



Total Pages : 5

B.Sc./6th Sem/ZOO/26(NEP)

2026

6th Semester Examination (CCFUP : NEP)

ZOOLOGY

Paper : MDSE 2-T

(Single Core Major Elective-2)

Full Marks : 40

Time : Two Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

(Microbiology)

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. What is the germ theory of disease?
2. Define prions and explain why are they considered "proteinaceous infectious particles."
3. Differentiate between simple media and complex media with example.
4. What do you mean by F^+ and F^- strain in conjugation?
5. State the differences between Gram-positive and Gram-negative bacteria.

P.T.O.

(2)

6. What is pandemic disease? Give an example.
7. What is Ghon complex?
8. State the mechanism of action of beta-lactam antibiotics.

Group - B

Answer any **four** questions : $5 \times 4 = 20$

9. Comment on the structure and function of peptidoglycans.
10. Define sterilization. Classify various methods of sterilization with suitable examples. $2+3$
11. Explain the factors that influences bacterial growth. 5
12. Explain the three-domain system of classification proposed by Carl Woese, highlighting its significance over earlier systems. 5
13. Differentiate between exotoxins and endotoxins. Write the mode of action of cholera toxin with a proper diagram. $2+3$
14. Differentiate between obligate aerobes, obligate anaerobes, and facultative anaerobes. Describe the importance of acid-fast staining in identifying pathogenic bacteria. $3+2$

(3)

Group - C

Answer any **one** question : $10 \times 1 = 10$

15. Illustrate the structure of Human Immunodeficiency Virus.
How the virus invades a CD4+ T cell? Comment on the
anti-retroviral therapy in the treatment of AIDS. $4+4+2$

16. Write short notes on : 2.5×4

- (a) Plasmid and episome
 - (b) Poliovirus infection
 - (c) Selective media and Enriched media
 - (d) Specialized transduction
-

P.T.O.

(4)

OR

(Animal Behaviour and Chronobiology)

Group - A

Answer any *five* questions : $2 \times 5 = 10$

1. What is imprinting?
2. What is stereotyped behaviour?
3. What is reciprocal altruism?
4. What is communication?
5. What do you mean by bioluminescence?
6. What is Hamilton's rule?
7. What do you mean by social behaviour?
8. Define egocentric behaviour.

Group - B

Answer any *four* questions : $5 \times 4 = 20$

9. What do you mean about filial and sexual imprinting?
Mention their features.
10. Distinguish between innate and learned behaviour. Define FAP. $3+2$
11. Describe the Runaway sexual selection hypothesis.

(5)

12. Distinguish between (a) tactile and auditory communication, and (b) assortative and non-assortative learning. $2\frac{1}{2} \times 2$
13. What do you mean about biological clock? Describe the process and significance of biological clock. $1+2+2$
14. Briefly discuss the evolutionary significance of Altruism. Why kin selection is essential for altruism? Calculate the coefficient of relatedness between grandparents and grandchildren. $2+1+2$

Group - C

Answer any *one* question : $10 \times 1 = 10$

15. Describe the advantages of group living. Add a note on territoriality and social dominance. $4+4+2$
16. Add a note on social grooming in monkey. Describe the modes and adaptive values of communication. $4+3+3$
-