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Total Number of Pages : 2

B.TECH

4th Semester Regular Examination -April-May 2019**BBSBS3061 ENVIRONMENTAL ENGINEERING & SAFETY**

(Regulations 2017) AEIE/ECE/CSE/IT/EEE/EE ENGG.

Time : 3 Hours

Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark**1. Answer all Question**

- (a) Which statement is correct for buffer zone of biosphere reserve? [CO1][PO1]
 a) It is legally protected b) Authority takes cooperation with local people.
 c) Environmental Education is facilitated by this zone.
 d) Hunting and felling of trees occur in this zone
- (b) In an ecosystem, which one shows one-way passage [CO1][PO1]
 a) Free energy b) Carbon c) nitrogen d) Potassium
- (c) The apparatus in which the measurement of turbidity is based on the intensity of light scattered at right angle to the incident light is called [CO2][PO1]
 a) Spectrometer b) Tintometer c) Turbid meter d) Nephelometer
- (d) The presence of hardness in excess of permissible limit causes [CO2][PO2]
 a) Cardio vascular problems b) Skin discolouration
 c) Calcium deficiency d) Increased laundry expenses
- (e) What type of noise can be abated by providing lining on walls and ceiling with sound absorbing materials? [CO2][PO2]
 a) Source noise b) Reflection noise c) Structural noise d) Direct airborne noise
- (f) Aerobic method of composting practiced in India is called [CO3][PO1]
 a. Bangalore method b. Nagpur method c. Delhi method d. Indore method
- (g) The process of burning of municipal solid waste at high temperature is called [CO3][PO1]
 a. Incineration b. Land filing c. Composting d. Shredding
- (h)is commonly found both in households as well as in industries [CO3][PO1]
 a. Liquid waste b. Solid Rubbish c. Organic Waste d. Hazardous Waste.
- (i) The Primary Goal of Occupational Health is about [CO4] [PO2]
 a. Protecting the safety, health and welfare of people engaged in work
 b. Protecting co-workers, family members employers, suppliers
 c. Protecting the natural environment
 d. Protecting the fire safety
- (j) An accident is? [CO4][PO1]
 a. An unsafe act b. An unsafe condition
 c. Unplanned, something that happens by chance d. Sudden incident

**PART B - (10 X 2 = 20 Marks)**

2. Answer all Questions.

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| (a) Define ecosystem? | [CO1][PO1] |
| (b) What is the difference between food chain and food web? | [CO1][PO1] |
| (c) What is meant by coagulation? State any three coagulants | [CO2][PO2] |
| (d) Explain the principle of plain sedimentation? | [CO2][PO1] |
| (e) What are primary and secondary air pollutants? | [CO2][PO1] |
| (f) Define hazardous waste? | [CO3][PO1] |
| (g) What are the major municipal solid waste management and handling rules? | [CO3][PO1] |
| (h) Differentiate between hazardous and non-hazardous waste | [CO3][PO1] |
| (i) What is meant by Human error? | [CO4][PO1] |
| (j) Define Safety and Health Acts? | [CO4][PO1] |

PART C - (4 X 15 = 60 Marks)

Q.3

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| a. Write a note on biomagnifications. Explain about biomagnifications of DDT in a food chain | [8][CO1][PO1] |
| b. Explain the role of producers, consumers and decomposers in an ecosystem
(OR) | [7][CO1][PO1] |
| c. List the biogeochemical cycles. | [6][CO1][PO6] |
| d. Explain about carbon and nitrogen cycles with the help of a diagram? | [9][CO1][PO7] |

Q.4.

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| a. Define disinfection. Explain briefly any four good requirements of disinfection and list out the methods of disinfection? | [10][CO2][PO2] |
| b. With the help of sketch, explain the break-point chlorination
(OR) | [5][CO2][PO2] |
| c. Explain and draw the Lime soda process used for water softening. | [7][CO2][PO6] |
| d. Explain the primary and secondary treatment of waste water | [8][CO2][PO7] |

Q5.

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| a. Write briefly on the rules to be kept in mind while designing the collection route. | [7][CO3][PO2] |
| b. Explain briefly about environmental auditing.
(OR) | [8][CO3][PO7] |
| c. How does incineration help in the management of solid waste? | [6][CO3][PO1] |
| d. Describe the incineration technologies and air emissions and its control in detail. | [9][CO3][PO2] |

Q6.

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| a. Explain about the Occupational Safety and Health Acts | [10][CO4][PO1] |
| b. Explain about Handling and storage of Hazardous materials
(OR) | [5][CO4][PO1] |
| c. Explain the details of Fire Protection and Fire Prevention | [8][CO4][PO1] |
| d. Explain about the Hazard Control and Types of Hazards | [7][CO4][PO1] |