

MODEL ANSWERS

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SEMESTER END THEORY EXAMINATION

B.Sc. (Hons.) Agriculture/Forestry

Semester : III (New) Term : I Academic Year : 2020-21
Course No. : ESDM – 231 Title : Environmental Science and Disaster Management

Credits : 3 (2+1)

Day & Date : 19.01.2021 Time : 2.00 Hrs Total Marks : 80

- Note:
1. Solve ANY EIGHT questions from SECTION – A
 2. Solve ANY TWELVE questions from SECTION – B
 3. ALL questions from SECTION – C are compulsory
 4. Send the PDF file of answer sheet to the email id of respective course teacher

SECTION – A

(Write the answers in 4-5 sentences only. Each question carries 4 marks)

Q. 1 Enlist any eight the roles of individual in controlling of pollution

Ans The possible ways in which Individual can controlling pollution: [1]Individuals should minimize wastage of natural resources [2]Individuals should avoid vehicles, for small distances [3]Using public transport (buses, trains, etc) [4] should pool vehicles [5]vehicles for periodic pollution checks [6]reuse items whenever possible [7]avoid plastic bags [8]Take part in environment conservation drives such as tree planting drives [9]Use water resources efficiently etc., *(At least eight points should be given ½ marks each)*

Q. 2 Give the classification of disaster with examples

Ans The classification of disaster:

I] Natural Disaster: [a] Major natural disaster viz., Flood, Cyclone, Drought and Earthquake etc., [b] Minor natural disaster viz., Cold wave, Thunderstorms, Heat waves, Mud slides and Storm

II] Manmade Disaster: [a] Major manmade disaster viz., Setting of fires, Epidemic, Deforestation, Pollution due to prawn cultivation, Chemical pollution and Wars etc., [b] Minor manmade disaster viz., Road/train accidents, riots, Food poisoning, Industrial disaster/ crisis, Environmental pollution *(Four types of disaster with suitable example 1 mark each)*

Q. 3 What are Natural resources? Give types of classifications of natural resources with examples

Ans Natural Resources: A resource is anything needed by an organism to fulfill its needs provided by nature *(1 mark for correct definition)*

Classification of natural resources : [a] Based on quantity, mutability and reusability viz., Inexhaustible, Exhaustible, renewable and non-renewable.[b] Based on continual utility viz., renewable, non-renewable and cyclic resources [c] Based on origin viz., biotic and abiotic *(Brief description with proper example should be given for each class 1 mark each)*

Q. 4 Enumerate the various causal factors of threat to biodiversity

Ans The various causal factors of threat to biodiversity : [1] Development pressure: Construction, Hydrel/ Irrigation projects Mining, Road& Transport etc., [2] Encroachment: Agriculture, Expansion of forest villages, Grazing, Habitat depletion / change, Shifting cultivation etc., [3] Exploitation: Firewood collection, Food gathering and hunting, Poaching etc., [4] Human induced disasters: Floods, Major oil spills/leakage, Epidemics, Forest fires

[5] **Management of Natural resources:** Genetic uniformity, Inadequate food for wildlife, Increased competition, Introduction of exotic species, Predation etc., [6] **Management of Human Resource:** Change in people's lifestyle, Increasing demands, Lack of management etc., (At least Four causal factors with suitable example 1 mark each maximum 4 marks)

Q. 5 What is Pollution? State the causes, effects and control of air pollution

Ans Pollution: It is an undesirable and harmful changes in environment (1Mark for definition)

The sources and effects of air pollution

Sources: gaseous emission from mainly industry, thermal power stations, automobiles, domestic combustion etc. (1 Mark)

Effects of air pollution: adverse effects on human health, building facades and other exposed materials, vegetation, agricultural crops, animals, aquatic and terrestrial ecosystems, and the climate of earth.(1 Mark)

