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| Name: |  UPES UNIVERSITY WITH A PURPOSE |
| Enrolment No: | |

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2020

Course: Data Management and Analytics in E&P

Semester: V

Program: B.Tech CSE OGI

Time : 03 hrs.

Course Code: CSOG 3004

Max. Marks: 100

Instructions:

SECTION A

| S. No. | | Marks | CO |
|--------|---|-------|-----|
| Q 1 | With the emergence of Big data analytics the landscape in Upstream Data Analysis has changed drastically. Describe in detail the current landscape of big data analytics in OGI | 5 | CO2 |
| Q 2 | Elucidate the SEMMA Process deployed in the Exploration site to ensure quality data acquisition. | 5 | CO2 |
| Q 3 | Paraphrase different data sources standards deployed in Oil and Gas informatics | 5 | CO4 |
| Q 4 | Restate the concept of Rack Awareness and Replication factors in HDFS using appropriate example | 5 | CO4 |
| Q 5 | List different type of electrode configuration used in electric methods. | 5 | CO1 |
| Q 6 | Define Seismic Wave. Restate the importance of earth wave in the process of seismic surveys. | 5 | CO1 |

SECTION B

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|------|---|----|-----|
| Q 7 | Illustrate in details the four tier data management architecture used in E&P analytics. | 10 | CO3 |
| Q 8 | Classify the various geophysical methods deployed in exploration and production data acquisition. | 10 | CO1 |
| Q 9 | Categorize different gravity anomalies encountered during gravity surveys. Identify different means to rectify these anomalies. | 10 | CO1 |
| Q 10 | Design the complete OA analytical framework to start up new exploration site. | 10 | CO3 |
| Q 11 | Elucidate the various stages of Data integration lifecycle in E&P. | 10 | CO2 |

SECTION-C

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|-----------|--|-------|-----|
| Q 12 | 1. Design a Map reduce architecture for identifying the sentiments of the online bloggers. Support these architecture with java code. 2. Explain the following concepts: a) Sqoop b) H base | 10+10 | CO4 |
| Or | | | |

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| | <ol style="list-style-type: none">1. Design a Map reduce architecture for identifying the provoking keywords in the tweet share by a user. Support these architecture with java code.2. Explain the following concepts:<ol style="list-style-type: none">a) Sparkb) Zookeeper | | |
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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2019

Course: Downstream Petroleum: Refinery and Petrochemical

Semester: V

Program: B.Tech CSE OGI

Time : 03 hrs.

Course Code: CSOG 3001

Max. Marks: 100

Instructions:

SECTION A

| S. No. | Question | Marks | CO |
|--------|--|-------|-----|
| Q 1 | State the difference between gasoline and diesel. List ideal characteristic of any diesel produce from refinery. | 4 | CO1 |
| Q 2 | Illustrate various mean of transportation of oil. Identify the role of pipeline in hydrocarbon industry | 4 | CO1 |
| Q 3 | Define feed. FCC take place later in the refinery hence output of different process enter as the input of the feed. List various feed of FCC | 4 | CO3 |
| Q 4 | Define API gravity of hydrocarbon. Calculate the API gravity of Hydrocarbon | 4 | CO3 |
| Q 5 | Catalyst plays a vital role in refinery. List different type of catalyst used in refinery. | 4 | CO3 |

SECTION B

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|-----|--|----|-----|
| Q 6 | Illustrate different types of migration path followed by crude oil and state the role of capillaries in migration | 10 | CO1 |
| Q 7 | Explain different physical characteristic of crude oil. Identify the formula to calculate viscosity of crude oil. Breakdown different stages undertaken in Vis-breaking process | 10 | CO3 |
| Q 8 | Outline different product formed during solvent de-waxing unit. Explain the unit with proper diagram and explanation | 10 | CO5 |
| Q 9 | <p>Exploration and production process is able to extract mixture of hydrocarbon from the crust of the earth surface. Crude oil is a mixture of hydrocarbons, minerals and salts. Refinery is responsible for producing customized chain of carbon.</p> <p>Elucidate De- salting Process undertaken in the refinery. Explain the drawbacks of salts in crude oil.</p> <p>Or</p> <p>Elucidate Flexi coking Process undertaken in the refinery to extract 7-Carbon chain</p> | 10 | CO4 |

SECTION-C

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|------|--|----|-----|
| Q 10 | <p>Describe in detail the process and importance of fractional distillation in refinery. Illustrate the ADU unit in refinery with proper diagram. Identify the temperature ranges for each product form and the feeder process to which these products.</p> <p>Or</p> | 20 | CO2 |
|------|--|----|-----|

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| | Describe the different hydro treating process undertake in refinery. Infer the difference and similarities in hydro treating and blending. | | |
| Q 11 | <p>a) Petrochemical industry is one of the most rapidly developing industry in India. Paraphrase the development of petrochemical industry in India.</p> <p>b) Depending upon number of carbon in the chain different hydrocarbon products are generated. Define Olefinic hydrocarbon and explain the process responsible for the formation of Olefinic hydrocarbon</p> | 10+10 | CO4,C O5 |