

Section A Answer ALL questions.

1. Which of the following explains the objective of Environmental studies?
 - a. Raise consciousness about environment conditions
 - b. To teach environmentally appropriate behaviour
 - c. Create an environmental ethic sensitive society
 - d. All of the above

2. Which of the following provides the basic requirements of human beings?
 - a. Industrialization
 - b. Agriculture
 - c. Nature
 - d. Urbanization

3. Which of the following is **correct** about finding solutions to environmental issues/challenges?
 - a. It is difficult to identify remedies to the environmental challenges
 - b. The environmental challenges are still not well understood.
 - c. It is easy to make the solutions to the issues socially, economically, and politically acceptable
 - d. Solutions to the environmental issues require social systems and natural science.

4. Which of the following is **not** correct about the use of critical thinking in unpacking solutions to environmental challenges from existing knowledge?
 - a. Discovering hidden ideas and meanings,
 - b. Developing strategies for evaluating reasons and conclusions in arguments,
 - c. Distinguishing between facts and values
 - d. Reduced time in finding conclusions

5. Environmental and water resource managers are required to apply critical thinking when making decisions on environmental issues. Which of the following correctly explains critical thinking?
 - a. It breaks down an issue into its constituent parts
 - b. It requires approaching the issue in different ways
 - c. It requires orderly, deductive reasoning
 - d. It requires reflection on what to be accomplished and the evidence for success

6. Which one of these does **not** refer to the direct use of forest products?
 - a. Grass for grazing
 - b. Gums and resins
 - c. Medicine
 - d. Bamboo for baskets

7. What are deserts, grasslands, forests and tundra regions an examples of?
 - a. Biomes
 - b. Biogeographically regions
 - c. Ecosystems
 - d. Biospheres

8. Which of these belong to the category of primary consumers in grazing food chain?
- snakes and frogs
 - Insects and cattle
 - Eagle and snakes
 - Cow and rabbit
9. Which of these does **not** constitute a reason for the loss of forests?
- Extinction of species
 - Increasing use as food
 - Building dams and mining
 - Extensive usage of fuel woods
10. Identify the impact of loss of forest from the options provided.
- Erosion of fertile soil
 - Global warming
 - Loss of habitat of plants and animals
 - All of the above
11. Identify a regulating ecosystem service from the options provided
- Fresh water services
 - Decomposition of wastes
 - Aesthetic experience
 - Biochemical and pharmaceuticals
12. Which one of the following is **not** a gaseous biogeochemical cycle?
- Nitrogen cycle
 - Carbon cycle
 - Sulphur cycle
 - Phosphorus cycle
13. Which of the following activity is **incorrect** about the impact of human activities on the ecosystem?
- Depletion of ground water
 - Extinction of species
 - Decrease of forest area
 - None of the above
14. Which of the following is responsible for recycling of nutrients in the ecosystem?
- Biogeochemical cycles
 - Energy flow
 - Producers
 - Consumers
15. What do we call the conversion of ammonia to nitrite and then nitrate?
- Nitrogen fixing

- b. De-nitrification
- c. Nitrification
- d. Ammonification

16. Which of the following helps in achieving protection of wild flora and fauna in the natural habitat?

- a. In-situ conservation
- b. Ex-situ conservation
- c. In-vivo conservation
- d. Ex-vivo conservation

17. Name the gas that is vital in maintaining atmospheric temperature.

- a. Oxygen
- b. Carbon Dioxide
- c. Nitrogen
- d. None of the above

18. How can we define the phenomenon of urbanization?

- a. Urbanization is a demographic, ecological, sociological and economic phenomenon.
- b. Urbanization is a social, philosophic, sociological and economic phenomenon.
- c. Urbanization is a demographic, ecological, psychological and environmental phenomenon.
- d. Urbanization is a demographic, environmental, sociological and technical phenomenon.

19. What do we call pollutants that are easily manageable and decomposable in nature?

- a. Biodegradable pollutants
- b. Non-biodegradable pollutants
- c. Renewable pollutants
- d. None of these

20. Which of the following represent the preferred order of the 3R principle?

- a. Reduce, Reuse, Recycle
- b. Reuse, Reduce, Recycle
- c. Recycle, Reuse, Reduce,
- d. None of the above

21. In solid waste management, waste utilization is achieved by

- a. Recover, reclamation
- b. Reuse, reclamation and Recycling
- c. Recover, Recycling and Reproduce
- d. Reuse, Reproduce and Recycling

22. Which list is composed of renewable resources?

- a. Petroleum, geothermal, wind
- b. Biomass, geothermal, hydropower
- c. Natural gas, wind, biomass
- d. Hydropower, solar, wind energy

23. Identify a fossil fuel from the list given.

- a. Oil
- b. Coal
- c. Natural gas
- d. All of the above

24. Which of the following is released in a large amount by the burning of fossil fuels?

- a. Nitrogen into air
- b. Sulphur into air
- c. Carbon dioxide into air
- d. Oxygen into air

25. What factors are considered as the causes of eutrophication?

- a. Increment in plant nutrients
- b. Using fertilizers excessively
- c. Both (a) and (b)
- d. None of the above

26. Vulnerability to a particular natural hazard or disaster consist of a set of factors. Which of the following are included in such vulnerability components?

