



Course Code: 09CT11

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

Residential & Autonomous – A Gurukula Institute of Life-Training
Re-accredited (3rd Cycle) with 'A' Grade (CGPA 3.59 out of 4.00) by NAAC
[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2020

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

INVERTEBRATES-I

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- The father of taxonomy is____
a. Darwin b. Edward Jenner c. Linnaeus d. Fleming
- Which organ is targeted and infected by Trypanosoma?
a. Heart b. Brain c. Liver d. Kidney
- Pore-bearing animals are generally called____
a. Parasites b. Corals c. Hydra d. Sponges
- Gemmules are helpful in____
a. Digestion b. Survival in drought c. Secretion of Spicules d. Sexual reproduction
- Medusa of Obelia is____
a. Free swimming b. Fixed and Non-mobile c. Floating d. None of these
- Which one of the following animals is a “Beautiful gardens of the sea”
a. Earthworm b. Pinworm c. Coral reef d. Taenia
- Rabdities are present in the cells of the epidermis in____
a. Turbellaria b. Trematoda c. Cestoda d. All of these
- Find out the first formed Metazoa
a. Chordates b. Coelenterates c. Sponges d. Invertebrates
- What is the infective stage of *Enterobius vermicularis* for human?
a. Miracidium b. Cercaria c. Redia d. Egg
- Third moulting of *Ascaris* occurs in____
a. Liver b. Kidney c. Lung d. Intestine

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Define: Digenic host.
- List out the symptoms of Amoebiasis.
- What are the functions of Choanocytes?
- Comment on Proterospongia.
- What is Rhabditiform larva?
- Differentiate between karyokinesis and cytokinesis.
- Draw and label the structure of the sporocyst larva.

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

- a) With neat sketch discuss the structure of Paramecium. (OR)
b) Describe the life cycle of *Entamoeba histolytica*.
- a) Write an account on the structure of Leucosolenia. (OR)
b) Give a short note on the Reproduction in sponges.
- a) List out the affinities of Ctenophora (OR)
b) Narrate the Blastostyles of *Obelia*.
- a) Write the general characters of class Turbellaria with examples. (OR)
b) Describe the excretory system of Liver fluke.
- a) Explain the parasitic adaptations of Aschelminthes (OR)
b) Write the salient features of phylum Nematoda.

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Write a detailed account on the lifecycle of *Plasmodium* and its control measures.
24. Write an essay on canal system in Sponges.
25. Give an account of coral reefs, types and their significance.
26. Give a detailed account of the general characters of Platyhelminthes.
27. Briefly explain the life cycle of *Ascaris* with neat diagrams.

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Course Code: 09CT12

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

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

COURSE TITLE: INVERTEBRATE II

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A Multiple choice questions

Answer All Questions:

(10X1=10 Marks)

- Parapodia is found in
a) Earthworm b) Prawn c) Nereis d) Cockroach
- The blood of nereis is red coloured due to the presence of
a) Haemoglobin b) Haemoerythrin c) Pinnoaglobin d) Chlorocruorin
- Which of the following is living fossil belongs to the phylum Arthropoda?
a) Peripatus b) Housefly c) Limulus d) Prawn
- Which of the following is living fossil belongs to the phylum Arthropoda?
a) Peripatus b) Housefly c) Limulus d) Prawn
- Which is the connective link between Annelida and Arthropoda?
a) Peripatus b) Housefly c) Limulus d) Prawn
- Scorpion belongs to the phylum____
a) Arthropoda b) Annelida c) Nematoda d) Mollusca
- Insect which yield useful products are called ____
a) Beneficial insects b) Harmful insects c) Productive insects d) Parasitic insects
- Blood of pila contain _____ pigment.
a) Heamocyanin b) Heamoglobin c) Pinnoaglobi d) Chlorocruorin
- Which ganglia situated on the inner side of the pleural ganglia in pila nervous system?
a) Pedal b) Visceral c) Buccal d) Cerebral
- Which of these groups has no parasitic forms?
a) Echinodermata b) Nematoda c) Protozoa d) Arthropoda

SECTION – B Very short answer

Answer any Five Questions:

(5X2=10 Marks)

- What is metamerism?
- Write a short note on tagmatization
- What is the function of carapace in crustaceans?
- Give a short note on prosoma.
- Comment on termitarium.
- Define polymorphism.
- What are living fossils?

