PRESIDENCY UNIVERSITY, BENGALURU
SCHOOL OF ENGINEERING

Weightage: 20%   Max Marks: 20   Max Time: 1 hr.   Tuesday 25th September 2018

TEST – 1

Odd Semester 2018-19   Course: **PET 219 Hydrocarbon Exploration**   III Sem.Petroleum

Instruction:
- (i)   Read the question properly and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and Non-programmable calculators are permitted.

Part A

(5 Q x 1 M = 5 Marks)

1. Which year marked the peak of the Pensylvannia Oil Rush? Which organization was formed to control the economic volatility of the industry during this phase?

2. Name the two forms of contracts used in NELP and HELP respectively.

3. When and where was the first commercial oil well drilled in India? What is it's name?

4. Mangalore refinery operates under which PSU? Which Indian PSU started as the subsidiary of a Scottish Exploration & Production company?

5. Who is referred to as the father of modern drilling? The first instance of application of geophysics in hydrocarbon exploration was the use of a device invented by a German scientist. What is it's name?

Part B

(5 Q x 2 M = 10 Marks)

6. What are gas hydrates? Why is shale gas exploration a difficult venture in India, even though we have access to major shale gas reserves?

7. How is the presence of brine in petroleum abundant zones a supporting tenet of the organic theory of origin?

8. What do you understand by thermal maturation processes? Briefly explain it's classification.

9. What is phytoplankton? What are three ways in which oil is postulated to have it's origin in phytoplankton?

10. What is CBM? Which Indian PSU is responsible for Exploration and Production activities outside the country?

Part C

(1 Q x 5 M = 5 Marks)

11. What is a sedimentary basin? Explain the different classifications of basins. What are the 7 petroliferous basins of India and where are they located?

OR

What is HELP? Draw a comparison between HELP and NELP.

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TEST 2

Odd Semester: 2018-19   **Date**: 28 November 2018

Course Code: PET 219   **Time**: 1 Hour

Course Name: Hydrocarbon Exploration   **Max Marks**: 20

Branch & Sem: PET & Sem   **Weightage**: 20%

Instructions:
- (i) All questions are compulsory
- (ii) Question paper consists of three parts
- (iii) Scientific and non-programmable calculators are allowed

Part A

Answer **all** the Questions. **Each** question carries **one** mark.   (1x4=4)

1. What is the range of variation of the earth's magnetic field?

2. What is the difference between resource and reserve?

3. What is the inverse problem in the interpretation of gravity survey measurements?

4. What are the four steps involved in indirect interpretation of gravity measurements?

Part B

Answer **all** the Questions. **Each** question carries **two** marks.   (2x5=10)

5. Briefly describe the processes of fluorescence and cut for determination of presence of hydrocarbon.

6. Why are gravity and magnetic survey methods called potential methods of survey? How are they different from each other?

7. What is the difference between active and dead occurrences of surface indications of petroleum? What are the factors on which intensity of mud volcanoes depend?

8. What are diurnal corrections? How are they applied in gravity survey?

9. Give reasons why contingent resources aren't considered mature enough for commercial exploitation.

Part C

Answer the Question. Question carries **six** marks.   (6x1=6)

6. With neat diagram, derive the expression for gravity measurements using a stable type gravimeter.

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END TERM FINAL EXAMINATION

Odd Semester: 2018-19   **Date**: 28 December 2018

Course Code: PET 219   **Time**: 2 Hours

Course Name: Hydrocarbon Exploration   **Max Marks**: 40

Programme & Sem: PET & III Sem   **Weightage**: 40%

Instructions:
(i)   All questions are compulsory

Part A

Answer **all** the Questions. **Each** question carries **two** marks.   (4Qx2M=08)

1. What is a time slice or a seiscrop?
2. What is diffraction in seismic surveys?
3. What is the difference in spread arrangement between 2D and 3D seismic survey?
4. How are diurnal corrections applicable in aeromagnetic survey?

Part B

Answer **all** the Questions. **Each** question carries **four** marks.   (5Qx4M=20)

5. Write short notes on:
    i.   Plate tectonics
    ii.   Sedimentology and biostratigraphy
    iii. Seismic sources on land
    iv.   Proton Magnetometer
    v.   4D seismic survey

Part C

Answer the Question. Question carries **twelve** marks.   (1Qx12M=12)

6. What is Vertical Seismic Profiling? What are it's advantages over conventional surface seismic survey? What are it's different acquisition methods?