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B. Tech

HSSM 4403/PH.7.7

Seventh Semester Examination - 2007

ENVIRONMENTAL ENGINEERING

Full Marks - 70

Time : 3 Hours

Answer Question No. 1 which is compulsory
and any **five** from the rest.

The figures in the right-hand margin
indicate marks.

1. Explain in brief : 2×10
- (i) Sustainable development
 - (ii) Biotic components
 - (iii) Energy budget
 - (iv) Wind rose diagram
 - (v) Fugitive emissions

P.T.O.

- (vi) ISO: 14000 standards
 - (vii) Anaerobic biodegradation
 - (viii) Physical properties of sound
 - (ix) Life cycle assessment
 - (x) Green house effects.
2. (a) What are the common constituents of alkalinity and acidity in water and their sources ? 6
- (b) Briefly discuss on two most commonly used Indian acts which have been enacted for control of air and water pollution in our country. 4
3. (a) Outline the significance of eco-system of biosphere and ecological balance. 5
- (b) How do you feel about the relevance of conducting environmental audits in industries ? 5

4. (a) Mention four factors that affect the dispersion of air pollutants in the atmosphere. 2
- (b) BOD of an effluent sample incubated for one day at 30° C was found to be 100 mg per litre. What would be the 5 day 20° C BOD of the same sample ? $K = 0.12$ at 20° C. 8
5. (a) Draw a neat schematic diagram of a modern effluent treatment plant and show various units on it. 6
- (b) List four effects of noise pollution other than hearing damage. 4
6. (a) Explain with the help of a flow diagram the process of activated sludge process. 5
- (b) Briefly explain the methodology used for treatment of biomedical hazardous waste. 5

7. (a) Which equipment would you suggest for installation in a coal-fired power plant for control of air pollutants ? 4
- (b) Mention the objectives and important steps followed in an EIA process. 6
8. Write short notes on : 2.5×4
- (i) Flue gas desulphurization
 - (ii) Leachate movement in landfill
 - (iii) Ultimate BOD
 - (iv) Criteria pollutants.

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