SECTION – C Short answer

Answer any Three Questions

(5X5=25 Marks)

18. a) Bring out the general characters of phylum arthropoda.

(OR)

b) Give an account on the salient features of annelids.

19. a) Define direct and indirect development.

(OR)

b) Comment on the affinities of peripatus.

20. a) Critically comment on torsion in gastropods.

(OR)

b) Describe the external characters of scorpion

21. a) Enumerate the general characters of centipedes.

(OR)

b) Write a note about the productive insects.

22. a) Describe briefly the cast system in termite.

(OR)

b) Discuss briefly the social life of insects.

SECTION – D Long Answer

Answer any One Question:

(3X10=30 Marks)

23. Explain in detail the adaptive radiation in Polycheates

24. Discuss in detail the larval forms of crustacean.

25. Write an essay on economic importance of insects.

26. Elaborately discuss the digestive system of pila with a neat diagram

27. Describe in detail the circulatory system of star fish.



Course Code: 09NE11

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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B.A./B.Sc./B.Com./B.Com.(CA) Degree (Semester) Examinations, November 2020

Part – IV : NME : First Semester

Course Title: Human Anatomy

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- Tactile is present in ____
a. Eye lens b. Heart c. Hair d. Liver
- Which one of the muscles is responsible for movement of hair?
a. Arrector Pili b. Kidney c. Blood d. Urinary bladder
- Amylase enzymes is found in ____
a. Bile b. Gastric juice c. Saliva d. None of the above
- Glycogen is stored in ____
a. Blood b. Liver c. Lungs d. Kidney
- The “Horse-shoe” shaped nuclei are present in ____
a. Monocytes b. Lymphocytes c. Eosinophils d. Basophils
- Which one of the following is the last part of the branches in lung and takes part in exchanges of gases?
a. Tracheoles b. Alveolar c. Bronchioles d. Alveoli
- Which part of mammalian brain control the muscles coordination?
a. Cerebrum b. Cerebellum c. Corpus callosum d. Medulla
- The pigment found in rods is ____
a. Retinene b. Melanin c. Photopsin d. Keratin
- Master endocrine gland is ____
a. Parathyroid b. Pineal c. Pituitary d. Thyroid
- Hormone is a ____
a. Glandular secretion b. Excretory products c. Enzyme d. Chemical messenger

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- What is Pericardium?
- Write the name of Thyroid gland hormones.
- Comment on Diastolic pressure.
- Write the role of Cerebellum.
- Comment on Pancreas.
- State the functions of Testosterone.
- List out the any two functions of skin.

SECTION – C

Answer ALL Questions:

(3 X 9 = 27 Marks)

18. (a) Write down the various types of tissues.

(Or)

(b) Explain the structure of Human tooth.

19. (a) Draw and label the structure of alimentary canal in Man.

(Or)

(b) Describe the female reproductive system in Human.

20. (a) What is Pituitary gland? Explain the functions of growth hormone.

(Or)

(b) Narrate the structure of Human ear.

