

INVERTEBRATE I (09CT11)

ANSWER ALL QUESTIONS

SECTION – A

10X1=10 Marks

Multiple choice questions:

1. Malaria is caused by
a. Trypanosome b. Entamoeba c. Plasmodium d. *Polio mylities*
2. Which one of the following synthetic drug is cure malaria?
a. Quinine b. Daraprim c. Chloroquine d. All of these
3. The endoparasite Trypanosoma was discovered by
a. Golgi b. Charles Laveran c. Ronald Ross d. Forde
4. Pick out which one of the following is causing the sleeping sickness?
a. Trypanosome b. Entamoeba c. Plasmodium d. *Polio mylities*
5. Which one of the following is called a monogenic parasite?
a. Entamoeba b. Plasmodium c. Trypanosome d. Silkworm
6. What is the infective form of *Ascaris lumbricoides*?
a. Unembryonated ova b. Embryonated eggs c. Larvae d. All the above
7. Which one is the larva of *Ascaris*
a. Rhabditiform b. Blastulaform c. Trachea d. Alveoli
8. Filariasis is transmitted by
a. Housefly b. Mosquito c. Bedbug d. Fruit fly
9. Third moulting of *Ascaris* occurs in
a. Liver b. Egg c. Lung d. Intestine
10. Sexual dimorphism is found in
a. *Hydra* b. Earthworm c. *Ascaris* d. *Fasciola*

ANSWER ANY FIVE QUESTIONS

SECTION – B

5X2=10 Marks

Very short answer:

11. Define: Endo digenic parasite.
12. What are the symptoms of Gambia fever?
13. How can you prevent malaria without medication?
14. How the tetra nucleate cyst is transferred from a person to person?
15. What is Pseudocoelom?
16. Glycolysis.
17. Write the digestive mechanisms of *Ascaris*.

ANSWER ANY THREE QUESTIONS

SECTION – C

3X6=18 Marks

Short answer:

18. How the plasmodium enters into the mosquito? Discuss its life cycle at the gut of anopheles sp.
19. Write a short note on development of Trypanosoma in man with neat sketch.
20. Give an account on lifecycle of Entamoeba.
21. Explain the parasitic adaptations of nematodes.
22. Explain the disease and control of filarial worm.

ANSWER ANY ONE QUESTIONS

SECTION – D

1x12=12 Marks

Long Answer:

23. Write a detailed account on the lifecycle of Plasmodium in Man.
24. Describe the life cycle, pathogen and prevention of *Ascaris lumbricoides*.

INVERTEBRATE II - 09CT12

SECTION – A Multiple choice questions

Answer All Questions:

10X1=10 Marks

- The cavity lying between the body wall and the gut are lined with coelomic epithelium is called
a) Acoelom b) Pseudocoelom c) Eucoelom d) Haemocoelom
- The linear arrangement of segments one behind the other is called
a) Coelom b) Metamerism c) Symmetry d) organization
- The law of adaptive radiation was first proposed by
a) Osborn b) Linnaeus c) Mendel d) Hatschek
- The coils of Pila shell are called
a) Sinistral b) Suture c) Lip d) Whorls
- Pila globosa* is _____
a) Sepia b) Apple snail c) Star fish d) none of these
- Exoskeleton of arthropods is made up of
a) Lipids b) Proteins c) Chitin d) Cellulose
- Millipede (*Spirostreptus*) belongs to the order _____
a) Scorpionida b) Chilopoda c) Rhizocephala d) Diplopoda
- The 'Millipedes' feeds on the
a) Living plants b) Decaying plants c) Algae d) Fungi
- The trunk segments of Millipede composed of
a) Tergum, sternum and pleural plate b) Antennae, Mandible and Maxillae
c) Gnathochilarium d) Head and trunk
- The molting process in arthropods is known as
a) ecdysis b) tagmatization c) metamorphosis d) paedomorphosis

SECTION – B Very short answer

Answer any Five Questions:

5X2=10 Marks

- Define Eucoelom.
- List out the types of metamerism.
- Enlist the mantle complex of *Pila*.
- What is aboral surface?
- Comment on odoriferous glands.
- Define cytopharynx
- What is Pellicle?

