DECEMBER ,2025

INVERTEBRATES: PROTISTA TO ECHINODERMATA

Time -3 hours Full Marks-100

Figures in the right-hand side of the margin indicate marks
Give illustrated diagrams wherever required

PART- I

1. **Answer all questions.** **10x1=10**

a) The larva of Obelia is _____.
b) Symbiotic algae in corals are called _____.
c) The body wall of nematodes is covered by _____.
d) Microfilariae show _____ periodicity.
e) Flukes are placed under class _____.
f) Termites digest cellulose with help of _____.
g) True metamerism is well developed in _____ group.
h) Leeches belong to class _____.
i) The mantle cavity of mollusc functions as a _____ organ.
j) The larva of Holothuroidea are _____.

PART – II

2. **Answer all questions within maximum 50 words each:** **9x2=18**

a) What is mixotrophic nutrition? Give an example.
b) Write two differences between polyp and medusa?
c) What is haemozoin?
d) What is nocturnal periodicity?
e) What is flame cell?
f) Write the types of nephridia?
g) What is hemolymph?
h) What is radula?
i) Why are echinoderms called deuterostomes?

PART -III

3. Answer any eight questions within 250 words each. **8x5=40**

a. Explain metagenesis with an example?
b. Write notes on planula larva?
c. Describe spicules in sponges and their functions?
d. Write notes on microfilariae?
e. Describe host–parasite relationship?
f. Describe the threats to the coral reefs.
g. Explain metamorphosis in insects?
h. Describe caste system in termites?
i. Describe about trochophore larva?
j. Describe economic importance of echinoderms?

PART-IV

4. **Answer any four questions within maximum 800 words each.** **4x8=32**

a) Describe the complete life cycle of *Plasmodium vivax* with a neat labeled diagram.
b) Discuss the evolutionary significance of Ctenophora.
c) Describe the Structure and life cycle of *Fasciola hepatica* with a neat labeled diagram.
d) Explain social organization and caste system in honey bees.
e) Explain the water-vascular system of echinoderms with a neat diagram.

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+3 SEM-I (NEP)
ZOO-C1-P2(R&B) MAJ

DECEMBER, 2025

DIVERSITY OF CHORDATES: PROTOCHORDATES TO MAMMALIA

Time 3 hours FM – 100

Figures in the right-hand side of the margin indicate marks
Give illustrated diagrams wherever required

PART-I

Q1. Answer all questions **10x1 = 10**

a. The notochord lies ……to the nerve cord.
b. *Herdmania* shows ……. metamorphosis.
c. What is Pangaea?
d. Prototherians are oviparous. True/ False
e. What is fang?.
f. Cleavage in Amphioxous is ……..type
g. Jawed fishes are grouped under …….
h. Limbless amphibians are termed……..
i. *Hilsa* exhibits ……. migration
j. ……is the connecting link between reptiles and birds.

PART-II

Q2. Answer all questions within maximum 50 words each. **9x2= 18**

a. Buccal diverticulum
b. Protonephridia
c. Cyclostome
d. Neoteny
e. Living fossil
f. Pectoralis major
g. Palaearctic region
h. Gondwana land
i. Prehensile tail

PART-III

Q3. Answer any EIGHT questions within 250 words each. **8x5= 40**

a. Adaptive radiation
b. Factors affecting dispersal in animals
c. Reptilian affinities of prototheria
d. Justify birds as glorified reptiles
e. Composition and types of snake venom
f. Parental care in urodeles
g. Devonian fishes
h. Swim bladder in fishes
i. Factors affecting fish migration
j. Chordate features of *Amphioxous*

PART- IV

Q4. Answer any four questions within 800 words each. **4x8= 32**

a. Discuss the origin of chordates from Echinoderms.
b. Explain parental care in Amphibians with suitable examples
c. Describe the different types of fish migration and discuss its advantages.
d. Discuss the morphological adaptation for flight in birds.
e. Give an account of the different types of fauna seen in different Zoogeographical realms.

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+3 SEM-1 (NEP)
ZOO-MDC-1(R&B)