SECTION – D

Answer Any Two Questions:

(2 X 14 = 28 Marks)

21. Briefly explain the structure of Human Kidney.

22. Give an account on ABO Blood groups.

23. Briefly discuss the structure of Human heart.

24. Describe the structure of Human Eye



Course Code: 09CT31

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

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

Course Title: CELL BIOLOGY

Under CBCS and OBE – Credit 4

Time: **3 Hours**

Max. Marks: **75**

SECTION – A (Remembering)

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions from Question Bank (Two Questions from each Unit)

1. Cell theory states that
 - a) All living organisms are made up of cells
 - b) Cell is the basic unit of life
 - c) Cells arise from pre – existing cells
 - d) All the above
2. .In centrifugation, rpm refers to
 - a) Randomly processed material
 - b) Rotation per minute
 - c) Revolution per minute
 - d) Really processed molecules
3. Endocytosis means
 - a) Phagocytosis
 - b) Pinocytosis
 - c) Both a and b
 - d) cell vomiting
4. Main function of lysosome is
 - a) Secretion
 - b) Respiration
 - c) Extracellular digestion
 - d) Intracellular digestion
5. Mitochondrial matrix has enzymes for
 - a) Krebs cycle
 - b) TCA cycle and electron transport
 - c) Glycolysis and TCA cycle
 - d) b and c
6. Organelle capable of self-replication is
 - a) Ribosome
 - b) Endoplasmic Reticulum
 - c) Lysosome
 - d) Mitochondrion
7. Circular structure enclosing nuclear pore is known as
 - a) Annulus
 - b) Circular ring
 - c) Octagonal ring
 - d) Outer membrane
8. G1 phase represents
 - a) DNA synthesis
 - b) Transcription of mRNA
 - c) Enlargement of cytoplasmic inclusions
 - d) Translation
9. Watson and Crick's double helical DNA is ---- type.
 - a) A
 - b) B
 - c) Z
 - d) D
10. Gene expression refers to
 - a) DNA - Protein - RNA
 - b) RNA – Protein – DNA
 - c) Protein – DNA – RNA
 - d) DNA – RNA – Protein

SECTION – B (Remembering)

Answer Any Five Questions:(At least One Question from each Unit)

(5 X 2 = 10 Marks)

11. Define the term resolving power.
12. What is fixation?
13. What are residual bodies?
14. Define Oxidative phosphorylation.
15. Define cell aging.
16. State Chargaff's rule.
17. What are Okazaki fragments?

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Give an account on cell theory.

(OR)

b) Write down the procedure for isolation of cellular components.

19. a) Describe the fluid – mosaic model of cell membrane with a labelled sketch.

(OR)

b) Enumerate the functions of lysosomes.

20. a) With a labelled sketch, describe the structure of mitochondrion.

(OR)

b) Comment on the structural organization of ribosome and add its function.

21. a) Describe the ultrastructure of nucleus with a neat diagram.

(OR)

b) Give an account on giant chromosomes. Add their significance.

22. a) Highlight the specific role of mRNA and ribosomes in protein synthesis.

(OR)

b) Analyze the regulation of gene expression in *lac* Operon.

SECTION – D (Applying)

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Explain the working principle, components, and advantages of electron microscope.

24. Enumerate the functions of plasma membrane.

25. Discuss Krebs cycle and its energetics.

26. Trace out the molecular events taking place during meiosis with representative figures.

27. Expound the molecular structure of DNA explanatory figure.



B.Sc. Zoology Degree (Semester) Examinations, November 2020
Part – III : Core Subject : Third Semester : Paper – II

Course Title: GENETICS

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

Multiple Choice Questions

1. The phenotypic ratio of monohybrid cross is (CO1)
a. 3:1 b. 1:2:1 c. 1:1 d. 9:3:3:1
2. Who claimed to observe a mini form of man inside the sperm? (CO1)
a. Hertsoeker b. Bateson c. Weismann d. Pythagorus
3. The universal blood donors for the ABO system are type: (CO2)
a. AB b. A c. B d. O
4. Who proposed three genes are involved in the production of Rh antigen? (CO2)
a. Wiener b. Fisher c. Mendel d. None
5. Crossing over is more frequent in (CO3)
a) males b) females c) both d) None of these
6. Who coined the term linkage? (CO3)
a) Correns b) Mendel c) Morgan d) De Vries
7. Which of the following type of sex determination occurs in man? (CO4)
a. XX – XO b. XY – XO c. XX – XY d. XXX - XY
8. The Y linked genes are called (CO4)
a. Chromosomes b. Sex linkage c. HH gene d. Holandric gene
9. The accumulation of phenylalanine in the blood is called (CO5)
a. Hyperaemia b. Phenylketonuria c. Polyuria d. Polydipsia
10. The science of improvement of existing human race is called (CO5)
a. Euthenics b. Eugenics c. Negative eugenics d. Polygenesis