SECTION – C Short answer

Answer any Three Questions

3X6=18 Marks

- Describe various types of coelom.
- Elucidate the external features of *Pila*.
- Write about shell of *Pila*.
- Describe briefly the morphological features of Millipedes.
- Enlist the general characters of phylum Echinodermata.

SECTION – D Long Answer

Answer any One Question:

1x12=12 Marks

- List out the general characteristics of Phylum Mollusca.
- With a neat diagram explain the digestive system of Star fish (*Asterias rubens*).

CELL BIOLOGY - 09CT31

SECTION – A Multiple choice questions

Answer All Questions:

10X1=10 Marks

- The Golgi complex was first described by
a) Singer and Nicolson b) Camillo Golgi c) Purkinje d) George
- The cisternae of Golgi bud off small vesicles called as
a) Primary lysosomes b) Secondary lysosomes c) Phagosomes d) Pinosomes
- The oxidation of pyruvic acid into CO₂ and water is called
a) Krebs cycle b) Urea cycle c) Ammonia cycle d) Oxygen cycle
- Which cell organelle is called power houses of cell?
a) Endoplasmic reticulum b) Mitochondria c) Golgi bodies d) Lysosomes
- The lysosomes release enzymes outside of the cell is called
a) Exocytosis b) Endocytosis c) Autolysis d) Autophagy
- In nucleus, the proteins attached with chromatin are
a) Histones b) Protamines c) Albumins d) Acidic proteins
- Which is the largest organelle of the cell?
a) Mitochondrion b) Lysosome c) Golgi complex d) Nucleus
- Polytene chromosomes are found in ----- of insects.
a) Gut b) Salivary glands c) Trachea d) All the above
- S Phase of the cell cycle is characterized by
a) Active synthesis of DNA b) RNA synthesis
c) Active synthesis of all proteins d) Formation of organelles
- Pairing of homologous chromosomes occurs during
a) Leptotene stage b) Pachytene stage c) Late anaphase stage d) Zygotene stage

SECTION – B Very short answer

Answer any Five Questions:

5X2=10 Marks

- What is Autophagy?
- Define heterophagy.
- Comment on Autolysis.
- State the process of biogenesis of lysosome.
- Characterize interphase nucleus.
- Interpret the term senescence.
- Pinpoint the difference between mitotic and meiotic divisions.

SECTION – C Short answer

Answer any Three Questions

3X6=18 Marks

- Explain the functions of Golgi body with neat diagram.
- Describe the structure of Golgi body with suitable sketch.
- Commemorate the implication of cell aging.
- Specify the unique features of nucleolus.
- Focus light on ultrastructure of interphase nucleus with a labelled sketch.

SECTION – D Long Answer

Answer any One Question:

1x12=12 Marks

- Give a detailed account on Krebs cycle.
- Trace the molecular progress in the successional stages of mitotic division.

GENETICS – 09CT32

SECTION – A Multiple choice questions

Answer All Questions:

10X1=10 Marks

- The universal blood donors for the ABO system are type:
a. AB b. A c. B d. O
- Who proposed three genes are involved in the production of Rh antigen?
a. Wiener b. Fisher c. Mendel d. None
- The result of marriage between black Negros and white races is
a. Black b. white c. mulatto d. brown
- Which one is wild type of rabbit?
a. Agouti b. Chinchilla c. Himalayan d. Albino
- The symptoms of erythroblastosis foetalis is
a. jaundice b. anaemia c. both a and b d. none
- Cytoplasmic inheritance was first described by
a. Albert levan b. Cornes c. Mendel d. Jijo
- Which one of the following gene is maintain the kappa particles
a. M b. GG c. HH d. K
- Which one of the following is inborn errors of metabolisms
a. Albinism b. Colour blindness c. Haemophilia d. All the above
- Albinism is recessive genes represented by
a. AA b. a c. aa d. bb
- The science of improvement of existing human race is called
a. Euthenics b. Eugenics c. Negative eugenics d. Polygenesis

SECTION – B Very Short Answer

Answer any FIVE Questions:

5X2=10 Marks

- What is Multiple Alleles?
- Comment on acromelanism
- Define Polygenes
- What is multiple gene inheritance?
- Define the extra chromosomal inheritance
- What is Eugenics?
- What is Pedigree analysis?

