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Total Number of Pages : 02

M.Sc.I  
FCYE508

5<sup>th</sup> Semester Back Examination 2019-20

ENVIRONMENTAL SCIENCE

BRANCH : M.Sc.I(AP), M.Sc.I(MC)

Time : 3 Hours

Max Marks : 70

Q.CODE : HB475

Answer Question No.1 which is compulsory and any FIVE from the rest.  
The figures in the right hand margin indicate marks.

- Q1 Answer the following questions : (2 x 10)**
- a) Write four significance of a food chain.
  - b) Write two objectives of Air Act, 1981 and what is its jurisdiction?
  - c) What are the abiotic components of an ecosystem? Give examples
  - d) Compute the pH of a sample of  $0.6 \times 10^{-3}$  M  $\text{H}_2\text{SO}_4$  solution.
  - e) List the criteria air pollutants.
  - f) Differentiate between BOD and COD.
  - g) Differentiate between incineration and pyrolysis.
  - h) What are the objectives of environmental audit?
  - i) Name some green House gases present in the atmosphere?
  - j) List the preventive measures to be taken for occupational diseases.
- Q2 a) Explain the structural and functional units of ecosystem with suitable examples. Briefly discuss the functional attributes of an ecosystem. (5)**
- b) Give a schematic diagram showing the different steps of a Carbon cycle and discuss on it with the important reactions involved in it. (5)**
- Q3 a) Give a flow sheet for conventional surface water treatment practices in India and discuss on it. (5)**
- b) The sewage of town is to be discharged into river stream. The quantity of sewage produced per day is 8million litres, and its BOD is 250 mg/l. If the discharge in river is 200L/s and if its BOD is 6mg/l, Calculate the BOD of diluted water. (5)**
- Q4 a) Initial DO value of a waste water sample is 7.7 mg/L and final DO value after 5 days of incubation at 20°C comes out to be 4.6 mg/L. Find out the  $\text{BOD}_3$  at 27°C. Given  $K_{20} = 0.14 \text{ day}^{-1}$ . Waste water sample volume is 10 ml. (5)**
- b) Explain the chlorine demand and breakpoint chlorination process with the help of a suitable graph. What are the advantages of use of chlorine as a disinfectant? (5)**
- Q5 a) What is atmospheric dispersion? Sketch and explain Looping and Lofting plume dispersion phenomena. (5)**
- b) What is municipal solid waste landfill? Give a lay out for MSW landfill and discuss on it. (5)**
- Q6 What is noise standard? Discuss various elements of noise measurement. Compute the equivalent noise power level  $\text{LA}_{\text{eq}}$  in a locality having three noise sources: 50 dB (A) acting for 20 minutes, 67 dB (A) acting for 30 minutes and 85 dB (A) acting for 10 minutes during one hour. (10)**

- Q7** Explain the flow of energy through an ecosystem with the help of an energy flow model and discuss how the two laws of thermodynamics can be explained with the help of this model. **(10)**
- Q8** **Write short Notes on any TWO :** **(5 x 2)**
- a) Solid waste management through land fill and its merits and demerits.
  - b) Environmental gradient and tolerance level of environmental factors.
  - c) Types of incinerators in hazardous waste management.