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

11. What is backcross? (CO1)
12. Comment on mendelism (CO1)
13. Comment on acromelanism (CO2)
14. What is coupling? (CO3)
15. Differentiate autosome and allosome (CO4)
16. Comment on Barr body (CO4)
17. Define the extra chromosomal inheritance (CO5)

SECTION – C (Understanding)

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Write the reasons for Mendel's success (OR) (CO1)
b) Analyse the biochemical basis of Epitasis (CO1)
19. a) Analyse the genetic basis of Rh blood group (OR) (CO2)
b) With reference to polygenic inheritance, discuss the inheritance of skin colour in man (CO2)
20. a) Describe the mechanism of crossing over and its significances (OR) (CO3)
b) Discuss the procedure for chromosome mapping with an illustration (CO3)
21. a) Write an account on colour blindness (OR) (CO4)
b) Explain the bleeder's disease with suitable examples (CO4)
22. a) Describe the aim and purpose of genetic counseling (OR) (CO5)
b) Analyse the term twins and its types. (CO5)

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Write an essay on Mendel's law with illustrations (CO1)
24. Describe the genetics of ABO blood group (CO2)
25. Describe the types of linkage with examples (CO3)
26. Discuss in detail about chromosomal theory of sex determination in animals (CO4)
27. Write an essay on extra chromosomal inheritance of shell coiling in *Limnaea* (CO5)



Course Code: 09SB31

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

Part – IV : SBS : Third Semester

Course Title: Public Health and Hygiene

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- Which is the important role in the calcification of bones?
a. Magnesium b. Iron c. Zinc d. Phosphorus and calcium
- Night blindness is a ____ deficiency
a. Vitamin A b. Vitamin B c. Vitamin C d. Vitamin D
- Physical, mental and social well- being is related to
a. Disease b. Health c. Environment d. Ecology
- In earth, the freshwater is
a. 5% b. 3% c. 9% d. 25%
- Which is an inflammation of the nervous system causing paralysis in child
a. Cholerae b. TB c. *Tinea versicolor* d. Polio
- Dengue fever is transmitted by the bite of an *Aedes*
a. Rat b. Housefly c. Mosquito d. Birds
- ____ is a central nervous stimulant
a. Cocaine b. Cannabis c. barbiturates d. Heroin
- Diabetes is a
a. Low sugar level b. High urea in blood c. Low urea in blood d. High blood sugar
- National anti -malarial programme was started in
a. 1999 b. 2000 c. 2004 d. 1998
- National Tuberculosis Institute is located in
a. Chennai b. Bangalore c. Mumbai d. Delhi

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Define Balanced diet.
- What is holard?
- List out the significance of water.
- What is alcoholism?
- Comment on First aid.
- Enlist the symptoms of Beri-Beri.
- Comment on Filariasis.

SECTION – C

Answer ALL Questions:

(3 X 9 = 27 Marks)

18. (a) Explain the scope and importance of public health and hygiene.

(Or)

(b) Elucidate the various methods of sewage treatment.

19. (a) Describe the causative organism and preventive measures of Rabies.

(Or)

(b) Narrate the Hypertension.

20. (a) Highlight the role NGOs in Public health education.

(Or)

(b) Discuss the causative agent, symptoms, prevention and treatment of Amoebiasis.

