B: Answer All the Questions.**

**5\*8=40M**

1.
  - a) Classify and Explain different types of rocks based on rock characteristics? (4M)
  - b) Write short notes on “Liners”? (4M)
2. Differentiate between Cased and Open hole Logging? Explain any one porosity Log? (8M)
3.
  - a) Discuss any five parameters on which the design of a particular completion depends? (4M)
  - b) Explain about Surface Flow Control Equipment’s? (4M)

- 4.
- a) Explain the working principle of SRP with a neat sketch? (4M)
  - b) List out the advantages of Progressive Cavity Pump? (4M)
- 5.
- a) Differentiate between Early and Positive Warning Signs? (4M)
  - b) Discuss different types of Early Warning Signs? (4M)

**SECTION-C:**

**2\*20=40M**

**Instructions:** i) Question 1 is Compulsory.

ii) Answer any **one** from 2 and 3 questions.

- 1.
- a) Define Source rock and explain different types of Source Rocks? (5M)
  - b) Explain the different process involved in cementing a wellbore? (5M)
  - c) Expand SIDPP, SICP, WOB and RPM? (5M)
  - d) Explain various phenomena's that may encounter before the petroleum gets trapped in reservoir? (5M)
- 2.
- a) Explain about different "Tubing" Components? (10M)
  - b) Explain the well control procedure involved in "**Driller's Method**"? (10M)
- 3.
- a) Discuss about "Well Control Equipment"? (8M)
  - b) Explain the importance of MAASP and Slow Circulation Rate in Well Control? (8M)
  - c) Explain the well Shut-in Procedures during Drilling and Tripping? (4M)