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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET B**

**SCHOOL OF ENGINEERING  
END TERM EXAMINATION - JAN 2024**

**Semester :** Semester I - 2023

**Course Code :** PET1002

**Course Name :** Introduction to Oil and Gas Industry

**Program :** B.Tech.

**Date :** 18-JAN-2024

**Time :** 9:30AM - 12:30 PM

**Max Marks :** 100

**Weightage :** 50%

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**Instructions:**

- (i) Read all questions carefully and answer accordingly.*
  - (ii) Question paper consists of 3 parts.*
  - (iii) Scientific and non-programmable calculator are permitted.*
  - (iv) Do not write any information on the question paper other than Roll Number.*
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**PART A**

**ANSWER ALL THE QUESTIONS**

**5 X 2M = 10M**

1. Name the three stages involved in the generation of fossil fuels.  
(CO3,CO2) [Knowledge]
2. List out the few environmental impacts of fossil fuels.  
(CO4,CO3) [Knowledge]
3. Briefly describe Nuclear energy and hydroelectric energy.  
(CO1,CO3) [Knowledge]
4. Classify the energy based on "Traditional usage" and "Long Term Availability"  
(CO4,CO2) [Knowledge]
5. Define "Energy" and provide two examples of "Non-Renewable" energy sources  
(CO4,CO1) [Knowledge]

## PART B

### ANSWER ALL THE QUESTIONS

5 X 10M = 50M

6. The life cycle of oil involves several stages, from its formation millions of years ago to its extraction, refining, distribution, and eventual consumption. Draw a neat diagram clearly highlighting various key process and steps representing various stages of a life cycle of the well. Discuss in detail every step involved in the life cycle of an oil well.
- (CO2,CO3) [Comprehension]
7. Discuss the process of “bull heading” during the well killing in detail.
- (CO3,CO4) [Comprehension]
8. a) Categorize the petroleum industry based on the various processes involved all the way from exploration to the consumption.  
b) Indicate the major stages involved in the “life cycle of a petroleum well” with keys process involved in it.
- (CO4,CO2) [Comprehension]
9. The last stage of the formation of the natural gas and crude oil is termed as Metagenesis and metamorphism. Discuss the key transformation involved in this process.
- (CO4,CO1) [Comprehension]
10. Discuss the process of “Diagenesis” in the formation of petroleum oil and natural gas.
- (CO1,CO4) [Comprehension]

## PART C

### ANSWER ALL THE QUESTIONS

2 X 20M = 40M

11. Drilling rigs are complex systems comprising various components crucial for successful drilling operations. Each component serves a specific purpose and contributes to the efficiency, safety, and functionality of the rig. List various key drilling rig components and their importance in carrying out an efficient and effective drilling of an oil well.
- (CO4,CO1) [Application]
12. “The Deepwater Horizon was an offshore drilling rig operated by Transocean and contracted by BP for exploratory drilling in the Macondo Prospect, located in the Gulf of Mexico. On April 20, 2010, a catastrophic blowout occurred on the Deepwater Horizon rig, leading to a massive explosion and subsequent fire”. Discuss in detail in terms of the reasons for the incident occurred in the Deepwater horizon.
- (CO2,CO3) [Application]