

09CT11



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : First Semester : Paper – I

INVERTEBRATES – I

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- How many contractile vacuoles are present in *Paramecium*?
a) 2 b) 3 c) 4 d) many
- In sponges, gemmules are helpful in
a) sexual reproduction b) asexual reproduction
c) Digestion d) creation of water current
- Portugese man of war is
a) Aurelia b) Obelia c) Physalia d) Hydra
- Liver fluke comes under the phylum
a) Protozoa b) Porifera
c) Coelenterata d) Platyhelminthes
- Ascaris is an example for
a) Parasitism b) mutualism
c) Commensalism d) neutralism
- What is a vector? Give example.
- Which type of canal system is in *Leucosolenia*?
- Which organism has well polymorphic structure?
- What are flame cells?
- Name the causative organism for elephantiasis.

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

- a) With a neat sketch, describe the structure of *Paramecium*.
(OR)
b) List out the general characters of phylum Protozoa.
- a) Classify the phylum Porifera with suitable examples.
(OR)
b) Describe the mode of reproduction in sponge.
- a) What is polymorphism? Explain it with *Obelia* colony.
(OR)
b) What are coral reefs? Add a note on its types.
- a) Give an account of the life history of *Fasciola hepatica*.
(OR)
b) Describe the female reproductive system of *Fasciola* with neat diagram.
- a) What is sexual dimorphism? With the help of labeled diagrams, differentiate male from female.
(OR)
b) Enumerate the parasitic adaptation in Helminth parasites.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

- Write an essay on modes of nutrition in protozoa.
- Give an account on canal system in sponges.
- Classify the phylum Coelenterata up to class level with examples.
- Explain the morphology of *Fasciola* with a neat diagram.
- Give an account on any one helminth parasite's life history, disease and its control measures that you have studied.



09CT12



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : First Semester : Paper – II

INVERTEBRATES – II

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- Nereis is commonly known as
 - Clam worm
 - Rag worm
 - Sand worm
 - All of these
- Which of the following one comes under the Class Onychophora?
 - Peripatus
 - Cockroach
 - Prawn
 - Honeybee
- Choose the commercially important insect
 - Honeybee
 - Lac insect
 - Silkworm
 - All
- “Apple snail” is
 - Pila globosa*
 - Pinctada vulgaris*
 - Placenta placenta*
 - Murex spinosa*
- The peculiar feature of phylum Echinodermata is
 - Water vascular system
 - Canal system
 - Gastrovascular cavity
 - Presence of spicules
- Define coelom.
- What do mean by “biramous appendages”?
- What is polymorphism?
- Name the respiratory organs of Pila.
- How many Tiedmanns’ bodies are found in starfish?

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

- With a neat sketch, describe the morphology of Nereis.
(OR)
 - Give an account on origin of coelom and metamerism in Annelids.
- Describe the cephalic appendages of Prawn with diagrams.
(OR)
 - “Peripatus is a connecting link between Annelids and Arthropods” – Justify.
- How are honeybees economically important?
(OR)
 - Explain the morphology of Centipede with diagram.
- Enlist the general characters of phylum Mollusca.
(OR)
 - Explain in detail about the mode of respiration in Pila.
- Classify the phylum Echinodermata upto class level with examples.
(OR)
 - What is pedicellaria? Add a note on its types and importance.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

- Write an essay on adaptive radiation In Polychaetes.
- Give an account on larval forms of Crustacea. Add a note on its significance.
- With a neat sketch, describe the structure of Scorpion.
- “Cephalopods are advanced Molluscs” – Justify.
- Explain in detail about the water vascular system in starfish.



09NE11



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.A. / B.Sc. Degree (Semester) Examinations, November 2015

Part – IV : NME Subject : First Semester : Paper – I

HUMAN ANATOMY

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

1. What is the function of microvilli?
a) Ingestion b) Digestion c) Absorption d) Ejection
2. Which blood group is called as Universal Donor?
a) A b) B c) AB d) O
3. In lungs gaseous exchange takes place in
a) Alveoli b) Microvilli c) Nephron d) Neuron
4. Human eye is called as
a) Photoreceptor b) Phonoreceptor
c) Chemoreceptor d) Tangoreceptor
5. The element needed for thyroid gland secretions is
a) Potassium b) Iodine c) Calcium d) Manganese
6. Expand ECG.
7. Which is the hearing organ of human ear?
8. What is Diastolic Pressure?
9. Name the Hormones secreted by Islets of Langerhans of Pancreas.
10. Which is the functional unit of human brain?

