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Your Roll No.....

B

Sr. No. of Question Paper : 743

Unique Paper Code : 32231201

Name of the Paper : Non Chordata II - Coelomates

Name of the Course : B.Sc. (H) Zoology

Semester : II

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any five questions in all.
3. Including Question No. 1 which is compulsory.

1. (a) Define the following terms : (1×4=4)

(i) Deuterostomes

(ii) Ecdysis

(iii) Detorsion

(iv) Metamerism

P.T.O.

(b) Differentiate between the following pairs :

(i) Polychaeta and Oligochaeta

(2×4=8)

(ii) Atoky and Epitoky

(iii) Enterocoely and Schizocoely

(iv) Ctenidia and Taenidia

(c) Name the exact location and function of the following :

(1×4=4)

(i) Radula

(ii) Tiedemann's body

(iii) Gnathobase

(iv) Respiratory tree

(d) Classify the following upto class and write their scientific name.

(2×3=6)

(i) Cake urchin

(ii) Cuttlefish

(iii) Horseshoe crab

(e) Match the following :

(i) Spider

(ii) ~~Octopus~~

(iii) Leech

(iv) Sea urchin

(v) Cockroach

(a) Aristotle's lantern

(b) Chelicera

(c) Mandible

(d) Radula

(e) Jaw

2. (a) Give a brief account of larval forms of Echinodermata with diagrams. (7)
- (b) Explain the mechanism of torsion in Gastropoda. (5)
3. (a) Give the structure of compound eye and explain its functioning with diagrams. (7)
- (b) Briefly discuss the defence mechanisms existing among echinoderms. (5)
4. (a) Give a brief account of respiratory organs in Arthropods and discuss the mechanisms of respiration in insects. (7)

- (b) Discuss the Pulmonary respiration in Mollusca. (5)
5. Give a detailed description of excretion in Annelida with diagrams. (12)
6. Write short notes on any three of the following: (3×4=12)
- (i) Affinities of Onychophora.
 - (ii) Hormonal control of metamorphosis in insects.
 - (iii) Pearl formation.
 - (iv) Copulation and cocoon formation in leech.

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Your Roll No.....

Sr. No. of Question Paper : 761 **B**

Unique Paper Code : 32231202

Name of the Paper : Cell Biology

Name of the Course : B.Sc. (Hons.) Zoology

Semester : II (CBCS-LOCF)

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt Five questions in all.
3. Question No. 1 is compulsory.
4. Give neat labeled diagrams wherever necessary.

1. (a) Define the following : (6)

(i) Prion

(ii) Mycoplasma

(iii) Glycocalyx

P.T.O.

- (iv) Cajal bodies
- (v) Kinetochore
- (vi) Restriction point

(b) Differentiate between the following : (10)

- (i) Virus and Viroids
- (ii) Heterochromatin and Euchromatin
- (iii) Prokaryotic cell and Eukaryotic cell
- (iv) Exocytosis and Endocytosis
- (v) COP I and COP II
- (vi) Apoptosis and necrosis

(c) Expand the following : (5)

- (i) MTOC
- (ii) FADD
- (iii) Cdk
- (iv) SRP
- (v) NOR

(d) Give the contribution of the following scientists: (3)

(i) Sabatini and Blobel

(ii) Rudolf Virchow

(iii) Earl W. Sutherland

(e) Give the function of the following : (3)

(i) p53

(ii) Kinetochore

(iii) Colchicine

2. (a) Describe the various polymorphic forms of Lysosomes and add a note on the role of Lysosome in organ regression. (6)

(b) What is Oxidative phosphorylation? Explain the mechanism of generation of ATP in mitochondria. (6)

3. (a) Describe the fluid mosaic model of plasma membrane. Explain the various transport mechanisms across the membrane. (8)

(b) Write about various functions of SER. (4)

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4. (a) Give an account of the assembly and functions of microtubules. (5)
- (b) What is cell signaling? Explain the mechanism of signal transduction through G-protein coupled receptors. (7)
5. Describe important molecular events of different stages of cell-cycle and discuss the role of cyclins, Cdks and checkpoints in regulation of cell cycle. (12)
6. (a) Explain the secretory pathway of endomembrane system in cell. (8)
- (b) Justify that Mitochondria is a semiautonomous organelle. (4)
7. Write short notes on any **three** of the following: (4×3=12)
- (i) Nucleo-cytoplasmic exchange
 - (ii) Clathrin coated pits
 - (iii) Chromatin Packaging
 - (iv) Peroxisome
 - (v) Cell junctions

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[This question paper contains 4 printed pages.]

