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Total Number of Pages : 2

AR-17

B.TECH

3rd Semester (BACK PAPER) Examination-2019**BBSBS3061**

BIOTECH/CHEMICAL/CIVIL/MECHANICAL

ENVIRONMENTAL ENGINEERING & SAFETY

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**Q.1. Answer All Questions**

- a Which of the following is a coagulant?
(a) Aluminium sulphate (b) Ferrous sulphate
(c) Ferric chloride (d) All the above
- b Pick up the correct food chain
(a) grass → chameleon → insect → bird
(b) grass → fox → rabbit → bird
(c) phytoplankton → zooplankton → fish
(d) fallen leaves → bacteria → insect larvae.
- c In abiotic community, the primary consumers are
a) detritivores (b) herbivores (c) carnivores (d) omnivores
- d Which element in CFC damages the ozone layer?
(A) Carbon (B) Fluorine (C) Chlorine (D) None of the above
- e For unstable atmosphere which condition is applicable?
(A) $ALR = DALR$ (B) $ALR > DALR$ (C) $ALR < DALR$ (D) None of the above
- f In which method of disposal of municipal solid waste, the waste is dumped in the soil?
a) Incineration
b) Composting
c) Land filling
d) Shredding
- g Which of the following waste can be decomposed by bacteria?
a) Radioactive substance
b) Ashes
c) Food waste
d) Rubbish
- h Select which of the following is not a fire extinguishing agent.
a) Carbon dioxide
b) Oxygen
c) Water
d) Foam
- i Curative measures in occupational health protection for workers include
a) pre-employment and periodic medical examination
b) begin once a worker suffers from ill health and disease
c) active interest of management for promoting safety
d) training on safety
- j Which of the following gas is corrosive in nature?
a) Chlorine
b) Carbon monoxide
c) Phosgene
d) Hydrogen

**PART – B: (Short Answer Questions) 10X2=20 Marks****Q.2. Answer ALL questions**

- a Name two important biotic components of a fresh water ecosystem.
- b Define food chain and food web with suitable examples
- c What are the different types of food chain and write the significance of food chain.
- d Differentiate grazing food chain and detritus food chain.
- e Differentiate coagulation and flocculation.
- f What are the meteorological parameters for dispersion of pollutants
- g What is Terms of Reference (ToR) in EIA study?
- h What are the benefits of waste minimization?
- i Explain the term leachate and its method of generation in landfill.
- j Differentiate between incineration and pyrolysis.

PART – C: (Long Answer Questions) 4X15=60 Marks**Answer ALL questions**

- Q.3**
- a Draw the temperature profile for earth's atmosphere and explain it. 7
 - b What are methods involved in preliminary treatment and primary treatment of water and briefly explain these methods. 8
- OR
- c Write the objectives of Water Act and The Air Act. 5
 - d What are the effects of noise pollution? Write the different steps to control it. 10
- Q.4**
- a Explain about the activated sludge treatment of waste water with neat diagram. Write its advantages and disadvantages. 10
 - b Discuss the plume behavior of looping, coning and lofting with sketches of stack plumes and temperature profile. 5
- OR
- c Briefly explain about the dry methods used in desulphurization of flue gas. 7
 - d Explain how the effects of different green house gases for global climatic change. 8
- Q.5**
- a . Discuss about the properties of hazardous waste. 5
 - b What are sources of hazardous waste? Discuss about the classification and their generation from different sources. 10
- OR
- c What is incineration? Discuss about Plasma Arc destruction incineration technique with diagram. Write its advantages and disadvantages. 10
 - d Explain the different land disposal methods for hazardous waste. 5
- Q.6**
- a What is safety management? Discuss about the safety handling and storage of corrosive substances and hydrocarbons. 10
 - b Write short notes on personal protective equipments. 5
- OR
- c Explain the two methods of detecting the fire. 5
 - d Explain about the different types of fire extinguishers used to extinguish the fire. Also briefly explain the types extinguishing agents used for the above. 10