SECTION – C Short Answer

Answer any THREE Questions:

3X6=18 Marks

- Distinguish between polygenic inheritance and Mendelian inheritance
- Analyse the genetic basis of Rh blood group
- With reference to polygenic inheritance, discuss the inheritance of skin colour in man
- Explain the phenylketonuria is an inborn error of metabolism
- Discuss the identical twins is a monozygotic twins.

SECTION – C Long Answer

Answer any ONE Question:

1X12=12 Marks

- Describe the genetics of ABO blood group
- Explain the kappa particles in paramecium.

PG & Research Department of Zoology
Vivekananda College
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Date: 10.09.2018

II B.Sc., Zoology

II Sessional Test
Ist Semester
Max.Marks: 25
Time: 1 Hours

Public Health and Hygiene (09SB31)

ANSWER ALL QUESTIONS

SECTION – A

5X1=5 Marks

Multiple choice questions:

1. AIDS is an epidemic
 - a. Bacterial disease
 - b. Fungal disease
 - c. Viral disease
 - d. Protozoan disease
2. The following one is oral vaccine
 - a. Polio
 - b. Gentamycin
 - c. Malaria
 - d. AIDS
3. A decreased platelet [thrombocytopenia] count may be to
 - a. Yellow fever
 - b. Dengue fever
 - c. White fever
 - d. Black fever
4. Which one is a Zoonotic Disease?
 - a. Tetanus
 - b. AIDS
 - c. *Japanese encephalitis*
 - d. Dengue
5. The word “Rubeola” means
 - a. White spots
 - b. Red spots
 - c. Black spots
 - d. Yellow spots

ANSWER ANY TWO QUESTIONS

SECTION – B

2X2=4 Marks

Very short answer:

11. Write the symptoms of Amoebiasis.
12. What is Filariasis?
13. Define Rabies.
14. What is JE?

ANSWER ANY ONE QUESTIONS

SECTION – C

1X6=6 Marks

Short answer:

15. Explain the Polio virus.
16. Diphtheria is an acute communicable disease –discuss.

ANSWER ANY ONE QUESTIONS

SECTION – D

1X10 =10Marks

Long Answer:

17. Describe the structure, infection, Transmission, Control and Treatment of AIDS.
18. Write the symptoms, diagnosis, treatment and prevention of Dengue fever.

Animal Organization - 09AT01

SECTION – A Multiple choice questions

Answer All Questions:

10X1=10 Marks

- Haemoglobin is dissolved in plasma in
a) Tapeworm b) insect c) Ascaris d) Earthworm
- The first body segment of earthworm is
a) Peristomium b) Peristome c) Prostostomium d) Prostosome
- Which is the locomotory organ of paramecium?
a) Cilia b) Flagella c) Pseudopodia d) Contractile vacuoles
- Cyclosis present in
a) Amoeba b) Euglena c) Paramecium d) Plasmodium
- The functional role of contractile vacuoles in paramoecium is _____
a) Thermoregulation b) food storage c) osmoregulation d) digestion
- Which of the following is hearing organ of human ear?
a) Corti b) Mallieus c) Incus d) Stapes
- The gases exchange takes place in birds are
a) Air capillary b) ventobronchi c) dorsobronchi d) parabronchi
- The rod cells of retina contain
a) Rhodopsin b) iodopsin c) melanin d) chromatophores
- In excretory system of earthworm nephrostomes are the part of
a) meganephridia b) micronephridia c) pharyngeal nephridia d) none of these
- The colour blind person cannot distinguish red colour this defect is called
a) Protanopia b) Deuteranopia c) Tritanopia d) Myopia

SECTION – B Very short answer

Answer any Five Questions:

5X2=10 Marks

- Comment on visceral peritoneum.
- Mention the characteristic of corpuscles in earthworm.
- Give a short note on prostomium.
- Mention the function of longitudinal muscle of earthworm.
- Define types of deafness.
- What is eye spot?
- Give a list of air sacs of lungs of bird.