Your Roll No.....
A

Sr. No. of Question Paper : 1364

Unique Paper Code : 32231602

Name of the Paper : Evolutionary Biology

Name of the Course : B.Sc. (H) Zoology (LOCF)

Semester : VI

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt Five Questions in all including Question No. 1 which is compulsory.

1. (a) Define the following :

- (i) Stromatolites
- (ii) Inbreeding coefficient
- (iii) Sister taxon
- (iv) Ring species
- (v) Gene flow
- (vi) Molecular clock

(1×6=6)

P.T.O.

(b) Differentiate between the following :

(i) Parapatric and Peripatric modes of speciation

(ii) Rooted and Unrooted trees

(iii) Background and mass extinction

(iv) Stabilizing and disruptive selection

(2×4=8)

(c) Mention the contributions of following :

(i) Raymond Dart

(ii) Alaxander Oparin

(iii) Theodosius Grygorovych Dobzhansky

(iv) Barbara McClintock

(v) Henry Bernard Davis Kettlewell

(1×5=5)

(d) Justify the following statements :

(i) Horse evolution didn't proceed in a straight line.

(ii) Drift changes the gene frequency but inbreeding does not

(iii) Over-reproduction is the driving force of evolution.

(iv) Prokaryotic cells have given rise to aerobic eukaryotic cell. (2×4=8)

2. (a) What are the 'isolating barriers' for species? With suitable examples, elaborate the barriers that operate before the formation of zygote. (8)
- (b) Outline the merits and demerits of RNA-world hypothesis. (4)
3. (a) Describe various sources of genetic variations at individual and population level? (8)
- (b) Explain how migration causes changes in allele frequency among populations. (4)
4. (a) Discuss the paleontological evidences of evolution with suitable examples. Also, briefly comment upon different types of fossils. (8)
- (b) Justify the statement, 'Incompleteness of fossil records does not disprove the theory of evolution.' (4)

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Your Roll No.....

Sr. No. of Question Paper : 1238

A

Unique Paper Code : 32237906

Name of the Paper : Parasitology

Name of the Course : B.Sc. (Hons.) Zoology,
Theory Exam

Semester : (DSE) VI, LOCF

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates:

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt ANY FIVE questions in all.
3. Question No. 1 is compulsory.

1. (i) Match the following terms in the column A with the organism in column B (8)

(a) Organ of Berlese

Flea

(b) Copulatory Bursa

Plasmodium vivax

(c) Ascaron

Ancylostoma duodenale

P.T.O.

(d) Pronotal Comb

Pratylenchus spp.

(e) Root Lesions

Ascaris lumbricoides

(f) Sporozoite

Cimex lectularius

(g) Oncosphere

Schistosoma spp

(h) Gynacophoric canal

Taenia solium

(ii) Differentiate between the following terms: (8)

(a) Infection and Infestation

(b) Rostellum and Haustellum

(c) Reservoir host and Paratenic host

(d) Epidemic and endemic disease

(iii) Explain the following terms :

(6)

(a) Incubation period

(b) Relapse

(c) Facultative parasite

(d) Schizogony

(iv) Fill up the following blanks : (5)

(a) _____ is the infective stage of *Entamoeba histolytica*.

(b) _____ is the intermediate host in indirect life cycle of *Hymenolepis nana*.

(c) _____ larva is absent in *Schistosoma spp.*

(d) Egg stage of *Pediculus humanus* is known as _____

(e) _____ bacteria cause Lyme disease.

