

UNDERGRADUATE (C.B.C.S.S.) EXAMINATION, OCTOBER 2014**Fifth Semester**

Open Course—ENERGY AND ENVIRONMENTAL STUDIES

(Offered by Board of Studies in Physics)

[For 2010 Admission onwards]

Time : Three Hours

Maximum Weight : 25

Part A (Objective Type Questions)*Answer all questions.**Each bunch of four questions carries a weight of 1.***BUNCH I**

Choose the correct answer :

1. 71% of earth's surface is covered with :
(a) Land. (b) Air.
(c) Water. (d) Coal.
2. Which of the following wastes can not be decomposed by bacteria ?
(a) Kitchen Wastes. (b) Plastic and Polythene bags.
(c) Dead plants. (d) Bodies of insects living in the soil.
3. Air pollution is caused by :
(a) Insecticides. (b) Sewage.
(c) Smoke. (d) Loud Speakers.
4. The average surface temperature of water is :
(a) 6000°C . (b) 600°C .
(c) 60000°C . (d) 600000°C .

BUNCH II

Choose the correct answer :

5. The largest fresh water lake is :
(a) Lake Superior. (b) Lake Victoria.
(c) Lake Tanganyika. (d) None of these.
6. What is the biggest source of nitrate pollution in water ?
(a) Human waste. (b) Agriculture Waste.
(c) Harvest of timber. (d) Cultivation of grass lands and jhum cultivation.

Turn over

7. A network of food chains in ecosystem constitutes :

- (a) Ecological niche.
- (b) Food pyramid.
- (c) Food web.
- (d) Food energy.

8. EIA, a tool used to identify :

- (a) Environmental impacts of a project.
- (b) Social impacts of a project.
- (c) Economic impacts of a project.
- (d) All of the above.

BUNCH III

Choose the correct answer :

9. The dangers of disposing of toxic chemicals under ground came to public attention in which of the following locations ?

- (a) Bhopal, India.
- (b) Chernobyl, Ukraine.
- (c) Love Canal, New York.
- (d) Minamata, Japan.

10. Which of the following green house gases has the greatest heat-trapping ability per molecule ?

- (a) Carbon Dioxide.
- (b) Carbon Monoxide.
- (c) Chlorofluorocarbon.
- (d) Methane.

11. Which of the following best accounts for mercury's significant harm to the environment ?

- (a) Persistence.
- (b) Degradability.
- (c) Specificity.
- (d) Synergism.

12. The most stable ecosystem is :

- (a) Forest.
- (b) Ocean.
- (c) Desert.
- (d) Mountain.

BUNCH IV

Choose the correct answer :

13. In some regions, the combination of acid rain and smog cause damage to forests that is worse than the impact of either acid rain or smog on its own. This is an example of

- (a) Specificity.
- (b) Acute Toxicity.
- (c) Chronic Toxicity.
- (d) Synergic Action.

14. Most of the day-to-day weather activity take place in :

- (a) Troposphere.
- (b) Stratosphere.
- (c) Ionosphere.
- (d) Mesosphere.

15. _____ is a primary pollutant.
- (a) Sulfuric Acid (b) Carbonic Acid.
(c) Nitrous Oxide. (d) Ozone.
16. The end product of glycolysis is :
- (a) Acetic Acid. (b) Pyruvic Acid.
(c) Malic Acid. (d) Boric Acid.

(4 × 1 = 4)

Part B (Short Answer Questions)

Answer any five questions.

Each question carries a weight of 1.

17. What are the merits and demerits of non-renewable sources of energy ?
18. Write a short note on different types of solar water heaters.
19. What are the causes of environmental degradations ?
20. What do you mean by ecology ?
21. What are the hazardous effects of solid wastes ?
22. How can we achieve waste minimization ?
23. Write a short note on food chain.
24. Explain the advantages of biomass as an energy source.

(5 × 1 = 5)

Part C (Short Essays/ Problems)

Answer any four questions.

Each question carries a weight of 2.

25. Explain green house effect and global warming.
26. Explain the working principle of solar photo voltaics.
27. Differentiate primary and secondary pollutants.
28. What are the environmental protection acts in India ?
29. Explain the impacts of marine pollution.
30. Write a note on fusion energy.

(4 × 2 = 8)

Turn over

Part D (Essay Type Questions)

Answer any **two** questions.

Each question carries a weight of 4.

31. Explain the working of moving dome type biogas plant with the help of a diagram. What are the materials used for biogas generation ?
32. Explain the treatment and disposal methods of biomedical solid wastes.
33. Explain the following :—
 - (i) Water Pollution.
 - (ii) Air Pollution.

(2 × 4 = 8)