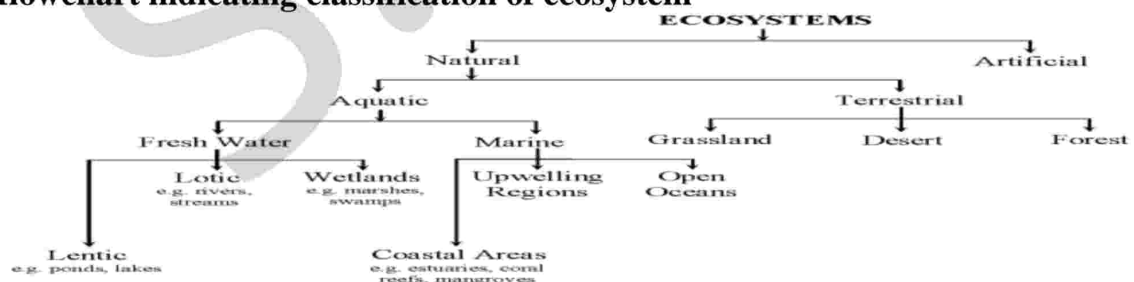
Control of air pollution: Control measures includes [a] Reduce the use of automobiles and make use of public transport system [b] Keep vehicle filters clean and use only quality fuels. [c] Use CNG (Compressed Natural Gas) [d] Use LPG for cooking instead of wood, coal [e] Do not burn plastics etc., (Any two control measures should be given ½ each max. 1 mark)

Q. 6 State scope of environmental science.

Ans Environmental science can be applied in the following areas : [1] Ecosystem Structure and Function [2] Natural Resource Conservation [3] Environmental Pollution Control [4] Environmental management [5] The scope of environmental studies in industry [6] Research and development [7] Social Development(Any four points of scope should be given 1mark each for correct point maximum 4 mark)

Q. 7 Draw flowchart indicating classification of ecosystem

Ans



(Flow chart indicating all major types of ecosystem should be given – 4 marks)

Q. 8 What are effects of global warming?

Ans The effects of global warming:[1] Effect on weather and climate [2] sea level change [3] effect on range of species distribution [4] Effect on food production etc., (Brief description on above points should be given 1 mark each point maximum 4 marks)

Q. 9 State the modes of transmission and control measures of AIDS

Ans Mode of transmission: (1) Sexual transmission (2) Blood contact (3) Maternal-fetal transmission(Brief description of should be given 1 mark for each point maximum 2 marks)

Control of AIDS (a) Safe sexual activity and sex (b) AIDS education and educating the AIDS patients (c) Educating illiterates as well as the educated public about AIDS prevention measures using different medias(Brief description of should be given 1 mark for each point maximum 2 marks)

Q. 10 Enlist different types of ecological pyramids. Explain anyone

Ans Different types of pyramids: [a] Pyramid of numbers [b] Pyramid of Biomass; and [c] Pyramid of energy (2 mark for all three types of pyramids and 2 marks for description of anyone of type with proper diagram)

SECTION – B

(Write the answers in one sentence only. Each question carries 2 marks)

Q. 11 Do as directed (Any Twelve)

- a) Spell out IPCC and NDMA**
Ans **IPCC** – Inter-governmental Panel on Climate Change
NDMA – National Disaster Management Authority(*1 mark each for correct full form*)
- b) What do you mean by biodiversity?**
Ans The sum total of the variety of organisms in the biosphere (*2 mark for correct definition*)
- c) List out the basic biotic components of any ecosystem**
Ans Basic biotic components of ecosystem - producer, consumers and decomposers(*2 mark for correct three components*)
- d) Enlist the levels of biodiversity**
Ans **Three Levels of biodiversity:** [1] Genetic diversity [2] Species diversity [3] Ecological diversity(*1 mark for each type of level of biodiversity maximum 2 marks*)
- e) What is difference between reforestation and aforestation**
Ans Reforestation refers to planting of trees on area where trees were present while aforestation refers to planting on area where trees were absent in past (*1 mark for each point maximum 2 marks*)
- f) What do you mean by disaster?**
Ans **Disaster:** it is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses (*2 mark for correct definition*)
- g) Enlist any four abiotic climatic components of ecosystem.**
Ans **Abiotic climatic components of ecosystem:** Air, Water, Temperature, Sunlight etc.,(*At least four points should be given ½ mark for each correct components maximum 2 marks*)
- h) Give any four ways of water conservation**
Ans **Ways to water conservation:**rainwater harvesting, watershed management, building check-dams, avoid household wasting etc.,(*at least four points should be given ½ mark for each point maximum 2 marks*)
- i) State the different types of pollution**
Ans **Types of Pollution:** Air pollution, water pollution, noise pollution, land/soil pollution, marine pollution, radioactive pollution etc., (*At least any four sources ½ Mark each maximum 2 marks*)
- j) List out any four natural disasters**
Ans **Natural Disaster :** Flood, Cyclone, Drought, Earthquake, Cold wave, Thunderstorms, Heat waves, landslides etc., (*Correct four natural disasters, ½ Mark for each maximum 2 marks*)
- k) Define environmental science**
Ans **Environmental Science:** it can be described study of the interrelationships among organisms, the environment and all the factors, which influence life on earth, including atmospheric conditions, food chains, the water cycle, etc. (*2 mark for correct definition*)
- l) List out the prominent solid wastes**
Ans Solid wastes include sewage sludge, agricultural refuse and demolition wastes etc., (*1 mark for type of solid waste maximum 2 marks*)
- m) Give four important channels used for disaster warning**
Ans **Important channels used for disaster warning includes** [1] Radio and Television [2] Telephone (Landlines/mobiles) [3] Short message services [4] Satellite radios [5] Internet/Emails etc.,(*Correct any four channels, ½ Mark each maximum 2 marks*)
- n) List out any four renewable resources**
Ans **Renewable resources:** Solar energy, Wind energy, Geothermal energy, Tidal energy, Biomass energy etc., (*At least any four renewable resources ½ Mark each maximum 2 marks*)

