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Question Paper Code : 20541

B.E./P.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fifth/Seventh Semester

Civil Engineering

EN 6501 — MUNICIPAL SOLID WASTE MANAGEMENT

(Common to Environmental Engineering)

(Regulations 2013)

(Also Common to PTEN 6501 – Municipal Solid Waste Management for
B.E. (Part-Time) – Sixth Semester – Civil Engineering Regulations 2014)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the purpose of carrying out solid waste characterization.
2. What are the functional elements of solid waste management system?
3. Mention the various advantages of waste segregation.
4. Name the different onsite processing methods for solid waste.
5. Enlist the factors influencing waste collection system.
6. Distinguish between macro routing and micro routing.
7. What are the objectives of Offsite processing?
8. Define the terms : Incineration and Pyrolysis.
9. What is land farming?
10. Give the various methods to control leachate.

PART B — (5 × 13 = 65 marks)

11. (a) Describe the adverse health and environmental effects due to improper handling of solid waste.

Or

- (b) (i) Explain in detail the factors affecting generation of solid waste.
(ii) Write brief note on environmental legislations pertaining to MSW.
12. (a) Elucidate the factors that must be considered in onsite storage of solid waste.

Or

- (b) Discuss the strategies of source reduction, recycling and reuse of solid waste.
13. (a) (i) Briefly explain the methods of solid waste collection system.
(ii) Enumerate the guidelines for laying out collection routes.

Or

- (b) Elaborate the role, usefulness and types of transfer stations. State also infrastructure requirements of Transfer Stations.
14. (a) (i) Write a detail note on magnetic separation of solid waste with help of sketches.
(ii) Briefly discuss the techniques involved in resource recovery from solid waste.

Or

- (b) With the help of sketches, elaborate the types and working principle of composting methods.
15. (a) List and explain the important factor that must be considered in the site selection, design and operation of sanitary landfill.

Or

- (b) Write a detail note on management of leachate and landfill gas.

PART C — (1 × 15 = 15 marks)

16. (a) Explain in detail about the role of NGO's in MSW.

Or

- (b) Explain briefly about the various problems in collection of MSW. How do you solve?