December, 2025

VECTOR BORNE DISEASES AND EPIDEMIOLOGY

Time- 3 Hours Full Marks-100

Answer as per instructions
Figures in the righthand margin indicates marks

Part-1 - Answer in MCO /One word/ One Sentence (All are Compulsory) 10x1=10

1. Which of the following is the excretory organ of insects?
   A. Malpighian tubules B. Nephridia C. Flame cells D. Green glands
2. Transmission of pathogens through mechanical transfer without development in the vector is called:
   A. Biological transmission B. Mechanical transmission
   C. Transovarial transmission D. Transstadial transmission
3. Which mouthpart of insects is adapted for piercing and sucking?
   A. Mandibulate B. Sponging C. Piercing–sucking D. Chewing–lapping
4. The vector of malaria is:
   A. Culex mosquito B. Aedes mosquito C. Anopheles mosquito D. Sandfly
5. Kala-azar (Visceral leishmaniasis) is transmitted by:
   A. Mosquito B. Housefly C. Sandfly D. Tsetse fly
6. Filariasis is mainly transmitted by:
   A. Anopheles B. Culex C. Aedes D. Sandfly
7. Epidemiology is the study of:
   A. Treatment of diseases B. Distribution and determinants of health-related events
   C. Clinical diagnosis of disease D. Drug development
8. Which of the following studies linked smoking with lung cancer?
   A. Framingham Heart Study B. British Doctors' Study
   C. Nurses' Health Study D. Cohort study
9. Which epidemiological method compares diseased and non-diseased individuals?
   A. Cohort study B. Case-control study
   C. Cross-sectional study D. Experimental study
10. Diseases that can be transmitted from person to person are called:
    A. Non-communicable diseases B. Degenerative diseases
    C. Communicable diseases D. Genetic diseases

Part-II -Answer in maximum 50 words (All are Compulsory) **9x2=18**

1. Define the general characteristics of insects.
2. Write a short note on mechanical vector.
3. Write a short note on insect mouthparts related to disease transmission.

4. Mention four diseases transmitted by sandflies and name its causative organism.
5. Define the concept of health and disease.
6. Define incubation period and latency period.
7. What are communicable diseases? Give two examples.
8. Define incubation period in infectious diseases.
9. Write a short note on the Bradford Hill criteria of causation.

Part-III – Answer in maximum 250 words (Answer **any 8** out of 10 questions) **8x5= 40**

1. Describe the general body organization of insects with reference to head, thorax and abdomen.
2. Explain the concept of vectors and classify insect vectors based on their mode of transmission.
3. Explain the transmission, symptoms and control of Visceral Leishmaniasis.
4. Write an account of sandflies as vectors of kala-azar.
5. Explain the transmission, symptoms and control of Dengue.
6. Explain different epidemiological methods used for the study of diseases.
7. Describe the British Doctors' study and its significance in epidemiology.
8. Classify diseases and explain different modes of disease transmission.
9. Describe the stages of disease development with special reference to incubation period.
10. Explain Bradford Hill criteria for establishing causal relationship between exposure and disease.

Part-IV – Answer in maximum 800 words (Answer **any 4** out of 5 Questions) **4x8= 32**

1. Give a detailed account of adaptations in mosquito as a vector of human diseases.
2. Describe the role of Anopheles, Culex and Aedes mosquitoes in the transmission of malaria, filariasis and dengue respectively.
3. Describe in brief about the house fly as important mechanical vector and add a note on the diseases transmitted by this vector in human being.
4. Define epidemiology and discuss its scope, objectives and importance.
5. Discuss in brief about communicable and non-communicable diseases, its control and management with reference to public health.

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+3 SEM-I (NEP)
ZOO-C2-P1 (R&B) MIN

DECEMBER, 2025

Invertebrates: Protista to Echinodermata

Time - 3 hours Full Marks-100

Figures in the right-hand side of margin indicates marks
Give illustrated diagrams wherever required

PART- I

1. **Answer all the questions:** **10x1=10**

a) Sporozoites migrate to the _____ after entering man.

b) Coral skeleton is composed of _____.

c) The disease caused by *Ascaris* is _____.

d) Scolex of *Taenia* bears _____ numbers of suckers.

e) Tapeworms belong to class _____.

f) The earliest metazoans with true coelom are _____.

g) Workers and soldiers of bees are _____ individuals.

h) Arthropods possess a _____ exoskeleton.

i) Molluscs excrete nitrogenous waste mainly as _____.

j) Adult echinoderms show _____ symmetry.

PART – II

2. **Answer all questions within maximum 50 words each:** **9x2=18**

a) Write any two types of zooids found in cnidarians.

b) What is an atoll?

c) What is biradial symmetry?

d) What is protonephridia?

e) What are microfilariae?

f) What is schizocoel?

g) What is mosaic vision?

h) What is madreporite?

i) What is torsion?

PART -III

3. **Answer any eight questions within 250 words each. 8x5=40**

a. Explain alternation of generations?
b. Describe the structure of a typical sponge?
c. Write an account of corals?
d. Write notes on scolex and proglottids?
e. Describe the structure of *Ascaris*?
f. Describe types and significance of coelom?
g. Describe communication in bees?
h. Explain metamerism in annelids?
i. Describe general characteristics of Mollusca?
j. Bipinnaria larva.

PART-IV

4. **Answer any four questions with maximum 800 words each 4x8=32**

a) Give an account of different types of canal systems found in sponges?
b) Describe the structure, life cycle and pathogenicity of *Ascaris lumbricoides*?
c) Explain vision in Arthropoda with special reference to compound eyes?
d) Explain the larval forms in echinoderms in detail?
e) Explain the evolutionary significance of Onychophora?

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