2. Explain the life cycle, pathogenicity and control of a parasite where man is the dead-end host. (12)

3. (i) Give an account of epidemiology and pathogenicity of a parasitic protozoan causing Kala azar. (8)

(ii) Discuss about the diagnosis of the above disease. (4)

4. Describe the life cycle and medical importance of *Xenopsylla cheopis*. (12)

5. (i) Explain the life cycle of a parasite which is transmitted by consuming measly pork.
- (ii) Discuss its pathogenicity, treatment and various prophylactic measures. (12)
6. (i) Differentiate between occult and classical filariasis. (4)
- (ii) Give an account of the life cycle of the parasite causing the above disease. (8)
7. Write short notes on any **THREE** of the following : (4×3=12)
- (a) Vampire Bat
 - (b) Cookiecutter shark
 - (c) Root-knot nematode
 - (d) *Cimex lectularius*
 - (e) Giardiasis

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Your Roll No.....

Sr. No. of Question Paper : 1324

Unique Paper Code : 32237906

Name of the Paper : Parasitology

Name of the Course : B.Sc. (Hons.) Zoology,
Theory Exam

Semester : (DSE) VI, LOCF

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
 2. Attempt ANY FIVE questions in all.
 3. Question No. 1 is compulsory.
1. (i) Name the parasite where following structures are seen : (6)
 - (a) Genal Comb
 - (b) Capitulum
 - (c) Quadrinucleate cyst

P.T.O.

(d) Proventriculus

(e) Signet ring

(f) Strobila

(ii) Differentiate between the following terms : (8)

(a) Mechanical vector and biological vector

(b) Primary and Secondary Host

(c) Cysticercosis and Taeniasis

(d) Anthroponosis and Zoonosis

(iii) Explain the following terms : (8)

(a) Questing

(b) Trophozoite induced malaria

(c) Obligatory parasite

(d) Apolysis

(iv) Fill up the following blanks : (5)

(a) _____ is the infective stage of *Fasciolopsis buski*.

(b) Smallest tape worm infecting the human is

- (c) Presence of _____ in liver cells cause relapse in Malaria.
- (d) _____ is the vector responsible for the transmission of African sleeping sickness.
- (e) The cercaria larva of _____ has bifid tail for penetration.
2. Describe the life cycle of the pathogen causing malaria with a labelled diagram. Add a note on the control strategies to eradicate the disease. (12)
3. Identify the wingless insect which has laterally compressed body with long hindlegs adapted for jumping and is mostly found attached to hairs of rodent host. Why it is a cause of concern? Discuss the biology of this insect and enumerate the control measures. (1+3+8)
4. What are epizootic and enzootic cycles? Describe the life cycle, clinical diagnosis and control measures of *Leishmania donovani*. (2+10=12)
5. Describe the life cycle of a blood fluke with suitable diagrams. Elaborate the diseased conditions of the host and write its control measures. (12)

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6. Explain the life cycle and pathogenicity of the parasite causing Ascariasis. Add a note on the treatment of this disease. (12)

7. Write short notes on any **THREE** of the following: (4×3=12)

(a) *Pratylenchus* spp.

(b) Amoebiasis

(c) Pathogenicity of *Taenia solium*

(d) Parasitic adaptations in *Meloidogyne* spp.

(e) Candiru Fish

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Your Roll No.....

Sr. No. of Question Paper : 2125 A
Unique Paper Code : 32237906(OC)
Name of the Paper : Parasitology
Name of the Course : B.Sc. (Hons) Zoology :
DSE-6
Semester : VI
Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
 2. Attempt five questions in all.
 3. Question No. 1 is compulsory.
-
1. (a) Define the following terms : (5)
 - (i) Incubation period
 - (ii) Carrier
 - (iii) Zoonosis
 - (iv) Epidemiology
 - (v) Digenic parasites

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(b) Differentiate between the following : (10)

- (i) Facultative and obligatory parasites
- (ii) Parasite and parasitoid
- (ii) Rostellum and Haustellum
- (iv) Definitive host and intermediate host
- (v) Biological vector and mechanical vector

(c) Fill up the following blanks : (3)

- (i) African sleeping sickness is caused by _____
- (ii) The causative agent of pediculosis _____
- (iii) The vector of *Leishmania donovani* _____

