REV-00 MEV/04/08

> M.Sc. ENVIRONMENTAL SCIENCE First Semester Environmental Biology (MEV-01)

**Duration: 3Hrs.** 

Full Marks: 70

Part-A (Objective) =20 Part-B (Descriptive)=50

(PART-B: Descriptive)

#### Duration: 2 hrs. 40 mins.

# Marks: 50

#### 1. Answer the following questions in brief (any five)

- *a)* What is population age structure? Mention different types of population age structures.
- b) What is Leaf Area Index?
- c) Distinguish between primary and secondary productivity.
- d) Why thermosphere is called as ionosphere?
- e) What is carrying capacity?
- f) What is ammonification?
- g) What are the different periods found in Mesozoic era?

#### 2. Answer the following questions (any five)

- a) What are the factors that affect primary productivity?
- b) Distinguish between ecad and ecotype with suitable example.
- c) What are the effects of temperature on living organism?
- d) How biosphere can be considered as cybernetic system?
- e) Differentiate between Mutualism and Ammensalism.
- f) Write the structure and function of ecosystem.
- g) Distinguish between Darwinism and Lamarckism.

### 2×5 =10

#### 3×5=15

2014/01

#### 3. Describe the following questions (any five)

- a) Write an explanatory note on structure and composition of atmosphere.
- b) What is biological spectrum? Explain with Raunkaier's different life forms.
- c) What is Net Primary Productivity? Explain any two methods of estimation of primary productivity.
- *d)* What is ecological succession? Describe the process of ecological succession either in terrestrial or aquatic ecosystem.

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- e) What is biogeochemical cycle? Describe the nitrogen cycle.
- f) Write a note on origin and evolution of angiosperms.

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## M.Sc. ENVIRONMENTAL SCIENCE First Semester Environmental Biology (MEV-01)

(The figures in the margin indicate full marks for the questions)

#### **Duration: 20 minutes**

### PART A- Objective Type

#### 1. Choose the appropriate answer from the following options:

- i) The sequence of events that occur in primary succession is
  - a) Nudation Colonisation Ecesis Aggregation
  - b) Aggregation Colonisation Ecesis Nudation
  - c) Ecesis Nudation Aggregation Colonisation
  - d) Nudation Ecesis Colonisation Aggregation

ii) The study of individual organism's relationship with its environment is called

- a) ecology b) synecology
- c) monoecology d) autecology
- iii) Highest level of biotic interaction is \_\_\_\_\_\_
  a)Mutualism b) Predation
  c) Parasitism d) Amensalism
- iv) Typical allergic symptoms caused by airborne allergens area) Coughingb) Watering eye
  - c) Conunctivitis
- v) The unit of light measurement is
  a) foot
  b) lux
  c) candle
  d) All
  - b) luxd) All the above

d) all the above

- vi) The term "Ecological Pyramid" was coined by a)Odum b) Tranlay c) Elton d) Hackle
- vii) Which of the following ecosystem has highest primary productivity?
  a)Pine forest
  b) Grassland
  c) Tropical Rain forest
  d) Temperate forest

 $1 \times 20 = 20$ 

viii) On earth organism can carry on	their life activities over a temperatur	re range extending	
a) 0° to 50° C	b) 0° to 32° C		
c) 40° to 50° C	d) below 40° C		
C) 40 10 50 C	d) below 40°C		
x) How much amount of solar radiation is used in photosynthesis?			
a) 2 % b) 1	0 % c) 8 %	d) 4 %	
x) The visible light ranges between			
a) 400 – 750 mµ	b) 390 – 560 mµ		
c) 400 – 860 mµ	d) none of above		
xi) Which of the following atmosphe	ric layer is significant for the flight	of jet planes and radio communications	
a) Mesosphere	b) Thermosphere		
c) Troposphere	d) Stratosphere		
(ii) The movement of animals in response to light is known as			
a) photokinesis	b) phototaxis		
c) both a & b	d) none of above		
iii) Most of the clouds and other weather systems occur in			
a) Troposphere	b) Mesosphere		
c) Thermosphere	d) Exosphere		
xiv) The total fresh water reserve of t	the earth is about		
a) 2.2 % b) 0.		d) 0.0001%	
xv) Which of the following is net cau	se of succession?		
a) Tropographic causes	b) Climatic causes	c) Biotic causes d) all the above	
xvi) Leaf size of a microphyll is			
a) $0 - 25 \text{ mm}^2$	b) $26 - 225 \text{ mm}^2$ c) $226$	$6 - 2015 \text{ mm}^2$ d) $2016 - 18,225 \text{ mm}^2$	
a) 0 23 mm	0)20 223 min C) 220	d) 2010 – 10,223 min	
xvii) Complete the following reaction	n involved in the N cycle Ammonia	$\rightarrow$ Nitrite $\rightarrow$ Nitrate $\rightarrow$ ?	1
a) N <sub>2</sub> b) N	$H_3$ c) NO <sub>2</sub>	d) NO <sub>3</sub>	
xviii) Jurassic period is found in which	ah ara		
	alcozoic era c) Caenozoic e	d) None of the above	
		d) None of the above	
xix) Which of the following is in pro-	per direction in a foodchain		
a) frog $\rightarrow$ grass $\rightarrow$ hawk $\rightarrow$ sn	ake $\rightarrow$ grasshopper		
b) grss $\rightarrow$ grasshopper $\rightarrow$ frog -			
c) grass $\rightarrow$ grasshopper $\rightarrow$ frog			
d) grass $\rightarrow$ grasshopper $\rightarrow$ haw	$K \rightarrow 110g \rightarrow 511aKe$		
xx) The capacity of nature to hold po	pulation at maximum is denoted by		
a) k b) d	c) n d) t		

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