SECTION – B

Answer ALL Questions :

(4 × 10 = 40)

11. a) Describe the Structure of human skin.
(OR)
b) Write a short note on the structure of typical human tooth.
12. a) Brief the ultra structure of Nephron.
(OR)
b) Give an account on structure of human heart.
13. a) Describe the structure and mechanism of lungs.
(OR)
b) Write down the structure of human brain.
14. a) Write a short note on ABO blood groups of human.
(OR)
b) Draw the structure and comment on the human ear.

SECTION – C

Answer any TWO Questions :

(2 × 12½ = 25)

15. Explain the components of digestive system in Man.
16. Write an essay on composition of blood.
17. Explain the structure of human Eye.



09CT31



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : Third Semester : Paper – I

CELL BIOLOGY

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- Cell theory was postulated by _____.
 - Robert Brown
 - Malpighi
 - Schleiden and Schwann
 - Dujardin
- Lysosomes are otherwise called as
 - Power houses
 - Cellular skeletons
 - transport systems
 - suicidal bags
- Kreb's cycle takes place in
 - Nucleus
 - Cytoplasm
 - mitochondria
 - Endoplasmic reticulum
- Meiotic cell division results in cells with
 - diploid chromosomes
 - haploid chromosomes
 - Paternal chromosomes
 - Maternal chromosomes
- One turn of DNA helix measures about
 - 3.4 A°
 - 34 A°
 - 20 A°
 - 4.3 A°
- What is the result of fixation?
- Which is the main function of Endoplasmic reticulum?
- What does 'Svedberg Unit' measure?
- What are Carcinogens?
- What is the study of Aging called?

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

- Describe the process of centrifugation and its uses.

(OR)

 - Give an outline of staining methods.
- Explain the structure of Endoplasmic reticulum.

(OR)

 - Enlist the functions of Golgi.
- What is the role played by Ribosomes as cellular organelles?

(OR)

 - Write about the structure of mitochondria.
- Give a short account on Giant chromosomes.

(OR)

 - Discuss the properties of Cancer cells.
- Briefly explain the molecular structure of DNA.

(OR)

 - Explain briefly the Lac operon.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

- Electron microscope is a boon to cell biology – Discuss.
- What do you understand about the functions of Plasmamembrane?
- Explain Oxidative phosphorylation.
- Analyse the processes of First meiotic prophase.
- Explain the Role of RNA and Ribosomes in Protein synthesis.




VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : Third Semester : Paper – II

GENETICS

Under CBCS – Credit 5

 Time: **3** Hours

 Max. Marks: **75**
SECTION – A
Answer ALL Questions :
(10 × 1 = 10)

- The F₂ genotype of Mendelian monohybrid is _____.
 a) 1 : 1 b) 2 : 1 c) 3 : 1 d) 1 : 2 : 1
- Skin colour in is due to _____.
 a) Supplementary gene b) Duplicate gene
 c) Poly gene d) Multiple alleles
- Number of linkage group in Drosophila is _____.
 a) 2 b) 4 c) 7 d) 23
- Sex linked inheritance was studied by _____.
 a) J.H.Morgan b) Wilson c) Cotto d) Janssens
- Science of improvement of existing human race is called
 a) eugenics b) euthenics c) euphenics e) out breeding
- What is complete dominance?
- Define multiple alleles?
- What is chiasma?
- Define holandric gene.
- What is sigma particle?