(d) Match the following : (5)

- | | |
|-------------------------------------|-------------------------|
| (i) <i>Entamoeba histolytica</i> | (a) Ventral sucker |
| (ii) <i>Plasmodium vivax</i> | (b) Copulatory spicules |
| (iii) <i>Trichinella spiralis</i> | (c) Chromatoid bodies |
| (iv) <i>Schistosoma haematobium</i> | (d) Signet ring stage |
| (v) <i>Ascaris lumbricoides</i> | (e) Claspers |

(e) Name the parasitologists associated with the following : (4)

(i) *Giardia intestinalis*

(ii) *Plasmodium vivax*

(iii) *Ancylostoma duodenale*

(iv) *Fasciolopsis buski*

2. (a) Describe the morphology, life cycle and laboratory diagnosis of *Wuchereria bancrofti*. (8)
- (b) Briefly discuss the economic importance of *Melodogyne*. (4)
3. (a) With the help of labelled diagram, describe the asexual life cycle of malarial parasites. (6)
- (b) Comment upon the host parasite relationships. (6)
4. (a) Discuss in detail the life cycle, medical importance and control measures of *Schistosoma haematobium*. (9)
- (b) Draw a well labelled diagram of male and female *Ascaris lumbricoids*. (3)
5. (a) Enumerate the pathogenicity and clinical features of *Trypanosoma gambiense*. (6)

- (b) With the help of relevant examples briefly discuss the importance and control measures of parasitic ticks and mites. (6)
6. (a) Describe the morphology, life cycle, prevalence, medical importance, diagnosis and control measures of *Leishmania donovani*. (9)
- (b) Add a note on the epidemiology of *Trichinella spiralis*. (3)
7. Write the short notes on parasitic adaptations of any four of the following : (12)
- (i) Candiru
 - (ii) *Pediculus humanus*
 - (iii) Vampire bat
 - (iv) *Xenopsylla*
 - (v) Cookicutter Shark

[This question paper contains 2 printed pages.]

Your Roll No.....

A

Sr. No. of Question Paper : 2220

Unique Paper Code : 32237906(OC)

Name of the Paper : Parasitology

Name of the Course : B.Sc. (Hons) Zoology: DSE-6

Semester : VI

Duration : 3 Hours

Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt five questions in all.
3. Question No. 1 is compulsory.

Q.1. (A) Define the following: 8

(i) Vector

(ii) Parasitoid

(iii) Aberrant parasite

(iv) Reservoir host

(B) Differentiate between the following terms: 8

(i) Parasites and Predators

(ii) Monogenetic and Digenetic life history

(iii) Gravid and Mature proglottid

(iv) Ectoparasite and Endoparasite

P.T.O.

(C) True or False: 3

(i) Humans is the definitive host of *Taenia solium*.

(ii) *Entamoeba histolytica* responsible for sleeping sickness.

(iii) A definitive host is an animal in which the parasite passes its adult existence or under goes a sexual reproductive phase.

(D) Draw well labelled diagrams of: 8

(i) Polymorphic forms of *Trypanosoma*

(ii) Internal anatomy of *Fasciolopsis buski*

(iii) Mature proglottid of *Taenia solium*

(iv) Adult Male and Female *Ascaris lumbricoidis*

Q.2. What is African sleeping sickness? How is it caused? Describe its transmission and pathogenesis. Give methods for its control. 12

Q.3. What do you understand by intermediate host? Give the life history of malaria parasite in mosquito. Give some important control measures. 12

Q.4. What is digenetic life cycle? Explain it with reference to life history of *Fasciolopsis buski*. 12

Q.5 Which type of parasite is *Taenia solium*? Illustrate the complete life history and write parasitic adaptation.

Q.6. Discuss the life history of *Ascaris lumbricoides* and Explain its parasitic adaptations. 12

Q.7. Write short notes on the following: 4,4,4

(a) Root knot nematode

(b) *Cimex lectularis*

(c) Cookiecutter shark as parasite

(d) Vampire bats

(e) Parasitism as an evolutionary response

(f) Amoebiasis

B.Sc (H)
Zoology