

Total No. of printed pages = 5

63/2 (SEM-1) ZOO 101

2021

(held in 2022)

ZOOLOGY

(Theory Paper)

Paper Code : ZOO-101

(Ecology and Environmental Biology)

Full Marks – 80

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Choose the correct option from the following :
1×6=6

(a) Kyoto Protocol was signed among the Countries to reduce

- (i) CO_2 and other green house gas emissions
- (ii) NO_2 and other green house gas emissions
- (iii) SO_2 and other green house gas emissions
- (iv) NH_4 and other green house gas emissions

[Turn over

(b) In India, Wildlife (Protection) Act, came into being in which year?

- (i) 1981
(ii) 1971
(iii) 1972
(iv) 1986

(c) An area which is actively defended by an animal from an intruder of the same species is its

- (i) niche
(ii) home range
(iii) territory
(iv) habitat

(d) Individuals of a species which occur in a particular area constitute

- (i) Population
(ii) Fauna
(iii) Species
(iv) Flora

(e) Acid rain contains _____.

- (i) Hydrochloric and nitric acid
(ii) Sulphuric and nitric acid
(iii) Hydrochloric and sulphuric acid
(iv) Nitrate and carbonate

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(f) Which one of the following is not a functional unit of ecosystem?

- (i) Productivity
(ii) Energy flow
(iii) Stratification
(iv) Decomposition.

2. Answer the following short questions : $2 \times 5 = 10$

(a) What is thermal shock?

(b) What is sustainable development? Mention the three dimensions of sustainable development.
 $1+1=2$

(c) Differentiate between core area and buffer area in a biosphere reserve.
2

(d) Name the biodiversity hotspots in Indian Sub-continent.
2

(e) Differentiate between natality and mortality.
2

3. Answer any six of the following questions : $5 \times 6 = 30$

(a) What is ionizing radiation? How does it affect on human health?
 $2+3=5$

(b) What is photochemical smog? Mention the causes and effects of photochemical smog.
 $1+2+2=5$

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(c) What is EIA ? Mention the importance of EIA in environmental sustainability. $2+3=5$

(d) What are survivorship curves ? Explain different survivorship curves with suitable illustration. $1+4=5$

(e) Distinguish between endangered and critically endangered categories of IUCN. 5

(f) Briefly narrate the steps of autotrophic ecological succession. 5

(g) Briefly describe different components of biodiversity with suitable examples. 5

(h) Differentiate between flagship and keystone species with suitable examples from Northeast India. 5

(i) Differentiate between food chain and food web in a paddy field ecosystem. 5

4. Answer any *two* of the following questions :

$10 \times 2 = 20$

(a) What is water pollution ? Mention different sources and consequences of water pollution.

$2+8=10$

(b) What are two laws of thermodynamics ? Describe the process of energy flow in an ecosystem emphasizing the single channel energy flow model. $4+6=10$

(c) What criteria are required to declare a national park in India ? Name the national parks in Assam. Illustrate salient features of one of the national parks in Assam. $2+3+5=10$

5. Answer any *one* of the following questions :

$14 \times 1 = 14$

(a) What is conservation of wildlife ? What are the two basic aims of a conservationist ? Elucidate ex-situ and in-situ conservation with suitable examples in Northeast India.

$2+2+10=14$

(b) What is ecological niche ? Differentiate between niche and habitat. Discuss different types of ecological niches with suitable examples. Illustrate Gause's competitive exclusion principle. $2+2+6+4=14$

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