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Question Paper Code: AEE551



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

B.Tech VI Semester End Examinations (Regular) - May, 2019

Regulation: IARE – R16

ENERGY FROM WASTE

Time: 3 Hours

(Common to CSE | IT | AE | ECE)

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

- (a) Explain various types of solid waste in detail. Describe characteristics of solid waste. [7M]
(b) Explain briefly the suitable techniques for separation of paper, glass and metals from municipal solid waste. [7M]
- (a) List out different types of biomedical waste? Discuss the treatment methods of bio medical waste. [7M]
(b) What is composting? Discuss various phases of composting and list out types of composting process. [7M]

UNIT – II

- (a) Define the term landfill. Describe how a landfill is designed. [7M]
(b) With the help of a neat sketch explain the essential components of a sanitary landfill and their functions. Also explain its advantages and disadvantages of sanitary landfill. [7M]
- (a) What is leachate? Mention the various methods of treatment of leachate and disposal. [7M]
(b) Explain the environmental problems involved in the open dumping of solid waste. [7M]

UNIT – III

- (a) Describe the various factors affecting biochemical conversion. Explain in-detail step by step procedure of bio-chemical conversion. [7M]
(b) Explain in-detail about the phases that can be distinguished in the overall conversion process of organic matter to biogas? [7M]
- (a) Give biogas plants in India. Briefly explain biomass energy conversion overview with block diagram. [7M]
(b) Briefly explain the process of backyard composting. How to check compost quality. [7M]

UNIT – IV

7. (a) Define the terms combustion, pyrolysis and gasification. Explain the various thermo-chemical conversion processes. [7M]
- (b) Define the term biogas. Differentiate between producer gas and syngas? [7M]
8. (a) What is bio-mass feedstock. Explain the process of biogas production. [7M]
- (b) Explain the techniques used to make biomass briquettes. Discuss the advantages of briquetting. [7M]

UNIT – V

9. (a) What is the need for stringent health safeguards? Discuss various environmental protection laws of India. [7M]
- (b) Discuss on the given statement as “Recycling e-waste: A thriving economy of the unorganized sector”. [7M]
10. (a) Discuss different sources of e-waste. Write about recycling of of e-waste. [7M]
- (b) What are the environmental concerns of e-waste. Discuss in-detail about health hazards and safety hazards related to e-waste. [7M]

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