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Total No. of Pages : 02

Total No. of Questions : 09

BTech.(Petroleum Refinery Engineering) (2013 Batch) (Sem.-8)

**ENVIRONMENTAL TECHNOLOGY
AND SAFETY IN PETROLEUM INDUSTRY**

Subject Code : BTPC-804

Paper ID : [74326]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Answer briefly :**

- a. What is HAZOP analysis?
- b. When and where deep water horizon happened?
- c. Name two occupational diseases associated with benzene fume inhalation.
- d. What is the COD limit for the disposal of oil effluent?
- e. Name any one method used in preventive measurement of fire and explosion.
- f. Name two emulsifiers used in oil spills.
- g. What do you mean by bacterial remediation?
- h. Name two bacteria used in bioremediation during oil spills.
- i. What are the types of solids contained in waste water?
- j. What does TLV-TWV abbreviations stand for?

SECTION-B

2. What are environmental aspects of oil field operations with respect to :
 - a. Seismic
 - b. Drilling
 - c. Offshore?
3. What are the different types of primary & secondary treatment available for wastewater treatment? Write in details about any two treatments.
4. What are effects of emulsification on the oil spills?
5. What are Safety audits? What are benefits of Safety audits?
6. What are the procedures for onshore/offshore well abandonment?

SECTION-C

7. Write short notes on :
 - a. Work Permit system.
 - b. Root cause analysis.
 - c. Job safety analysis.
8. Discuss any four important parameters used internationally to assess quality of produced wastewater.
9. Write notes on subsurface disposal of petroleum industry waste, Disposal of liquids, Disposal of solids.