P. P. SAVANI UNIVERSITY

Third Semester of B.Sc. Examination

December-2021

SSES2130/SSBT2190– Biodiversity and Conservation

13.12.2021, Monday Time: 09:00 a.m. to 11:30 a.m. Maximum Marks: 60

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

Section-I (Total Marks - 30)

Q.1 Short Questions [10]

1.1 Objectives [05]

1.1a Alpha diversity is biodiversity present

A Within community
B Between community
C Ranges of communities
D All of these.

1.1b Which one of the following is not observed in biodiversity hotspots?

A Lesser inter-specific competition
B Species richness
C Endemism
D Accelerated species loss

1.1c The species which occupy new territory, often supplanting native species by occupying their niches, are called

A Invasive species
B Extinct species
C Endangered species
D Exotic species

1.1d The no. of species in a specific area in given time is known as

A Species domination
B Species richness
C Species evenness
D Species ecosystem domination

1.1e Who is known as the father of tissue culture ?

A Bonner
B Laibach
C Haberlandt
D Gautheret

1.1f Rate of replacement of species along a gradient of habitats/communities is called

A Alpha diversity
B Beta diversity
C Gamma diversity

D None of these

1.1g **What are the major carbon sinks ?**
- A Forests
- B Atmosphere
- C Biosphere
- D Animals

1.1h **Which fruit is scientifically referred to as 'Hylocereusundatus' ?**
- A Dragon fruit
- B Pear
- C Kiwi
- D Litchi

1.1i **A place is similar to sanctuary, except cattle grazing is prohibited ?**
- A Biodiversity hotspot
- B National park
- C Zoological park
- D Forest

1.1j **The most important reason for biodiversity loss in today's age is**
- A Overexploitation
- B Coextinction
- C Alien and species invasion
- D Fragmentation and habitat loss

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) **[05]**

1.2a _____ is an example of ex-situ conservation.

1.2b Biomass yield is the fresh or dry weight of vegetation per unit area. (True/False)

1.2c A species facing an extremely high risk of extinction in the wild are ____.

1.2d First Red data book was published on _____ .

1.2e Remote sensors are used to take and record data of the environment. (True /False)

Q.2 Short Notes (Attempt any two) **[06]**

A What are elevation trends and temporal patterns in biodiversity ?

B Difference between natural and anthropogenic threats to biodiversity ?

C Define joint forest management.

Q.3 Explain in detail (Attempt any two) **[14]**

A What are the alpha , beta , gamma diversity and illustrate them .

B Illustrate ecological restoration and advantage and disadvantages of agroforestry and social -forestry?

C What is the importance of biodiversity patterns in conservation?

Section-II (Total Marks - 30)

Q.1 Short Questions **[10]**

1.1 Objectives **[05]**

1.1a Common characteristics of invasive species does not include
- A Rapid reproduction
- B Rapid growth
- C Low dispersal ability

D Phenotypic plasticity

1.1b The sudden introduction of invasive species to a given ecosystem causes disastrous consequences for

A Introduced species
B Exotic species
C Native species
D Non-native species

1.1c Overexploitation of a particular species reduces the size of its population to an extent that it becomes _____ to extinction.

A Vulnerable
B Threatened
C Endangered
D All of the above

1.1d No human activity is permitted inside the national park except for the ones permitted by the Chief Wildlife Warden of the state under the conditions given in _____ of WPA 1972.

A Chapter IV
B Chapter II
C Chapter VI
D Chapter I

1.1e Gene banks exist to conserve the _____of wild and domesticated organisms.

A Species diversity
B Genetic diversity
C Both a and b
D None of the above

1.1f The seed bank preserves dried seeds by storing them at

A Very low temperature
B Low temperature
C High temperature
D Very high temperature

1.1g Planting of trees happens with a sapling from nurseries directly using the seeds in the artificial process of

A Afforestation
B Reforestation,
C Natural regeneration
D None of the above

1.1h Which taxon does not qualify for critically endangered, endangered, vulnerable when it has been evaluated against the criteria ?

A Widespread
B Abundant
C Least Concern
D Near Threatened

1.1i For which species red data book symbolizes a warning signal?

A Critically Endangered
B Endangered
C Vulnerable
D Threatened

1.1j To qualify as a hotspot a region must contain at least 1,500 species of vascular plants as
A Endemics
B Native
C Local
D Both B and C

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) **[05]**

1.2a If the number of individuals within a species is fairly constant across communities, it is said to have a low evenness. (True/False)

1.2b Fragmentation makes it easy for species to move within a habitat, and poses a major challenge for species requiring large tracts of land. (True/False)

1.2c Climate change does not alter the climate patterns and ecosystems in which species have evolved and on which they depend. (True/False)

1.2d Global warming leads to a loss in _____ since animals and plants are usually quite sensitive to changes in their natural living conditions.

1.2e To qualify as a hotspot a region must contain at least 1,400 species of vascular plants as native. (True/False)

Q.2 Short Notes (Attempt any two) **[06]**

A What is the impact of climate change and invasive species introduction on biodiversity?
B What is role and value of traditional knowledge in biodiversity conservation?
C What effect do overexploitation and pollution have on biodiversity?

Q.3 Explain in detail (Attempt any two) **[14]**

A Describe structure and function of biosphere reserve.
B Explain intermediate disturbance hypothesis with diagram.
C Explain biodiversity conservation strategies.