SECTION – D

Answer Any Two Questions:

(2 X 14 = 28 Marks)

21. Briefly discuss the various methods of solid waste disposal in Rural areas.

22. “AIDS is a dreadful disease”-Justify.

23. Give a detailed account of Coronary Heart Disease.

24. Write an account of the physiological role of carbohydrates, protein and fat.



Course Code: 09AT01

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B.Sc. Chemistry / Botany Degree (Semester) Examinations, November 2020

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

COURSE TITLE: ANIMAL ORGANIZATION

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A Multiple choice questions

Answer All Questions:

(10X1=10 Marks)

- Which of the following is asymmetrical?
a) Hydra b) Sponges c) Sea anemone d) Frog
- Which of the following does not contain coelom?
a) Porifera b) Coelenterata c) Platyhelminthes d) All the above
- The functional role of contractile vacuoles in paramoecium is
a) Thermoregulation b) food storage c) Osmoregulation d) digestion
- The sol-gel theory of amoeba was proposed by
a) Dellinger b) Jennings c) Berthold d) Hyman
- The nervous system of earthworm consists of a _____?
a) Nerve ring b) Glandular cells c) Skeleton d) Capillaries
- Largest portion of brain is _____
a) hypothalamus b) cerebellum c) thalamus d) cerebrum
- In amoeba the respiration is carried out by _____
a) Gills b) Pseudopodia c) Spiracles d) Contractile Vacuole
- The rod cells of retina contain
a) Rhodopsin b) Iodopsin c) melanin d) chromatophores
- In the excretory system of earthworm nephrostomes are the part of
a) Meganephridia b) micronephridia c) Pharyngeal nephridia d) none of these
- The process of reabsorption of water in kidney is known as _____
a) Active process b) Passive process c) both a and b d) none of these

SECTION – B Very short answer

Answer any Five Questions:

(5X2=10 Marks)

- Define taxonomy.
- What is symmetry?
- Mention the functions of contractile vacuoles.
- Give a short note on peristomium.
- Comment on metanephridium.
- Write a note about cranium.
- Give a brief account on sensory organ.

SECTION – C Short answer

Answer any Three Questions

(5X5=25 Marks)

- a) Define coelom. Classify the animals based on the coelom.(OR)
b) List out the general characters of phylum arthropoda.
- a) Enlist the salient features of protozoa. (OR)
b) Describe the locomotory mechanism in amoeba.
- a) Explain the feeding mechanism and food digestion in paramecium.(OR)
b) Give a short account on ingestion in paramecium.

21. a) Write a short note on photoreceptor in man. (OR)
b) Comment on compound eye of insect with neat sketch.
22. a) Write a short note about the flight muscles in birds. (OR)
b) Describe briefly the respiratory organs of fish.

SECTION – D Long Answer

Answer any One Question:

(3X10=30 Marks)

23. Write an essay on principles of taxonomy and binomial nomenclature.
24. Give a detailed account on the respiratory mechanism of cockroach.
25. Write an account on the flight mechanism in birds.
26. Describe in detail the nervous system of earthworm.
27. Give an account on the male and female reproductive system of rabbit.



