

[Time: 3 hours]

[Marks : 100]

Please check whether you have got the right question paper.

N.B: **1. All** questions are **compulsory**.

2. All questions carry **equal** marks.

3. Draw neat and labelled **diagrams** wherever **necessary**.

1. A) Fill in the blanks by choosing the correct option given in the bracket. 5

- a) Convex survivorship curve is observed in _____.
 1. elephant
 2. bird
 3. insect
- b) A group of individuals of the same age is referred to as a _____.
 1. cohort
 2. aggregate
 3. species
- c) Azadirachtin is found in various parts of _____ tree.
 1. Jamun
 2. mango
 3. neem
- d) Number of organism per unit area is _____ density.
 1. specific
 2. ecological
 3. crude
- e) India's oldest National park is _____.
 1. Keoladeo National Park
 2. Sanjay Gandhi Park
 3. Jim Corbett National Park

B) Match the column I and column II and rewrite. 5

Column I

Column II

- | | |
|-------------------------|------------------|
| a) Sigmoid growth curve | i) Butterflies |
| b) Stairstep curve | ii) Maharashtra |
| c) Photoautographs | iii) Gujrat |
| d) Tadoba | iv) Paramoecium |
| e) Gir | v) Cyanobacteria |

C) State whether true or false : 5

- a) Sex ratio is the number of females per 100 males in a population.
- b) Profundal zone is the deepest, dark zone of a pond.
- c) Cartagena protocol is an international agreement to ensure safe living modified organisms.
- d) Neem is known for its antidiabetic property.
- e) Obligate parasite can survive outside the body of the host.

D) Answer in **one** sentences only. 5

- a) Define fecundity
- b) Give full form of UNESCO
- c) Define saprophytes
- d) Define population density
- e) Give full form of GIS

2. A) Define survivorship growth curve. Explain convex and concave curves. 10

OR

Define population dispersal. Add a note on its distribution pattern. 10

- B) Answer **any two** of the following : 10

- a) Illustrate age distribution as pyramids.
- b) Describe concept of human census and its significance.
- c) Define mortality. Add a note on its types.
- d) Explain life tables and its uses.

3. A) Define ecosystem. Describe biotic components of an ecosystem. 10

OR

- A) Explain nitrogen cycle. 10

- B) Write short notes on **any two** of the following: 10

- a) Food web and its significance.
- b) Abiotic components of pond ecosystem.
- c) Pyramid of numbers.
- d) Predation and Antibiosis

4. Answer **any two** of the following : 20

- a) What is biopiracy? Add a note on biopiracy in India.
- b) Describe Gir National Park with two representative animal and species.
- c) Enlist and explain critically endangered vertebrates.
- d) Give an account on the habitat, flora and fauna of Jim Corbett National Park.

5. Write short notes on **any four** of the following : 20

- a) Natality
- b) Sigmoid growth pattern
- c) Lentic habitat
- d) Oxygen cycle
- e) Ecotourism
- f) Project Tiger