KATHMANDU UNIVERSITY
End Semester Examination [C]
November/December, 2023

Marks Scored:

Level : B.Sc.
Year : II
Course : ENVS 202
Semester : II

Exam Roll No. :
Time: 30 mins.
F. M. : 20

Registration No.:
Date : 03 DEC 2023

SECTION "A"
[17 Q. × 0.5 = 8.5 marks]

Choose and mark [X] the most appropriate option.

1. Kailash Sacred Landscape is in
[ ] Nepal, India and Bhutan
[ ] Nepal, India and Pakistan
[ ] Nepal, India and China
[ ] Nepal, China and Bhutan

2. Habitat corridors maintain genetic diversity by
[ ] promoting gene flow
[ ] allowing evolutionary forces to act independently
[ ] increasing edge effect
[ ] increasing inbreeding

3. Cryopreservation entails preservation in
[ ] low pressure
[ ] high temperatures
[ ] high pressure
[ ] low temperatures

4. Allee effect is observed in
[ ] small populations
[ ] large populations
[ ] small-sized species
[ ] large-sized species

5. The minimum population size with 95% probability of persistence for 100 or 1,000 years is referred to as
[ ] effective population
[ ] minimum viable population
[ ] population density
[ ] sex ratio

6. Which of the following is **INCORRECT** about Taq Polymerase?
[ ] It is used in PCR.
[ ] It is thermos-tolerant.
[ ] It is a molecular marker.
[ ] It is bacterial in origin.

7. *Ailuropoda melanoleuca* as the WWF logo serves as a/an
[ ] keystone species
[ ] indicator species
[ ] umbrella species
[ ] flagship species

8. The source of DNA in scat is
[ ] oral epithelial cells
[ ] rectal epithelial cells
[ ] hair follicles
[ ] saliva

9. Which of the following is appropriate for pangolin study?
[ ] Aerial survey [ ] Burrow survey [ ] footprint survey [ ] scat survey

10. Protected Areas in Nepal come under the legal jurisdiction of the
[ ] UNEP [ ] UNESCO [ ] DNPWC [ ] WWF

11. The first ever climate-smart snow leopard landscape management plan was developed by
[ ] Nepal [ ] India [ ] Pakistan [ ] Bhutan

12. Which of the following is appropriate for recording population/herd structure?
[ ] quadrat method [ ] walked transect
[ ] point count [ ] water hole count

13. Based on IUCN categorization, natural monuments or features fall under category
[ ] I [ ] II [ ] III [ ] IV

14. Releasing individuals into an ecologically suitable site within their historical range where the species no longer occurs is called
[ ] introduction [ ] re-introduction
[ ] re-stocking [ ] captive breeding

15. Article 1 of the CBD covers the
[ ] in-situ conservation [ ] ex-situ conservation
[ ] objectives of the CBD [ ] official languages of the CBD

16. Which of the following is **INCORRECT** about the protected areas of Nepal?
[ ] The country has 20 PAs.
[ ] PAs cover about 25 % of the total area of the country.
[ ] There is only one hunting reserve in the country.
[ ] All the PAs are in the Terai region.

17. Which of the following illustrates ex-situ conservation
[ ] National Park [ ] wildlife reserve
[ ] protected seascape [ ] seed banks

SECTION "B"
[3Q × 0.5 = 1.5 marks]

Consider the equation: $N_e = (4*NM * NF)/(NM + NF)$ and answer the following.

18. The equation is used to calculate
[ ] minimum viable population [ ] effective population size
[ ] sex ratio [ ] population density

19. N_e stands for
[ ] minimum viable population [ ] effective population size
[ ] sex ratio [ ] population density

20. NM and NF respectively stand for
[ ] non-mixing and non-fertile members
[ ] number of males and number of females
[ ] non-mating and non-fertile members
[ ] non-migrating and non-fertile members

SECTION "C"
[10 marks]

Fill in the blanks:

21. Three categories of animal translocations are _____, _____and _____.

22. Cryopreservation entails preservation in _____.

23. Living taxa as categorized by the IUCN are referred to as _____.

24. The full form of IUCN is _____.

25. The full form of VNTRs is _____.

26. _____ is defined as spatially heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout.

27. _____ is the only Protected Area in Nepal where hunting is allowed.

28. Wildlife values associated with mastery and control of animals is referred to as _____ value.

29. Mating between closely related individuals is called _____.

30. 'Chimeki Chara' App in Nepal was initiated by _____.

31. _____ is the largest National Park in Nepal.

32. The chemical name of adenine is _____.

33. The number of species on an island represents a balance between _____ and _____.

34. Tandem repeats of short nucleotide sequences found across the prokaryotic and eukaryotic genomes are called _____.

35. The biggest one-horned rhinoceros population in Nepal is in _____.

36. _____ nets are used for bat capture.

37. Operation oryx was started to conserve _____.

KATHMANDU UNIVERSITY
End Semester Examination [C]
November/December, 2023

03 DEC 2023

Level : B.Sc.
Year : II
Time : 2 hrs. 30 mins.

Course : ENVS 202
Semester : II
F. M. : 55

SECTION "D"
[3 Q. × 7 = 21 marks]

Attempt *ANY THREE* questions.

1. Define metapopulation and its significance. Give an account of different types of metapopulation. [2+5]

2. Describe the principles of a protected area design based on island biogeography theory.

3. Define wildlife corridors. Give and account of at least three wildlife corridors in Terai Arc Landscape. [1+6]

4. Explain how habitat degradation threatens biodiversity citing appropriate examples.

SECTION "E"
[34 marks]

5. Differentiate between (*ANY FOUR*) [4Q × 2 = 8]
   a. Data deficient and least concerned IUCN taxa
   b. Canid and felid pugmarks
   c. Petersen method and Schnabel method of CMR
   d. Flagship species and umbrella species
   e. *ex-situ* and *in-situ* conservation

6. Give an account of : [4Q × 4 =16]
   a. Community forests in Nepal
   b. Citizen science
   c. Protected Area categories in Nepal
   d. Walked transect

7. Give reasons for the following statements: [5Q × 2 =10]
   a. in-situ and ex-situ conservation measures are complementary.
   b. Small populations are prone to extinction.
   c. Monitoring population is crucial in conservation.
   d. Thermo-tolerant DNA Polymerase is used in PCR
   e. Population Viability Analysis (PVA) should be species specific.