Course Code:09CT51

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

Part – III : Core Subject : Fifth Semester

Course Title: **Biochemistry and Biophysics**

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- The term pH was introduced by
 - Carl Neuberg
 - Soren Sorenson
 - Good et al.,
 - Bloor
- Which of the following is called “milk sugar”?
 - Maltose
 - Lactose
 - Sucrose
 - Glucosheptulose
- The enzyme formed of a protein part and a non-protein part is together called
 - Coenzyme
 - Endoenzyme
 - Exoenzyme
 - Holoenzyme
- Active site of an enzyme is formed of
 - Amino group of some amino acids
 - Carboxyl groups of specific amino acids
 - HS bonds of amino acids
 - R-groups of selected amino acid
- Glycolysis occurs in
 - Cytosol
 - Mitochondria
 - Golgi complex
 - Ribosomes
- Which one of the following is important in carbohydrate and fat metabolisms?
 - Pyruvic acid
 - Citric acid
 - Acetyl coenzyme A
 - CO₂
- The biological oxidation, oxidation is considered as removal of
 - H₂O
 - CO₂
 - Electrons
 - All
- Which of the following is involved in the biosynthesis of fatty acids?
 - ACP
 - ATP
 - ADP
 - FDP
- The colloidal particles exhibit a random ZigZag motion is called
 - Surface tension
 - Brownian movement
 - Tyndall effect
 - Osmosis
- The energy transformation in the biological system is called -----
 - Biodiversity
 - Bio-mining
 - Bioenergetics
 - Bioremediation

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Define the electrolytes.
- What is Zwitterion?
- What are isoenzymes?
- What are coenzymes?
- What is deamination?
- Define Biological oxidation.
- What is Gibbs free energy?

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

18. a) Describe the structure of glucose molecule.

(OR)

b) Mention the biologically important chemical bonds and their importance.

19. a) Explain the Mechanism of enzyme action.

(OR)

b) Describe the structure and functions of cholesterol.

20. a) Enlist the biologically important high energy compounds.

(OR)

b) List out the biological importance of ATP.

21. a) Write notes on glycogenesis.

(OR)

b) Comment on urea cycle.

22. a) Enumerate the general properties of colloids.

(OR)

b) What is redox Potential? Add a note on its importance in biological system.

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Describe the structure of proteins.

24. Write an account of the various factors affecting enzymes activity.

25. Narrate the β -oxidation of fatty acids.

26. Explain oxidative phosphorylation process.

27. What is bioelectricity? Explain the spontaneous electrical activity of the brain and the factors that alter the EEG pattern.



Course Code: 09CT52

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

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

Course Title: BIOTECHNOLOGY

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- The IPR is protected by
a. Patents b. Copyright c. Trade Mark d. All of these
- The restriction enzymes are called as
a. Molecular scissors b. Ligases c. Plasma gene d. All of these
- The plasmid containing foreign DNA fragment in to a bacterial cell is known as
a. Transfection b. Transformation c. Transduction d. Illumination
- Sanger's method of DNA sequencing is also known as
a. Dideoxy method b. Klenow methods c. Both a & b d. Transformation method
- The variation in the restriction DNA fragment lengths of different species is
a. RFLP b. AFLP c. SSR d. RAPD
- DNA profiling is applied in comparison of different animal species is
a. Phylogenetic blot b. Animal profiling c. Zoo blot d. Animal blot
- Cry genes or Bt genes are obtained from
a. Cotton pest b. Tobacco plant c. *Bacillus thuringiensis* d. *E.coli*
- Technique of SCP is introduced by
a. Gregor Mendel b. Louis Pasteur c. Scrimshaw d. Ian Wilmot
- Process of replacing defective genes with effective genes is known as
a. transgenic fusion b. transgenic budding c. transgenic injection d. gene therapy
- Northern blotting is performed for _____
a) Determining the size of DNA b) Determining the size of RNA c) Quantification of RNA
d) Sequencing of RNA

SECTION – B

Answer Any Five Questions:(at least One Question from each Unit)

(5 X 2 = 10 Marks)

- Define: IPR.
- What are shuttle vectors?
- Mention the importance of genomic library.
- Comment on *Thermus aquaticus*.
- What are bio-fertilizers and biopesticides?
- Comment on GMO organisms.
- Define the term Bioremediation.

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

- a) What is patent rights? Describe the procedure for obtaining a patent right. (OR)
b) Explain the vector pBR 322 with neat labelled diagram
- a) Write an account on gene cloning. (OR)
b) Write a short account on any two methods of DNA sequencing.
- a) Discuss briefly the principle and applications of Southern blot. (OR)
b) What is RFLP? Explain its methods and application.

