

REV-01
MEV/01/05

2023/08

M.Sc. ENVIRONMENTAL Sc.
FIRST SEMESTER
FUNDAMENTALS OF ECOLOGY
MEV – 101 [SPECIAL REPEAT]
[USE OMR FOR OBJECTIVE PART]

**SET
A**

Duration : 3 hrs.

Full Marks : 70

Time : 30 min.

(Objective)

Marks : 20

Choose the correct answer from the following:

1X20=20

- Which of the following statement is not correct?
 - Assimilation ratio means the relation of total amount of chlorophyll to the rate of photosynthesis.
 - The intake amount of energy by a trophic level is also called as exploitation efficiency.
 - Influx is the difference between the amount of elements entering a reservoir and the amount leaving the reservoir.
 - None of the above.
- How much is the concentration of Argon in atmosphere?
 - 0.93%
 - 0.093%
 - 0.32%
 - 0.037%
- Who coined the term 'ecology'?
 - Ernst Haeckel, 1866
 - E.P. Odum, 1971
 - Taylor, 1936
 - Curtis, 1975
- Which of the following statement is not correct?
 - Concentration of water vapour is maximum near tropics
 - Concentration of water vapour decreases towards higher altitudes and latitudes
 - Water vapour can release latent energy
 - None of the above
- Temperature in the troposphere
 - Decreases with height
 - Rapidly increases with height
 - Slowly increases with height
 - Remain constant
- Which of the following statements best describes the function of decomposers?
 - They create new sources of oxygen and release free nitrogen
 - They release carbon from dead bodies in the form of carbon dioxide
 - They provide calcium for plants by taking it from the soil or water
 - They prevent the escape of energy to outer space
- Tropical Rain Forest (TRF), Agriculture (A), and Estuaries and Littoral (EL) are three different types of ecosystems. Identify the correct arrangement of these ecosystems as per Net Primary Productivity.
 - EL>TRF>A
 - TRF>A>EL
 - EL>A>TRF
 - TRF>EL>A

8. In a food chain, which trophic level would have the maximum amount of available energy?
- First
 - Second
 - Third
 - Fourth
9. Pick the odd one from the following
- Antibiosis
 - Mutualism
 - Commensalism
 - Protocooperation
10. A declining population is represented by which pyramid structure
- Upright
 - Urn-Shaped
 - Bell shaped
 - Inverted
11. The law of frequency as described by Raunkiaer's is given by
- $A=B>C>D>E$
 - $A>BC>D<E$
 - $A>C>=<D>=<E$
 - $A>B>C>=<D<E$
12. Which of the following index can be used to determine the similarity level of ecosystems
- Simpson
 - Pielou
 - Sorensen
 - Shannon
13. The role played by an organisms in its natural environment is called as
- Niche
 - Ecosystem
 - Biome
 - Habitat
14. The variations in Ecotypes is/are _____ in nature
- Flexibility
 - Permanent
 - Temporary
 - None of the above
15. The events calendar of flowering, fruiting, seedling etc. in a plant is known as
- Physiognomy
 - Phenology
 - Physiology
 - Philosophy
16. Which theory of evolution is purely based on the belief of Super power
- Theory of special creation
 - Theory of Spontaneous generation
 - Theory of Eternal life
 - All of the above
17. The type of Isolation in which the two organisms cannot meet as they live in two geographically different environment is known as
- Ethological isolation
 - Mechanical Isolation
 - Ecological Isolation
 - Zygotic Isolation
18. Appendix in human body is an examples of
- Homologous organ
 - Analogous organ
 - Vestigial organ
 - Symmetrical organ
19. Which theory of evolution s also known as "Chemical Theory"
- Cosmozoic Theory
 - Modern Theory
 - Theory of Special Creation
 - None of the above
20. Organs which are similar in structure but differ in functions are known as
- Homologous organ
 - Analogous organs
 - Vestigial Organs
 - Symmetrical organs

(Descriptive)

Time : 2 hrs. 30 mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is biogeochemical cycle? Discuss the nitrogen cycle in nature citing suitable example. Give diagrammatic representation of the nitrogen cycle. 2+6+2
=10
2. Describe the different Qualitative and Quantitative attributes of diversity analysis. 10
3. Describe the different Survivorship curves and age structure pyramids of population study. 5+5=10
4. What is Speciation and Isolation. Discuss in detail the different types of isolation that can be found in nature. 3+7=10
5. What is productivity? How Gross Primary Productivity and Net Primary Productivity is related? Discuss any two method of measurement of productivity in an ecosystem. 2+2+6
=10
6. a. What is a niche and a hyper-volume niche. 5+5=10
b. Describe the characteristics of a biotic community.
7. Discuss the structure and composition of atmosphere. Give suitable diagram in support of your answer. 10
8. What are the different theories of origin of life? Describe in details about the postulates and drawbacks or objections of any two theories that explain the origin of life on earth. 3+7=10

= = *** = =