[Total No. of Questions - 9] [Total No. of Pri. d Pages - 4]
(2126)

16186(D) - 0 DEC 2016

B. Tech 7th Semester Examination

Waste and Sewage Treatment (NS)

CE-414

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : (i) Must attempt one question, from each of the section i.e.: Section A-E, Section E is compulsory

(ii) All parts of a question should be answered at one place.

(iii) Answer should be brief and to-the-point and supplemented with neat sketches. Unnecessary long answer may result in loss of marks.

(iv) Any missing or wrong data may be assumed suitably giving proper justification.

(v) Figures on the right hand side margin indicate full marks.

SECTION - A

1. (a) Describe Solid Waste Management (SWM). Write briefly about SWM practices used in your locality. Suggest how SWM practices in your locality can be successful. (8)

   (b) Write down some of heuristic guidelines considering during route optimization of waste collection. (6)

   (c) What are different technical factors you will consider during site selection for municipal sanitary land fill design? (6)

2. (a) Describe hazardous waste management. Write your observation about hazardous waste management practices in your locality. (8)

   (b) Briefly discuss some of the common physical treatment processes that may be applied to hazardous waste. What are the basic purposes of these processes? (7)

   (c) What are precautions you will take during handling and storage of hazardous waste? (5)

SECTION - B

3. (a) What are biodegradable and non biodegradable wastes? (5)

   (b) What are the color codes and type of containers used for disposal of biomedical waste? (5)

   (c) What are the different hospital waste categories? (5)

   (d) How long can bio medical waste be stored? (5)

4. (a) What are the hazards associated with poor health care waste management? (5)

   (b) What are the rules and regulations governing the disposal of these wastes? (5)

   (c) What biomedical waste materials can be recycled? (5)

   (d) What are disinfection and sterilization? (5)

SECTION - C

5. (a) What constitutes an ecosystem? Give examples of five different types and sizes of ecosystems. (7)

   (b) Make a sketch that illustrates the two basic principles of ecology. (7)

   (c) Write an explanatory note on biosphere. (6)

6. (a) Name the functional or metabolic groups of organisms that are must for the long term survival of an ecosystem. Also discuss their role or function in a ecosystem. (8)

(b) Discuss the importance of energy in an ecosystem and its routes of uses. (5)

(c) Why is the concept of food web more real ecologically than the concept of a simple food chain? (7)

SECTION - D

7. (a) Distinguish between:

(i) Primary and secondary air pollutants.

(ii) Stationary and mobile sources of air pollutants. (6)

(b) Are air pollutants responsible for climate change? Give your opinion. (6)

(c) Describe three types of temperature inversions. How do they affect air quality? Which type of inversion causes fumigation? (8)

8. (a) What is loudness? Define the terms 'Phone' and 'sone' and discuss their relationship. (6)

(b) What is a decibel? Briefly describe why sound is measured in units of decibels instead of sound pressures in units of microbars. (7)

(c) What are the four basic ways in which noise can be controlled or reduced? Which is considered to be the best or most effective way? (7)

SECTION - E

9. Write short notes on:

(i) Briefly describe the Bangalore and Indore method of composting.

(ii) Define Incineration.

(iii) Write biomedical waste management issues.

(iv) Hazardous waste.

(v) Position of man on the food chain.

(vi) Food chain.

(vii) Ecological succession.

(viii) Global implication due to air pollution.

(ix) Decibel (dB) Scale.

(x) Bhopal Disaster. (2×10=20)