21. a) Give a short note on tissue plasminogen activator (tPA). (OR)
b) Write a note on the following:
i. Blood factor VIII
ii Erythropoietin (EPO).
22. a) Discuss briefly strategies and methods of production of biogas. (OR)
b) Write a short note on the creation of genetically modified organisms and their significance.

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Write a detailed account on types and significance of restriction enzymes.
24. Explain in detail the methods of rDNA into bacterial cell.
25. Write an essay on the polymerase chain reaction (PCR) and discuss its principles and applications.
26. Give a detailed account on transgenic animals with examples.
27. Explain in detail the monoclonal antibody production and its applications.



Course Code: 09CT53

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

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[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2020

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

Course Title: Microbiology and Immunology

Under CBCS and OBE – Credit 4

Time: 3 Hours

Max. Marks: 75

SECTION – A

Answer ALL Questions:

(10 X 1 = 10 Marks)

- 1) The first virus was discovered by Ivanowski in (CO1)
a) 1896 b) 1897 c) 1898 d) 1899
- 2) The enriched medium contains (CO1)
a) Blood b) Serum c) Yeast extract d) All
- 3) Pick out the soil protozoans (CO2)
a) Uroleptus b) Navicula c) Fragilaria d) Cyamella
- 4) In a plate count method, the colonies are counted by a (CO2)
a) Quebec colony counter b) nephelometer c) colorimeter d) spectrophotometer
- 5) DPT vaccination prevent the occurrence of (CO3)
a) Diphtheria b) Whooping cough c) Tetanus d) All the above
- 6) Which is the causative organism of Diphtheria? (CO3)
a) Bordetella b) Mycobacterium c) Corynebacterium d) Streptococcus
- 7) Virulence reduce microbes used for vaccination are considered as (CO4)
a) Toxoid b) Dormant c) A virulent d) Attenuated
- 8) Vaccination against small pox was discovered by (CO4)
a) Edward Jenner b) Benjamin Jesty c) Mary Worley d) None of these
- 9) Humoral immunity is mediated by (CO5)
a) B Cells b) Macrophages c) T cells d) All the above
- 10) Auto immunity is caused by (CO5)
a) Bacteria b) Virus c) T dependent antigens d) Self antigens

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- 11) Comment on actinomycetes. (CO1)
- 12) Define: Transduction. (CO1)
- 13) What is botulism? (CO2)
- 14) What is pathogenicity? (CO3)
- 15) List out the major targets of defense system. (CO4)
- 16) Define: Immunoglobulins (CO4)
- 17) Expand and define ELISA. (CO5)

SECTION – C

Answer ALL Questions:

(5 X 5 = 25 Marks)

- 18) a) Give a brief account on the scope of microbiology. (OR) (CO1)
b) Narrate the lytic cycle of T4 bacteriophage. (CO1)
- 19) a) Explain the MPN test. (OR) (CO2)
b) Elucidate the standard plate count method. (CO2)
- 20) a) Bring out the causative organism and preventive measures of rabies. (OR) (CO3)
b) Describe the symptoms, causes and control methods of cholera. (CO3)
- 21) a) Give a note on the physical and mechanical factors of innate immunity. (OR) (CO4)
b) Define vaccine and tabulate the immunization schedule. (CO4)
- 22) a) Discuss briefly the double immunodiffusion. (OR) (CO5)
b) Give an account on hypersensitivity and its types. (CO5)

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

- 23) Write an account on various types of culture media with examples. (CO1)
- 24) Briefly discuss the physical and chemical methods of food preservation. (CO2)
- 25) “AIDS as a dreadful disease” – Justify. (CO3)
- 26) Discuss elaborately the structure and functions of primary lymphoid organs. (CO4)
- 27) Give a detailed account on principle and applications of immunoelectrophoresis. (CO5)

SECTION – D

Answer Any Three Questions:

(3 X 10 = 30 Marks)

