1. LIVING WORLD

1.Choose the correct option

(1) Which is not a property of living being ?

(a) Metabolism

(b) Decay

(c) Growth

(d) Reproduction

(2) A particular plant is strictly seasonal plant. Which one of the following is best suited if it is to be studied in the laboratory ?

(a) Herbarium (b) Museum

(c) Botanical garden (d) Flower exhibition

(3) A group of students found two cockroaches in the classroom. They had a debate whether they are alive or dead. Which life property will help them to do so ?

(a) Metabolism (b) Growth

(c) Irritability (d) Reproduction

2. Distinguish between botanical gardens, zoological park and biodiversity park with reference to characteristics.

Botanicgl garden	Zoological park	Biodiversity park
1. In botanical gardens plants of different varieties collected from different parts of the world, are grown in a scientific and systematic way in a in vivo manner.	1. Animals are kept in captivity in the zoological parks, commonly called zoos.	1. In biodiversity park there is an ecological assemblage of species that form - selfsustaining communities on degraded/barren landscape.
2. They are of interest to researchers and botanists.	2.These places are for the interest of common man.	2. Biodiversity park is the area demarcated for education, training and research activities.

3. There is cultivation of plants of human choice.	3. There are no natural ecosystems in zoological park.	3. It may consists of more than 2 to 3 types of ecosystems, such as wetlands, terrestrial patch, etc.

3. Answer the following questions:

(A) Jijamata Udyan, the famous zoo in Mumbai has acclimatized Humboldt penguins. Why should penguins be acclimatized when kept at a place away from their natural habitat ?

Ans. Humboldt penguins are kept in temperature monitored chambers. Their food and habitat is maintained as per their natural habitat. This has made them acclimatized to the conditions of the zoo. If such care is not taken, penguins will not be able to survive in Mumbai's climate having higher temperatures and humidity. These conditions will cause death of penguins, hence they are acclimatized.

(B) Riya found peculiar plant on her visit to Himachal Pradesh. What are the ways she can show it to her biology teacher and get information about it ?

Ans. Riya can pluck the plant and take it to her teacher after preserving in the form of herbarium. But this is not advisable as it destroys local biodiversity. Hence she can click pictures of the plant and take it to her teacher. Also by keen observation, the detailed structure of the plant can be noted.

(C) At Andaman, authorities do not allow tourists to collect shells from beaches. Why it must be so ?

Ans. When tourists collect the shells from beaches, it causes loss of biodiversity. Some shells may contain animal inside. This should be therefore avoided. By impact of tourists the natural ecosystem is also disturbed. There may be illegal trade of the collected shells and specimens. Therefore, authorities do not allow tourists to do so.

(D) Why do we have greenhouse in botanical gardens ?

Ans. In a greenhouse, temperature, humidity and other conditions are closely monitored. This system is therefore useful for delicate varieties of plants for survival. The rare and cold acclimated plants are thus well preserved and cultivated in a greenhouse. Thus, there is a greenhouse in a botanical garden.

(E) What do you understand from terms like in-situ and ex-situ conservation ?

Ans. (1) Conserving biodiversity in its natural environment is the base of in-situ conservation.Setting up National Parks, Wildlife sanctuaries are some of the important measures of in-situ conservation.

(2) Joint forest management, wetland conservation, etc. also are the ways of in-situ conservation.

(3) Ex-situ conservation is done in laboratories, gardens, etc. for the species which are under threat of extinction.

(4) Botanical gardens and zoos are the main attempts for ex-situ conservation.

(5) Ex-situ conservation is also done by setting up a gene bank in which the genetic material of wild varieties of crops and other plants as well as animals is stored in special designed cold rooms and high-tech laboratories.

(6) Captive breeding and species reintroduction are also ways of ex-situ conservation.

4. Write short notes :

(A) Role of human being in biodiversity conservation :

Ans. Nature has created millions of species and diverse life forms. It is the duty of human beings to protect and conserve the biodiversity. For thousands of years, human communities have conserved biodiversity by following practices :

(1) Sacred natural sites and species.

(2) Traditional management practices, such as monsoon ban on fishing, restriction of grazing lands.

(3) Community seed banks as seen in Garhwal, Uttarakhand by having Beej Bachao Andolan.

(4) In modern times, environmentalists have started many measures to conserve the biodiversity. e.g. Ex-situ and in-situ conservation, gene banks, captive breeding, etc.

(5) Governments of various countries have also enacted different environmental laws and acts whereby the biodiversity is conserved.

(B) Importance of botanical garden :

Ans. (1) Local flora is recorded in the botanical gardens.

(2) There is collection of monographic works.

(3) Living plant material and preserved specimens which are needed for studies and research are kept in collection here.

(4) Seeds and plants can be supplied from botanical gardens.

(5) Greenhouse is maintained for the cultivation of rare and uncommon plants.

(6) There is research laboratory associated with some of the botanical gardens.

5. How can you, as an individual, prevent the loss of biodiversity ?
Ans. (1) As an individual, flora and fauna have to be protected by each person.

(2) An illegal trade of the animal parts should not be encouraged. The goods made from skin, horns or ivory should never be bought.

(3) Tree felling or cutting down of the trees should never be done. A single huge tree supports many varieties of insects, birds and small mammals like squirrels or monkeys. Therefore, in order to prevent biodiversity loss, the trees should be protected

(4) The lakes, rivers or sea should not be treated as a sewer. The polluted materials should not be added to any of these water bodies. This may result into death of many resident organisms.

(5) By forming group of nature lovers, such as nature clubs, more observations of biodiversity should be done and general public should be made aware about importance of biodiversity.