SECTION – C

Q. 12 (Choose the correct option. Each question carry 1 mark)

- 1) Floods can be prevented by _____
[a] **Afforestation** [b] Deforestation
[c] Soil erosion [d] None of these
- 2) _____ proposed the term ecosystem
[a] Ernst Haeckel [b] E. Odum
[c] **A.G. Tansley** [d] Lindeman
- 3) Exhaustible energy resources includes _____
[a] Solar energy [b] **Petroleum products**
[c] Tidal energy [d] None of these
- 4) _____ is the highest level of organization in nature
[a] Organism [b] Community
[c] Population [d] **Biosphere**
- 5) Autotrophs are generally _____
[a] **Producers** [b] Consumers
[c] Decomposers [d] None of these
- 6) _____ is primary function of any complete terrestrial ecosystem
[a] Respiration [b] Decomposition
[c] **Photosynthesis** [d] None of these
- 7) As per the National Policy, India should have _____ per cent of land under forest
[a] 50 per cent [b] 45 per cent
[c] **33 per cent** [d] 12 per cent
- 8) _____ is the driving force to the work of ecosystem
[a] Water [b] Atmosphere
[c] **Energy** [d] Animals
- 9) World Water Day is observed on _____
[a] **22 March** [b] 2 February
[c] 15 August [d] 14 December
- 10) Biosphere comprises of _____ major components
[a] Two [b] **Three**
[c] Four [d] Five
- 11) Sources of fresh water does not includes _____
[a] Groundwater [b] **Ocean**
[c] Glaciers [d] Surface runoff
- 12) Natural disaster includes _____
[a] Train mishap [b] Deforestation
[c] Pollution [d] **Flood and cyclone**
- 13) Water conservation in Agriculture can be achieved through use of _____
[a] Conservation tillage [b] Drought tolerant crops
[c] Water efficient crops [d] **All of these**
- 14) Deforestation caused due to _____
[a] Over grazing [b] Forest Fires
[c] Urbanization [d] **All of these**
- 15) _____ has inverted pyramid of biomass
[a] Forest Ecosystem [b] Grassland Ecosystem
[c] **Aquatic Ecosystem** [d] Dessert Ecosystem

- 16) _____ is the Ex-situ technique of biodiversity conservation
[a] **Seed Bank** [b] National Park
[c] Wildlife Sanctuary [d] None of these
- 17) _____ is an example of terrestrial ecosystem
[a] Ocean and Lake [b] **Savannah and Tundra**
[c] Wetlands and Marshes [d] None of these
- 18) _____ group of crops are the food resources
[a] Pulses [b] Cereals
[c] Oil seeds [d] **All of these**
- 19) The World Food Day is observed on _____
[a] 21 November [b] 16 October
[c] 21 March [d] 16 December
- 20) _____ is a community of organisms having common characteristics.
[a] Cybernetics [b] Biosphere
[c] **Biome** [d] Tropic level
- 21) _____ is an example of non-metal mineral resources
[a] Copper [b] Gold
[c] Platinum [d] **Clay**
- 22) _____ is an example of perpetual kind of natural resource
[a] **Solar energy** [b] Fossil fuel
[c] Mineral [d] Human being
- 23) The indirect values of biodiversity includes _____
[a] Ethical values [b] Aesthetic values
[c] Cultural values [d] **All of these**
- 24) _____ are the group of predators usually not preyed in an ecosystem.
[a] Primary consumers [b] Secondary consumers
[c] Tertiary consumers [d] **Quaternary consumers**

Signature of the Course Teacher

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