23. Prepare a frequency table with class intervals of weight of 50 Tilapia in grams collected from a pond

21,8,17,15,16,12,7,8,12,15,9,10,21,16,35,32,45,48,34,35,9,14,7,6,12,41

15,24,26,27,30,32,17,18,19,41,43,46,50,40,34,18,14,8,7,10,11,13,14,42 (CO1)

24. Compute standard deviation and coefficient of variation for the following data which shows the weight of fishes in grams (CO2)

Weight of fishes (g)	0-10	10-20	20-30	30-40	40-50
No. of fishes	4	3	9	6	5

25. In a dihybrid experiment in F₂ generation the following plants appear yellow round 920, yellow wrinkled 280, green round 320 and green wrinkled 80. With the help of χ^2 test, verify that 9:3:3:1 ratio is followed. Tabulated χ^2 value at 5% level is 7.81 (CO3)

26. Describe the methodology and special features of slide preparation with animation using MS powerpoint **(CO4)**

27. Explain various types of BLAST and how will you perform a nucleotide BLAST comparison **(CO5)**



Course Code: 09SB51

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B.Sc. Zoology Degree (Semester) Examinations, November 2020

Part – IV : SBS/NME : Fifth Semester : Paper – I

Course Title: SERICULTURE

Under CBCS – Credit 2

Time: 2 Hours

Max. Marks: 75

SECTION – A Answer ALL Questions:

(10 X 1 = 10 Marks)

- Study of silkworm is called (CO1)
a) Sericulture b) Moriculture c) Apiculture d) Aqua culture
- Specify the class which includes silkworm (CO1)
a) Insecta b) myriapoda c) Gastropoda d) None of these
- The Powdery mildew diseases caused by (CO2)
a) Bacteria b) Fungus c) Virus d) Nematodes
- The root rot diseases caused by (CO2)
a) Bacteria b) Fungus c) Virus d) Nematodes
- Which one is caused muscardine diseases to silkworm? (CO3)
a) Virus b) bacteria c) Fungi d) Protozoan
- The silk contains_____ (CO3)
a) Carbohydrate b) Protein c) Vitamin d) Mineral
- Which is the common pest for the silkworm? (CO4)
a) Mosquito b) House fly c) Uzi fly d) Honey bee
- Raksha Rekha is a replant for (CO4)
a) Ant b) Uzi fly c) House fly d) Rat
- The dead pupa is found sticking to the inner shell of the cocoon is called (CO5)
a) Mute cocoon b) Rust cocoon c) Premature cocoon d) Fragile cocoon
- The unwinding of silk thread from the cocoon is called (CO5)
a) Silk reeling b) Pruning c) Mulching d) Irrigation

SECTION – B

Answer Any Five Questions:

(5 X 2 = 10 Marks)

- Expand and list out the functions of CSB. (CO1)
- State the significance of mulching. (CO2)
- Give the symptoms and causes of root rot disease in mulberry. (CO2)
- Comment on Brushing. (CO3)
- Define Mounting. (CO3)
- Explain the process of harvesting. (CO4)
- Enumerate the advantages and disadvantages of chandrika. (CO5)

SECTION – C

Answer ALL Questions:

(3 X 9 = 27 Marks)

- a) Describe the type of silkworms. (OR) (CO1)
b) Explain the methods of Irrigation. (CO2)
- a) What is pruning? Give its advantages. (OR) (CO2)
b) Discuss the silk gland of silkworm with neat labelled diagram. (CO3)
- a) Describe the method of stifling. (OR) (CO4)
b) Describe the different types of defective cocoons. (CO5)

SECTION – D

Answer Any Three Questions:

(2 X 14 = 28 Marks)

- Discuss elaborately the seedling propagation. (CO2)
- Write an essay on different methods of vegetative propagation in mulberry. (CO2)
- Enumerate the different types of rearing appliances used in sericulture. (CO3)
- Give a detailed account on characteristics of cocoons. (CO4)