

Q1) A) Fill in the blanks

(5marks)

- a) Mantle
- b) Darwin's frog
- c) *Ex situ* conservation
- d) CITES
- e) Ornithology

Q1) B) Match the columns I and II and rewrite:

(5marks)

Column I

Column II

- | | |
|--------------------|----------------------------|
| a) Uttarakhand | iii) Corbett National park |
| b) BIOCON | iv) Kiran Muzumdar Shaw |
| c) Bioluminescence | i) <i>Noctiluca</i> |
| d) Surimi | v) Deepak Gadre |
| e) Marsupial | ii) Kangaroo |

Q1) C) State whether true or false.

(5marks)

- a) True
- b) False
- c) True
- d) True
- e) False

Q1) D) Answer the following in one sentence:

(5marks)

- a) Animals that produce eggs, but instead of laying them, develop these within the mother's body, and the young ones are directly born.
- b) The movement of animals between different longitudes from east to west or from west to east.
- c) It refers to the number and distribution of communities and ecosystems in a region.
- d) It is a method of preserving the genetic resource by keeping the germplasm under controlled temperature and humidity in cold storages.
- e) The full form of AMUL is Anand Milk Union Limited.

Q2) A) What is a Coral reef? Describe the types of Coral reefs.

Answer:

Brief introduction of corals and coral reefs.

(2 marks)

Description of types of coral reefs.

(6 marks)

Diagrams

(2 marks)

OR

Q2 A) Describe the adaptive features for desert life in *Phrynosoma* and Camel.

Answer:

Description of adaptive features in *Phrynosoma*.

(4 marks)

Description of adaptive features in Camel.

(6 marks)

Q2) B) Write note on any two.

i) Regeneration in Lizard.

Answer:

Description of Regeneration in lizard including autotomy, structural adaptation in autonomous tail, process of regeneration.

(5 marks)

ii) Mimicry in Great Eggfly and Common Crow.

Answer:

Brief description of Batesian mimicry.

(1 marks)

Description of resemblances and differences in Great Eggfly and Common Crow.

(4 marks)

iii) Breeding and parental care in Duck-billed Platypus.

Answer:

Description of nesting behaviour in Platypus

(2 mark)

Description of parental care in Platypus

(3 marks)

iv) Mechanism of bioluminescence.

Answer:

Brief description of bioluminescence

(1 marks)

Description of enzymatic reactions involved in bioluminescence .

(4 marks)

Q3) A) Describe Western Ghats as Biodiversity Hotspot.

Answer:

Brief introduction on the concept of biodiversity hotspot . (2 marks)

Description of the Western Ghat as a biodiversity hotspot including geographical location and mountain ranges in different states, water resources, world heritage sites and faunal diversity. (8 marks)

OR

Q3) A) Explain the direct uses of biodiversity.

Answer:

Brief description of biodiversity. (2 marks)

Description of direct use of biodiversity including consumptive and Productive use value. (8 marks)

Q3) B) Write short notes on any two.

i) *In situ* conservation.

Answer:

Description of *in-situ* conservation and its necessity. (2 marks)

Examples of *in situ* conservation in India, international organisation and methods involved. (3 marks)

ii) Threats to biodiversity.

Answer:

Brief introduction to the present status of global biodiversity. (2 marks)

Brief description on threats including poaching, deforestation, pollution, invasive species etc. (3 marks)

iii) Genetic diversity.

Answer:

Description on the concept of genetic diversity including definition and significance, traits and breeds. (5 marks)

iv) IUCN.

Answer:

Description of IUCN and its roles in global biodiversity conservation. (5 marks)

Q4) Answer any two.

a) Life sketch of Dr. Salim Ali.

Answer:

Description of Dr. Salim Ali's childhood, education, and his journey towards becoming an ornithologists. (10 marks)

b) Work and achievements of Dr. Varghese Kurian.

Answer:

Description of Dr. Kurian's journey of achieving his dream of billion litres of milk-AMUL, edible oil-DHARA, foundation of NDDB. (10 marks)

c) Work and achievements of Kiran Mazumdar Shaw.

Answer:

Description of Kiran Mazumdar Shaw's journey of establishing Biocon India, her determination to overcome the challenges to achieve her goals. (10 marks)

d) Life sketch of Dr. Hargobind Khorana.

Answer:

Description of Dr. Hargobind Khorana's childhood, education, and his journey towards deciphering the genetic code. (10 marks)

Q5) Write short notes on any four

a) Echolocation in dolphin.

Answer:

Description of anatomical features for production and reception of sound. (5 marks)

b) Brood parasitism in Cuckoo.

Answer:

Introduction and description of brood parasitism in Cuckoo. (4 marks)
Significance of brood parasitism. (1 mark)

c) Species biodiversity.

Answer:

Introduction to species biodiversity, including appropriate examples. (5 marks)

d) UNEP.

Answer:

Description of UNEP and its roles in implementing global environmental policies and practices. (5 mark)

e) Anandwan Project.

Answer:

Description on Anandwan Project including its founder, purpose and achievements. (5 marks)

f) Life sketch of Anna Hazare.

Answer:

Description of Anna Hazare's early life, his service in Indian military, and his inspiration for dedicating his life to serve people. (5 marks)
