# PRESIDENCY UNIVERSITY
## BENGALURU

## SCHOOL OF ENGINEERING
### END TERM EXAMINATION - August 2024

**Semester:** IV<sup>th</sup> - DCET  
**Course Code:** PET2030  
**Course Name:** Occupational Health and Safety  
**Program:** B. Tech.

**Date:** 08.08.2024  
**Time:** 9.30am -12.30pm  
**Max Marks:** 100  
**Weightage:** 50%

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**Instructions:**
*(i) Read all questions carefully and answer accordingly.*
*(ii) The question paper consists of 3 parts.*
*(iii) Scientific and non-programmable calculators are permitted.*
*(iv) Do not write any information on the question paper besides Roll Number.*
*(v) Use Graph Paper wherever needed. Write the Question No. on the graph paper with a pen.*

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| PART A | | |
|---|---|---|
| **ANSWER ANY 5 QUESTIONS** | **5Q X 2M=10M** | |
| 1 Name the common test species that are used in Petroleum industries. | (CO3) | [Knowledge] |
| 2 Define Dose. | (CO3) | [Knowledge] |
| 3 State any two impact of crude oil spill on human health. | (CO3) | [Knowledge] |
| 4 Define Bioremediation. | (CO4) | [Knowledge] |
| 5 Explain Soil Flushing. | (CO4) | [Knowledge] |
| 6 Define Lethal Dose, toxic dose and effective dose. | (CO2) | [Knowledge] |
| 7 Define Safety. | (CO1) | [Knowledge] |

| PART B | | | |
|---|---|---|---|
| | **ANSWER ANY 5 QUESTIONS** | | **5Q X 10M=50M** |
| 8 | Describe the procedure of acute toxicity testing. | (CO3) | Comprehension |
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| 9 | Explain in detail about various safety measures and practices taken in drill sites. | (CO 3) | Comprehension |
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| 10 | Explain Risk . Give a detailed overview of risk assement procedure. | (CO2) | Comprehension |
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| 11 | Explain the various procedure of removal of dissolved hydrocarbons from the produced water. | (CO4) | Comprehension |
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| 12 | Describe your understanding of Toxic Release Model with its assumptions and factors affecting the dispersion of toxic material. | (CO2) | Comprehension |
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| 13 | State and explain the various Weathering process that occurs when the crude oil is spilled in the sea. Draw the process in a neat diagram. | (CO4) | Comprehension |
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| 14 | State and explain in detail the physical properties that affect the behavior and the persistence of an oil spill at sea. | (CO4) | Comprehension |
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| PART C | | | |
|---|---|---|---|
| | **ANSWER ANY 2 QUESTIONS** | | **2Q X 20M=40M** |
| 15 | Explain in detail about the various mechanical and chemical methods that are used in case of oil spill in the sea. | (CO4) | [Application] |
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| 16 | Calculate the different flammability limits such as Stoichiometric Concentration (Cst), Upper flammability limit (UFL), Lower flammability limit (LFL), Limiting Oxygen Concentration (LOC) of <br> (a) Methanol ($CH_3OH$) <br> (b) Ethanol ($C_2H_5OH$) <br> by Stoichiometric Balance method. | (CO2) | [Application] |
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| 17 | Calculate the pool fire flame height assuming no wind. Given that m''=1000 kg/m$^2$s, $d_f$ =20m , $d_{pool}$= 50m, density of air= 0.45 kg/m3. <br> Give insight with the help of result obtained. | (CO2) | [Application] |
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