SECTION – C Short answer

Answer any Three Questions

3X6=18 Marks

- Draw a labeled diagram of circulatory system of Earthworm.
- Describe in brief the cyclosis mechanism of Paramecium.
- Describe the excretory system of earthworm with labelled diagram.
- Write an account on compound eye of insect with neat illustration.
- Describe the human eye with labelled diagram.

SECTION – D Long Answer

Answer any One Question:

1x12=12 Marks

- With a neat diagram explain the circulatory system of Calotes.
- Draw the structure of human ear and comment on it.

Biochemistry and Biophysics (09CT51)

ANSWER ALL QUESTIONS

SECTION – A

10X1=10 Marks

Multiple choice questions:

1. Sphigomyelin was first prepared from brain by Thudichum in
a. 1884 b. 1885 c. 1886 d. 1887
2. Hypercholesterolemia is associated with
a. Diabetes b. Ketonuria c. Gilbert's disease d. Atherosclerosis
3. The specific gravity of glycerol is
a. 1.26 b. 1.27 c. 1.28 d. 1.29
4. The general formula for saturated fatty acids is
a. $C_{11}H_{2n+1}COOH$ b. $C_{12}H_{2n+1}COOH$ c. $C_{13}H_{2n+1}COOH$ d. $C_{14}H_{2n+1}COOH$
5. Which one among the following is the principle organ for cholesterol biosynthesis?
a. Kidney b. Muscle c. Intestine d. Liver
6. In colloidal system, the size of the particles range from ----- in diameter.
a. 1μ to 0.1μ b. 1.5μ to 0.5μ c. 2μ to 1μ d. 2μ to 1.5μ
7. Colloidal system is consist of ----- phases
a. Three b. Four c. One d. Two
8. The formation of urea, mainly in the liver, is by:
a. Kreb's cycle b. Glyoxylate cycle c. Ornithine cycle d. None of these
9. Which of the following general enzymatic reactions are not shown in amino acid metabolism?
a. Deamination b. Transamination c. Decarboxylation d. Glucose formation
10. Carbomyl phosphate combines with ornithine to form-----?
a. Citrulline b. Arginine c. Fumarate d. Asparate

ANSWER ANY FIVE QUESTIONS

SECTION – B

5X2=10 Marks

Very short answer:

11. What is EFA? Cite examples.
12. Name the ring system present in the cholesterol.
13. Distinguish between saturated and unsaturated fatty acids.
14. What is Tyndall effect?
15. What is Brownian movement?
16. What is transamination?
17. Define: Hyperammonemia.

ANSWER ANY THREE QUESTIONS

SECTION – C

3X6=18 Marks

Short answer:

18. Discuss the properties of fatty acids.
19. Explain the structure and functions of cholesterol.
20. What is Donnan membrane equilibrium? Explain it with an example.
21. How ketobodies are synthesis during the process of transamination.
22. Write an account on gluconeogenesis.

ANSWER ANY ONE QUESTIONS

SECTION – D

1x12=12 Marks

Long Answer:

23. Classify lipids and cite examples.
24. Write an essay on biosynthesis of urea.

Biotechnology (09CT52)

ANSWER ALL QUESTIONS

SECTION – A

10X1=10 Marks

Multiple choice questions:

- Pencillium was discovered by Alexander Fleming in
a) 1931 b) 1928 c) 1935 d) 1939
- Process of replacing defective genes with effective genes is known as
a) Transgenic fusion b) Transgenic budding c) Transgenic injection d) gene therapy
- Transgenic plants are developed by
a) Introducing foreign genes b) Introducing gene mutations
c) Deleting certain chromosome parts d) Stopping spindle formation
- Secondary metabolites
a) are essential to microbe function.
b) are by-products of metabolism that are not important to microbe function.
c) are products that require additional processing before they can be packaged.
d) are harvested during the exponential phase of growth.
- The vaccine which developed first from animal cell culture was
a) Polio vaccine b) Hepatitis B vaccine c) Influenza vaccine d) Small pox vaccine
- The production of babies in humans by in vitro fertilization and embryo transfer is called
a) In vitro babies b) Test tube babies c) Invitro – invivo babies d) All the above
- Callus differentiates under the influence of the paired hormones
a) Auxin and cytokinin b) Auxin and abscisic acid c) Auxin and ethylene d) Cytokinin and gibberellin
- Which one of the following is first artificial cloning vector?
a. P^{UC} vector b. P^{ACYC184} c. P^{BR322} d. P^{UC19}
- Which plasmid is induce tumor in plants?
a. Ti- Plasmid b. E. Coli Plasmid c. R. Coli Plasmid d. Phagemids
- Which is a hybrid of a plasmid?
a. Cosmid b. PAC c. Phagemids d. BAC

ANSWER ANY FIVE QUESTIONS

SECTION – B

5X2=10 Marks

Very short answer:

- What is DNA Probe?
- Write a note on secondary metabolites.
- What is explant?
- Define trypsinization.
- What is disaggregation?
- What is Ti-Plasmid?
- What is Phagemid Vector?

ANSWER ANY THREE QUESTIONS

SECTION – C

3X6=18 Marks

Short answer:

- Write short note on the following:
(i) GMOs (ii) Bioremediation
- Give a brief note on Xenobiotics.
- Give an account on DNA microarray and add its applications.
- Explain the pBR³²² Vector.
- Discuss the Bacterial Artificial Chromosomes (BAC)

ANSWER ANY ONE QUESTIONS

SECTION – D

1x12=12 Marks

Long Answer:

- Write an essay on gene therapy.
- Elaborate various methods for disaggregation of cells in explant.

Biostatistics, Computer Applications & Bioinformatics – 09EP51

SECTION – A Multiple choice questions

Answer All Questions:

10X1=10 Marks

1. The positional measure of central tendency is
a. arithmetic mean b. median c. geometric mean d. None
2. Mode is
a. Most frequent value b. Least frequent value c. Middle most value d. Very high value
3. Quartile deviation is
a. Easy to understand and calculate b. Unaffected by extreme items
c. Is quite satisfactory d. All of them
4. The positional average is
a. Mean b. Median c. Mode d. Regression
5. Find out range from the following: 2,3,4,5,11,8
a. 7 b. 8 c. 9 d. 10
6. Among the following the e-mail service provider is
a. incometax.org b. ncbi.org c. Google d. embl.ac.uk
7. Forget password can be retrieved in e mail through
a. Specific questions b. Alternative e mail c. Syntax notes d. All of these
8. REBASE is an ----- database
a. Structure b. Enzyme c. Pathway d. genome
9. The nucleotide database which is maintained by US government is
a. NCBI b. EMBL c. DDBJ d. IISc
10. The retrieval system adopted in EMBL is
a. Entrez b. Libra c. Sakura d. SRS system

SECTION – B Very Short Answer

Answer any **FIVE** Questions:

5X2=10 Marks

11. List out the merits of the mean.
12. Mention the formula for calculation of mean by direct method.
13. What is Inter-quartile deviation?
14. Define measures of dispersion
15. Define Disease database.
16. Name the database with example which deals with atoms, bonds and molecules.
17. Write a short note on data sharing.

SECTION – C Short Answer

Answer any **THREE** Questions:

3X6=18 Marks

18. Distinguish between mean and median
19. Calculate mean for the following data

Wt. of fishes (g)	0-5	5-10	10-15	15-20	20-25
No. of fishes	4	10	3	8	12

20. Find out Quartile Deviation for the given frequency distribution

Wt. of chick (g)	0-10	10-20	20-30	30-40	40-50	50-60
No. of chick	7	8	10	3	9	5

21. Differentiate primary, secondary and composite biological data bases with examples.
22. Describe the common features of biological database.

SECTION – C Long Answer

Answer any **ONE** question:

1X12=12 Marks

23. Write an essay on graphical presentation with illustrations.
24. Give a detailed account on classification of biological databases with suitable examples.