- i. Name of any danger or calamity
 - ii Vulnerability community encompassing both the terrestrial and marine communities
 - iii. Material sensitivity of physical structure
- a. i and iii
 - b. ii and iii
 - c. i, ii and iii
 - d. i and ii

27. Which of the following is not a potential adverse effect of global warming?

- a. More extreme weather patterns
- b. Retreat of glaciers
- c. Sea level rise
- d. An increase of UV-B radiation

28. How are humans making greenhouse gases of our own?

- a. Burning fossil fuels
- b. Burning forests
- c. With large scale agriculture
- d. All of these

29 Climate change involve factors, both internal and external. Which ones are external?

- i. Feedback between the atmosphere, Ocean and land surface
- ii. Solar variability
- iii. Earth's orbit alteration
- iv. Variability within the climate system

v. Volcanic activity

Choose the correct answer from the options given

- a. i, ii and iii only
- b. ii, iii and v only
- c. iii, iv and v only
- d. i, ii and v only

30. Given below are two statements:

Statement I: Global warming is the cause of climate change

Statement II: Ozone depletion will cause global warming.

In light of the above statements choose the correct answer from the options given below:

- a. Both Statement (I) and Statement (II) are individually true and Statement (II) is the correct explanation of Statement (I)
- b. Both Statement (I) and Statement (II) are individually true but Statement (II) is not the correct explanation of Statement (I)
- c. Statement (I) is true but Statement (II) is false
- d. Statement (I) is false but Statement (II) is true

Section B

The Candidate must attempt all questions in this section. Answers must be precise and concise

1. Process of burning of non-biodegradable solid waste is called _____

2. Earth's temperatures are stable because we are surrounded by _____ which allows the right amount of sunlight in to warm the Earth.

3 _____ is a holistic approach to resource management that emphasizes waste reduction, reuse and recycling

4. _____ is an extreme natural phenomenon capable of causing disaster leading to loss of lives or damage to property.

5 _____ is a colorless, odorless and toxic gas produced when organic material like coal and their product incompletely burnt

6 _____ are "species that are not found after searches of known or likely areas where they may occur"

7 _____ shall be the first responders in disaster management situation?

8 _____ is an Outbreak of a disease in international scale

- 9 _____ is the best method for the disposal of solid waste?
 10 _____ layer of the atmosphere contains the ozone responsible for the absorption of UV (Ultra-Violet) light?
 a. Stratosphere

Read the following statements and indicate whether True/False	ANS
11) Natural services are functions of nature, such as purification of air and water, which support life and human economies	
12) The movement of water from the surface of plants into the atmosphere by a process called transpiration	
13) Nitrogen gas (N ₂) makes up 78% of the atmosphere can be directly consumed by plants to produce various proteins, nucleic acids, and vitamins	
14) Because the earth does not get significant inputs of matter from space, its essentially fixed supply of nutrients must continually be recycled to support life	
15) The geological cycle, also called the rock cycle, is the slowest of Earth's processes	
16) Point sources of water pollution such as atmospheric deposition or run-off from irrigation are relatively easy to monitor and regulate compared to non-point sources of pollution	
17) Most aquifers are rapidly recharged through precipitation that percolates downward through soil and rock	
18) A drainpipe of a factory that is releasing a pollutant is an example of nonpoint source of pollution	
19) Nuclear power is a clean energy source because it does not produce the greenhouse gas carbon dioxide and because it is a renewable resource	
20) Land filling is an economic alternative for solid waste disposal and it can be implemented easily.	

Read the following case and answer the questions

Section C 20 Marks

These are long answer questions

There are a total of three (3) questions, each carrying 20 marks. A candidate is required to **answer any one (1) question**

1. a) By use of examples, explain the following ecosystem functions [15Mks]
 i) Provisioning/utilitarian
 (ii) Regulating services
 (iii) Enriching services
 b) Describe the environmental roles of Wetlands [5Mks]
- 2a) Discuss the key drivers of urbanization [12Mks]

b i) "Towns and cities are characterized by a myriad of environmental problems". Identify levels at which such problems are felt. [2Mks]

(ii) Identify and describe any **three** problems specifying at what level(identified in b i above) it occurs. [6Mks]

3a) Define the term Hazard and list and describe the three primary hazard categories. [3Mks]

(b) Explain the difference between hazard exposure and hazard vulnerability. [2Mks]

(c i). List and define the three phases of disaster response [6Mks]

ii). Explain the link between disasters and development [9Mks]