

KATHMANDU UNIVERSITY  
End Semester Examination  
February/March, 2019

Marks Scored:

Level : B.Sc.

Course : ENV5 328

Year : III

Semester: I

Exam Roll No.:

Time: 30 mins.

F.M. : 20

Registration No.:

Date FEB 27 2019

SECTION "A"

[16 Q. × 0.5 = 8 marks]

Choose and mark (X) against the correct answer:

- The Year of International Biodiversity was  
 1992 AD  2002 AD  
 2010AD  2012 AD
- Which of the following is wrong about Conservation Biology?  
 It is a crisis oriented discipline  It is a multi-disciplinary science  
 It is a mission-oriented discipline  It is a pure science
- Values associated with species as sources of material benefit or use are  
 aesthetic value  utilitarian value  
 theistic value  ecologicistic value
- Which of the following is the underlying foundation of higher levels of biodiversity?  
 genetic diversity  species diversity  
 ecosystem diversity  landscape diversity
- The basic unit of conservation is/are  
 individuals  population  
 community  species
- Which of the following is incorrect about micro-satellites?  
 These are small DNA stretches of 1-4 nucleotide base pairs.  
 These are small proteins of 20 amino acid residue.  
 They form tandem repeats in Eukaryotic genome  
 They are widely used as molecular markers
- The dominant prey species for tigers at Bardiya National Park is  
 *Axis axis*  *Antelope cervicapra*  
 *Bos gauras*  *Sus scrofa*
- Which of the following has the highest density of tiger prey species?  
 Bardiya National Park  Chitwan National Park  
 Parsa National Park  Banke National Park
- Which of the following illustrates in-situ conservation strategy?  
 National Parks  captive breeding  
 Seed Banks  Zoos

10. Which of the following is correct about aerial survey of animals?
- Aerial survey is useful for megafauna survey in forests.
  - Aerial survey is useful for megafauna survey in open grasslands.
  - Aerial survey is useful for bird survey
  - Aerial survey is relatively cheaper than other surveys
11. CPUE is used to estimate
- elephant abundance
  - tiger abundance
  - fish abundance
  - rhino abundance
12. Which of the following is wrong?
- Metapopulations are always at a risk of extinction.
  - Metapopulations are always completely isolated.
  - Metapopulations are not at equilibrium.
  - Metapopulations are important components of Conservation Biology.
13. Sample estimate is calculated by
- $\hat{Y} = \bar{y} * N$
  - $\bar{y} = \hat{Y} * N$
  - $\bar{y} = \hat{Y} / N$
  - $\hat{Y} = \bar{y} / N$
14. *Ailuropoda melanoleuca* as the WWF logo serves as a/an
- keystone species
  - umbrella species
  - flagship species
  - indicator species
15. Which of the following sequence best depicts paradigm shift in conservation?
- nature for itself, nature despite people, nature for people, people and nature
  - nature for itself, nature for people, people and nature, nature despite people
  - people and nature, nature despite people, nature for people, nature for itself
  - nature despite people, nature for itself, nature for people, people and nature
16. National Parks belong to IUCN Protected Area category
- I
  - II
  - III
  - IV

SECTION "B"

[4 Q. × 0.5 = 2 marks]

Consider the following equation:  $N_t = \lambda N_{t-1}$  and answer the following.

17.  $\lambda$  denotes \_\_\_\_\_.
18.  $\lambda$  in a stable population will be
- $< 1$
  - $> 1$
  - equal to 1
19.  $\lambda$  in an expanding population will be
- $< 1$
  - $> 1$
  - equal to 1
20.  $\lambda$  in a shrinking population will be
- $< 1$
  - $> 1$
  - equal to 1