SECTION – B
Answer ALL Questions :
(5 × 7 = 35)

- a) Explain the Mendel's law of segregation with reference to Drosophila.
 (OR)
 b) Write briefly the phenomenon of inheritance of complementary gene with reference to flower colour in sweet pea.
- a) Discuss the polygenic inheritance with reference to kernel colour in wheat.
 (OR)
 b) Explain the mode of inheritance of coat colour in Rabbit.
- a) Explain briefly the steps involved in chromosome mapping with an illustration.
 (OR)
 b) Write an account on linkage with reference to Drosophila.
- a) Write a brief account on haemophilia.
 (OR)
 b) Explain the role of hormone and environment in sex determination.
- a) Analyse various syndromes and their genetics.
 (OR)
 b) Write the merits and demerits of inbreeding.

SECTION – C
Answer any THREE Questions :
(3 × 10 = 30)

- Describe in detail the law of independent assortment with reference to dihybrid cross.
- Discuss the genetics of ABO blood groups.
- Write the stern's experiment of crossing over.
- Explain the phenomenon of sex linked inheritance with reference to colour blindness in man.
- Discuss the various types of twins and their genetics.



09SB31



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – IV : Skill Based Subject : Third Semester : Paper – I

PUBLIC HEALTH AND HYGEINE

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- The major components of food are
 - Carbohydrate
 - Protein
 - lipid
 - All the above
- Scurvy is due to the deficiency of
 - Vitamin A
 - Vitamin D
 - Vitamin E
 - Vitamin C
- The causative agent of Amoebiasis is
 - Trypanosoma
 - Plasmodium
 - Leishmania
 - Entamoeba
- Diabetes is due to variation in
 - blood glucose
 - blood cholesterol
 - blood protein
 - All the above
- Which of the following instrument is used to measure the blood sugar?
 - Haemoglobinometer
 - Sphygmomanometer
 - Glucometer
 - colorimeter
- Mention any two functions of haemoglobin.
- Expand STD.
- What is a non-communicable disease?
- Expand WHO.
- Name the causative organism of Filariasis.

SECTION – B

Answer ALL Questions :

(4 × 10 = 40)

- Describe the classification of foods.

(OR)

 - Write an account on vitamin deficiencies symptoms and preventive measures in human.
- Discuss the methods of sewage treatment.

(OR)

 - AIDS as a dreadful disease – Justify.
- Briefly explain the causative organism and preventive measures of measles.

(OR)

 - State and explain the causes of hypertension.
- Explain the role of NGOs in health education.

(OR)

 - Summarize the objectives and methods in public health education.

SECTION – C

Answer any TWO Questions :

(2 × 12½ = 25)

- Write a detailed account on any two respiratory infections in human.
- Explain the life cycle of Malaria.
- Write an essay on occupational health hazards.



09AT01



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. (Chem. / Bot.) Degree (Semester) Examinations, November 2015

Part – III : Allied Subject : Third Semester : Paper – I

ANIMAL ORGANISATION

Under CBCS – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- Type of symmetry in Amoeba is
 - Radial
 - Asymmetry
 - Spherical
 - Bilateral
- In which of the following organ digestion takes place in frog?
 - Mouth
 - Oesophagus
 - Stomach
 - Rectum
- The largest blood vessel in earthworm is
 - Ventral vessel
 - Dorsal vessel
 - Supra oesophageal vessel
 - Sub neural vessel
- Photoreceptor in Cockroach is
 - Flagellum
 - Chloroplast
 - Compound eyes
 - Nucleus
- Male reproductive organ in rabbit is
 - Testis
 - Ovary
 - Kidney
 - Medulla
- What is coelom?
- List out the steps of holozoic nutrition in Amoeba.
- What is Pseudopodial locomotion?
- What is the function of Ear?
- Name the excretory organ in Earthworm.

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

11. a) Explain Binomial nomenclature with an example.
(OR)
b) Give an account on grades of animal organization.
12. a) Describe the feeding and digestion in Hydra.
(OR)
b) Explain gill respiration in fish.
13. a) Write a detailed account on circulatory system in Calotes.
(OR)
b) Explain the locomotion in paramecium.
14. a) Describe the structure of Nervous system of earthworm.
(OR)
b) Give an account on structure and functions of photoreceptor of man.
15. a) Explain the process of excretion in Amoeba.
(OR)
b) Describe the female reproductive system of Rabbit.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

16. Highlight the salient features of phylum Protozoa, Annelida and Arthropoda with examples.
17. Explain the circulatory system of earthworm.
18. Explain in detail the Flight mechanism in Pigeon.
19. Describe the structure of Human Brain.
20. Explain the structure and function of Human Kidney.



