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**PRESIDENCY UNIVERSITY  
BENGALURU**

**SET A**

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

**Semester :** Semester VII - 2020

**Course Code :** PET2011

**Course Name :** Oil and Gas Downstream Operations

**Program :** B.Tech.

**Date :** 08-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. State two building blocks for Indian Petroleum Industries. (CO1) [Knowledge]
2. Mention the use of Gasoline in human civilization. (CO2) [Knowledge]
3. Describe the petrochemical complexes combination. (CO3) [Knowledge]
4. Identify three commercially important oxidation product. (CO4) [Knowledge]
5. "Ethylene is sometimes known as the king of petrochemicals"- Describe the following statement. (CO4) [Knowledge]

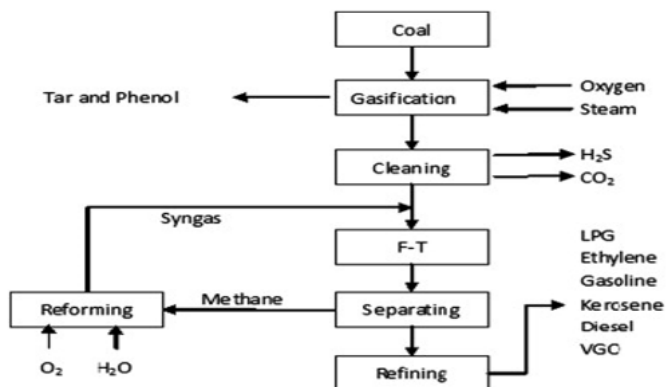
**PART B**

**ANSWER ALL THE QUESTIONS**

**5 X 10M = 50M**

6. "The petrochemical industry involves the conversion of hydrocarbons derived from crude oil and natural gas into a wide range of chemical products". Based on the above statement explain the process description of petrochemical industries. (CO3) [Comprehension]

7.



With the help of the following flow diagram, discuss the production methodology of white kerosene (jet aviation fuel).

(CO2) [Comprehension]

8. "Steam Methane Reforming (SMR) is a chemical process used in the gas manufacturing industry to produce hydrogen on a large scale." Based on the following statement explain hydrogen production by using the SMR process.

(CO1) [Comprehension]

9. "Ethylene can easily be produced from any hydrocarbon source through steam cracking and in high yields." Based on the statement discuss the production methodology of ethylene in petrochemical industries.

(CO3) [Comprehension]

10. "Ammonia is the main raw material for the production of urea". Explain the following statement.

(CO4) [Comprehension]

### PART C

ANSWER ALL THE QUESTIONS

2 X 20M = 40M

11. The distillate obtained from crude oil for secondary processing revealed an undesirable occurrence: when temperatures exceeded 450°C, coke formation occurred, which is undesired in the process. Explain the type of mild thermal cracking process which can be operated on the crude feed for optimum results.

(CO3) [Application]

12. Imagine a people brought a Swift Desire to carry passengers. As a petroleum engineer explain all the tests to be conducted on the fuel of his car. Assume that car is running by gasoline.

(CO4) [Application]