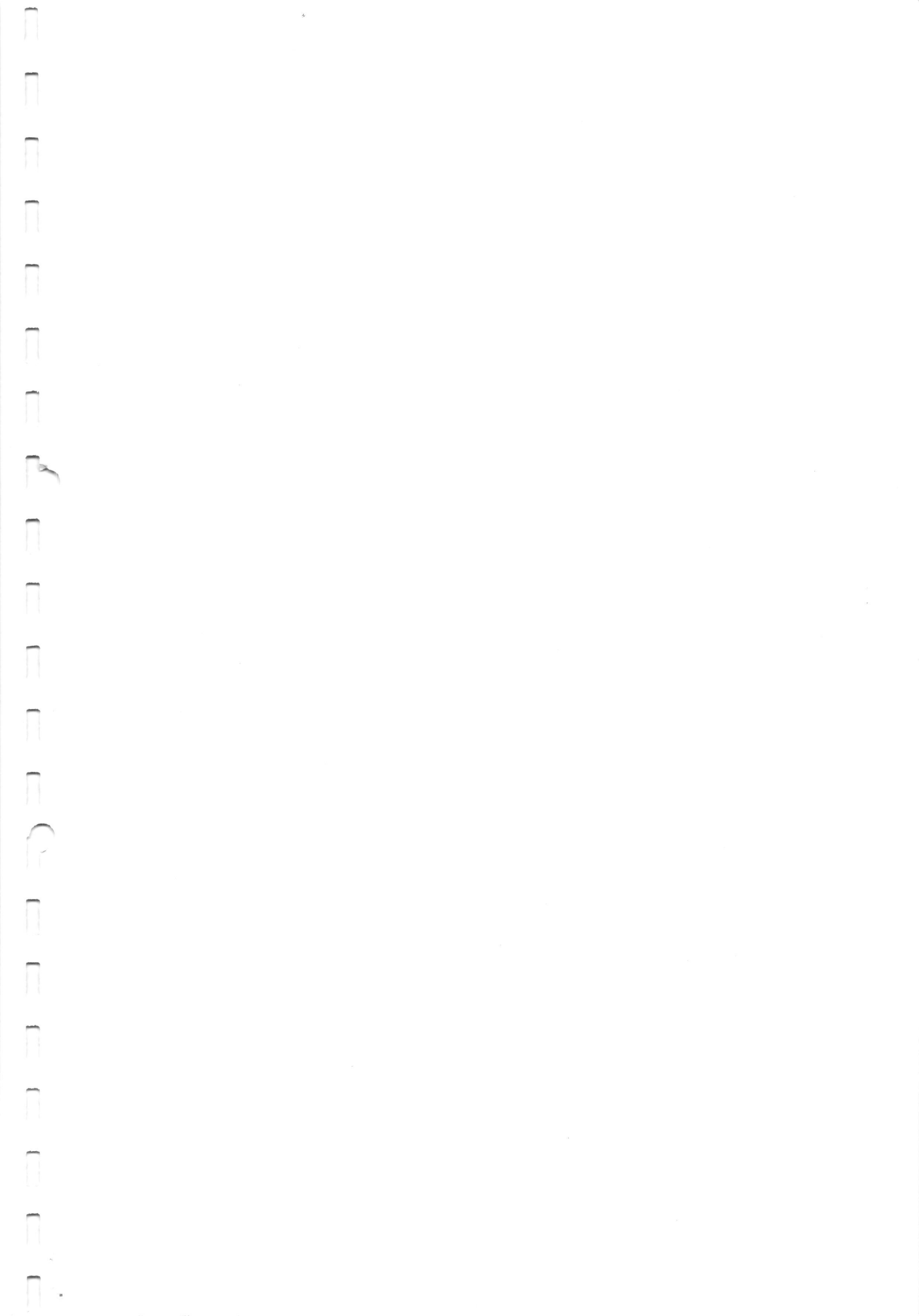
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SECTION "C"

[10 marks]

Fill in the blanks.

1. The source of DNA in scat is \_\_\_\_\_.
2. Preservation of biological materials in extremely low temperature is called \_\_\_\_\_.
3. The entire area where census needs to be conducted is called \_\_\_\_\_.
4. IUCN threatened categories include \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.
5. The different zones in a Biosphere Reserves are \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
6. Pollard transects are used in \_\_\_\_\_ survey.
7. \_\_\_\_\_ are used to capture birds and bats.
8. The main source metapopulation which supplies immigrants to satellite populations are also referred to as \_\_\_\_\_.
9. Unwanted species caught during commercial fishing are called \_\_\_\_\_.
10. Species chosen strategically to raise support for biodiversity conservation in a specific context are called \_\_\_\_\_.
11. Forested area connecting to a larger area, serving as passageways and as alternative habitat are referred to as \_\_\_\_\_.
12. The full form of IBA is \_\_\_\_\_.
13. Human mediated movement of organisms from one area and release in another is called \_\_\_\_\_.
14. Equilibrium Theory of Island Biogeography states that the total number of species in an island represents a balance between \_\_\_\_\_ and \_\_\_\_\_.
15. Krishnasar Conservation Area in Nepal was established to conserve \_\_\_\_\_.



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Semester: I  
F.M. : 55

SECTION "D"

[3 Q. × 7 = 21 marks]

Attempt *ANY THREE* questions.

1. Define metapopulations. Give an account of different types of metapopulations. Add a note on the significance of metapopulations in conservation.
2. What do you mean by indirect census? Describe pellet count method for estimation of prey-base density.
3. What are the different criteria for prioritization in conservation? Give an account of any two methods of conservation prioritization with suitable examples.
4. Define MVPs. Give an account of the implications of failure to retain MVPs.

SECTION "E"

5. Differentiate between (*ANY FOUR*) [4Q. × 2 = 8]
  - a. II and III category protected area categories
  - b. Petersen method and Schnabel method
  - c. Felid pugmark and canid pugmark
  - d. Flagship species and umbrella species
  - e. Use value and option value of biodiversity
6. Give an account of: [4Q. × 4 = 16]
  - a. Allee effect
  - b. Applications of conservation genetics
  - c. Role of TAL in megafauna conservation
  - d. Multi-disciplinarily nature of Conservation Biology
7. Give reasons for the following statements: [5Q. × 2 = 10]
  - a. Quadrat sampling is performed for slow moving animals.
  - b. In-situ and ex-situ conservation complement each other.
  - c. PVA is a species-specific method.
  - d. Thermo-tolerant DNA Polymerase is used in PCR
  - e. Protected areas need to be large.