09CT51



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : Fifth Semester : Paper – I

BIOTECHNOLOGY

Under CBCS – Credit 5

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

1. Which one of the following is intellectual property right?
a) Content b) Trademark c) VAT d) Tax
2. Which of the following enzyme is known as molecular scissors?
a) DNA ligase b) Polymerase
c) Restriction endonuclease d) Transcriptase
3. The SCP is produced from
a) Spirulina b) Euglena c) Artemia d) Spirogyra
4. The transfer of a desired gene in to animal cell is known as
a) Embryo transfer b) Gene transfer
c) Vector transfer d) Plasmid transfer
5. The protoplasts lack in
a) Cell wall b) Nucleus c) Stem d) Seed
6. Define patent?
7. Comment on adaptor.
8. Enlist the vector used in genomic library.
9. Bring out the significance of transgenic animals.
10. What do you mean by somatic cell fusion?

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

11. a) Explain briefly the IPR.
(OR)
b) Describe briefly about biosafety.
12. a) Write a brief account on the salient features of P^{BR322}.
(OR)
b) Give a brief account on the principle and application of PCR.
13. a) Write a note on the genomic library.
(OR)
b) Describe briefly any one method of selection of recombinants.
14. a) Explain briefly the embryo stem cell culture.
(OR)
b) Give a brief account on any one gene transfer method for the production of transgenic animals.
15. a) Analyse briefly the protoplast culture.
(OR)
b) Discuss briefly the pollen culture.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

16. Discuss in detail the progress of biotechnology India.
17. Analyse in detail the principle and applications of Southern blotting technique.
18. Give a detailed account on transfer of rDNA into the bacterial cell.
19. Describe in detail the IVF technique.
20. Explain the callus formation and its culture.



09CT52



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – III : Core Subject : Fifth Semester : Paper – II

BIOCHEMISTRY AND BIOPHYSICS

Under CBCS – Credit 5

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

- The pH of human blood is
a) 9.4 b) 8.4 c) 7.4 d) 6.4
- Identify the essential fatty acid from the following
a) Arachidonic b) Arachidic c) Stearic d) Palmitic
- Which one among the following is the principal organ for cholesterol biosynthesis
a) Kidney b) Muscle c) Liver d) Intestine
- Enzymes that occur in different forms but differ chemically, immunologically and electrophoretically are
a) Coenzymes b) Isoenzymes
c) Antienzymes d) Lysozymes
- β - oxidation theory was put forward by
a) Knoop b) Michaleis – Menton
c) Henderson - Hasselbalch d) Embden Meyerhoff
- Present the energy budget for TCA cycle.
- Define the high energy compound.
- Mention the role of cytochromes.
- What is entropy?
- What is Brownian movement?

SECTION – B

Answer ALL Questions :

(5 × 7 = 35)

- Classify the lipids.
(OR)
b) Classify the Proteins.
- Explain the mechanism of enzyme action.
(OR)
b) Describe the cholesterol structure with a few of its functions.
- Comment on urea cycle.
(OR)
b) Trace out EM pathway.
- Discuss the respiratory chain organization in mitochondria.
(OR)
b) Enlist the biologically important high energy compounds.
- Describe the thermodynamic laws.
(OR)
b) Give a brief account on the general properties of colloids.

SECTION – C

Answer any THREE Questions :

(3 × 10 = 30)

- Comment on the properties of aminoacids.
- Discuss the cholesterol biosynthesis.
- Give an account of β oxidation theory with a note on glycerol biosynthesis.
- Explain oxidative phosphorylation process.
- Write an essay on colloids.



