

B.Tech 2nd Semester Exam., 2015

ENVIRONMENTAL SCIENCE

Time : 3 hours

Full Marks : 70

Instructions :

- (i) **All** questions carry equal marks.
- (ii) There are **NINE** questions in this paper.
- (iii) Attempt **FIVE** questions in all.
- (iv) Question No. 1 is compulsory.

1. Answer any seven questions :

- (a) The excessive amount of cadmium causes
 - ~~(i)~~ itai-itai disease
 - (ii) brain and kidney damage
 - (iii) flue-like disease
 - (iv) All of the above

- (b) Denitrification converts the nitrate and nitrite to nitrogen gas under the presence of organic matter which is

- (i) ethanol
- (ii) methanol
- (iii) propanol
- (iv) chloroform

- (c) Sedimentation is used for

- ~~(i)~~ grit removal
- ☒ (ii) particulate matter removal in PST
- (iii) chemical and biological flow removal
- (iv) All of the above

- (d) Under Indian conditions, average per capita contribution of BOD is

- (i) 10-20 mg/l
- (ii) 35-50 gm/d
- (iii) 20-35 gm/d
- (iv) 50-70 gm/d

(e) The organic nutrients required by the organisms are called as

(i) substrates

~~(ii) nutrients~~

(iii) growth factors

(iv) None of the above

(f) Which of the following protozoa generally used as energy source?

(i) Fungi

(ii) Bacteria

(iii) Viruses

(iv) Small protozoa

(g) Proximate analysis is used to know

~~(i) moisture and volatile matter~~

(ii) heating value

~~(iii) fusing point of ash~~

(iv) Both (i) and (iii)

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(h) A sample of air analyzed at 0 °C and 1 atm pressure is reported to contain 5 ppm of CO. The equivalent CO conc. in g / m³ is

(i) 6250 g / m³

(ii) 6000 g / m³

(iii) 625 g / m³

~~(iv) 140 g / m³~~

(i) The major cause of ozone depletion in stratosphere has been identified as

~~(i) chlorofluorocarbons~~

(ii) carbon monoxide

(iii) nuclear radiation

(iv) carbon dioxide

(j) The efficiency of sedimentation tank does not depend upon <http://www.akubihar.com>

(i) detention time

(ii) depth of the tank

(iii) length of the tank

~~(iv) horizontal velocity of water~~

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- ~~2~~ (a) What do you understand by air pollution? Explain its sources of generation with examples.
- (b) Explain the types of effects of air pollution on human. Also write about the effects on materials, plants and animals.
- ~~3~~ (a) What is solid waste? Explain with suitable examples the various types of solid waste.
- (b) "The temperature of earth is rising." Explain this statement with examples.
- ~~4~~ (a) What are the sources of noise pollution? Also write about its effects on human beings.
- (b) Explain how you can control noise pollution.
- ~~5~~ (a) How groundwater gets polluted? Explain with examples.
- (b) Write about the causes and effects, and control of soil pollution.

6. (a) What do you mean by biodiversity? Explain the levels of biodiversity with suitable examples.
- (b) Discuss the values of biodiversity with examples.
7. (a) Explain in detail the Environment Protection Act (1986).
- (b) Discuss the toxic effects of Pb^{+2} , Cd^{+2} , Hg^{+2} , As^{+3} . Also discuss the estimation of As^{+3} ion in water.
8. (a) What are the importance of environmental studies? Discuss the components of environment with examples.
- (b) Discuss the hot spots of biodiversity in detail.

9. Write short notes on the following :

- (a) Earthquakes
- (b) Conservation of biodiversity
- (c) Acid rain
- (d) Value education in environment

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