

**B. Tech. Sem - VIII (Chemical Engg.) (2014 COURSE) (CBCS) :
SUMMER - 2019**

SUBJECT-ELECTIVE-IV HAZARDOUS WASTE MANAGEMENT

Day: Thursday
Date: 23/05/2019

S-2019-2867

Time: 02.30 PM TO 05.30 PM
Max. Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Assume suitable data, if necessary.

- Q.1** a) What are the rules for hazardous waste handling? (05)
 b) What are the rules for rejected plastic usage? (05)

OR

- Q.1** a) What are the rules for fly ash? (05)
 b) What are rules for biomedical waste handling? (05)

- Q.2** What is fate of hazardous chemicals? How it is determined? What is its significance? (10)

OR

- Q.2** What are the issues and health effects during transportation of chemicals? (10)
 What are the rules governing the same?

- Q.3** Which are the sources of radioactive wastes? How do you measure their radioactivity? Which are their Health hazards? (10)

OR

- Q.3** How waste is generated from nuclear power plants? What are its characteristics? Which are its disposal methods? (10)

- Q.4** What is soil-vapor extraction? How it is used for waste reduction? (10)

OR

- Q.4** What is ground water contamination? How it takes place? What are its effects and remedies? (10)

- Q.5** a) What is slurry phase bioreactor? What is its significance in bio composting? (05)

- b) What is in-situ remediation? Why it is important? (05)

OR

- Q.5** Which are oxidative and reductive methods for composting? Explain in details. (10)

- Q.6** What is land fill? Why proper design is necessary? How to incorporate covers and cover design for land fill? (10)

OR

- Q.6** Why leachate is important in hazardous waste disposal? What are the methods of leachate collection and removal? (10)