**SECTION – A****Answer ALL Questions :****(10 × 1 = 10)**

1. The technique of presenting the statistical data by appropriate pictures is known as
 - a) Pie diagram b) Bar diagram c) Pictogram d) Cartogram
2. Pick out the very high degree of correlation from the following values :
 - a) + 0.9 b) + 0.8 c) +0.6 d) – 0.9
3. When a coin is tossed for 50 times, what is the probability of appearing head?
 - a) 10 times b) 25 times c) 50 times d) 20 times
4. What is the meaning of LAN
 - a) Local Area Network b) Local Arithmetic Network
 - c) Linear Arithmetic Network d) Linear Area Network
5. A repository sequence of DNA which provide a centralized and homogenous view of its contents is known as
 - a) DNA Primer b) Data base c) Algorithm d) RNA primer
6. Enumerate any two methods for representation of frequency distribution.
7. Mention the formula for calculation of arithmetic mean by direct method.
8. Define Null hypothesis.
9. Mention the significance of MS Word.
10. Define the term genomics.

SECTION – B

Answer ALL Questions : (5 × 7 = 35)

11. a) Describe any three types of non random sampling methods.

(OR)

b) Represent the following data by suitable bar diagram.

Year	2001	2002	2003	2004	2005	2006
Yield in tonnes of rice	1000	1250	1415	1800	2150	1320

12. a) What is meant by Arithmetic mean? Mention its types.

(OR)

b) Explain any two measures of dispersion.

13. a) In a farm there are 5 mango trees, 8 jack fruit trees and 7 sappotta trees. One tree is chosen at Random. What is the probability of mango or sappotta tree?

(OR)

b) What is meant by student ‘t’ test? Mention its types.

14. a) Analyse functions of MS Excel.

(OR)

b) Write a short note on multimedia technology.

15. a) Analyse various methods of phylogenetic analysis.

(OR)

b) Bring out the steps involved in FASTA algorithm.

SECTION – C

Answer any THREE Questions : (3 × 10 = 30)

16. Analyse various types of diagrammatic representations of data with illustrations.

17. From the following data of the weight of 125 students, determine the modal weight :

Weight (kgs)	40 – 45	45 – 50	50 – 55	55 – 60	60 – 65	65 – 70	70 – 75	75 – 80
No. of students	8	12	24	31	32	11	5	2

18. When two heterozygous pea plants are crossed, 800 plants are produced in F2 generation. Out of which 470 are yellow round, 130 are yellow wrinkled 170 are green round and 30 are green wrinkled. By means of Chi-square test, find out whether these values are deviated from Mendel’s dihybrid ratio 9:3:3:1 (Table value 7.81 @) 5% level of significance)

19. Write a detailed account on the classification of computers.

20. Write an essay on proteomics and its types.



09SB51



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2015

Part – IV : Skill Based Subject : Fifth Semester : Paper – I

SERICULTURE TECHNOLOGY

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions :

(10 × 1 = 10)

1. The silkworm belongs to the class
 - a) Insecta
 - b) Morigulture
 - c) Apiculture
 - d) Aqua culture
2. The silk contains _____.
 - a) Carbohydrate
 - b) Protein
 - c) Vitamin
 - d) Mineral
3. How many instars in the life cycle of silkworm
 - a) Five
 - b) Four
 - c) Two
 - d) Three
4. The root rot diseases caused by
 - a) Bacteria
 - b) Fungus
 - c) Virus
 - d) Nematodes
5. Which is the common pest of silkworm _____.
 - a) Mosquito
 - b) House fly
 - c) Uzi fly
 - d) Honey bee
6. Expand CSRTI.
7. Expand CSB.
8. Expand ICTRETS.
9. Expand NSP.
10. Expand SSTL.

SECTION – B

Answer ALL Questions :

(4 × 10 = 40)

11. a) Discuss the physical characters of cocoons considered for commercial purposes.

(OR)

b) Write the structure of Rearing house.
12. a) Describe the methods of Pruning.

(OR)

b) Describe the seedling propagation method of Mulberry.
13. a) Describe the method of stifling.

(OR)

b) Discuss the silk gland of silkworm with neat labelled diagram.
14. a) Write a short note on defective cocoons.

(OR)

b) Write a short note on methods of Irrigation.

SECTION – C

Answer any TWO Questions :

(2 × 12½ = 25)

15. Critically discuss on life cycle of Bombyx mori.
16. Explain the Vegetative propagation of mulberry.
17. Discuss the appliances used in silkworm rearing.

