Dept. of Zoology | **I M.Sc., ZOOLOGY** | II Sessional Test
Vivekananda College | | Ist Semester
Tiruvedakam West | | Max. Marks: 50
Date: **03/08/2018** | | Time: 2 Hours

BIOCHEMISTRY- 31CT11

ANSWER ALL QUESTIONS **SECTION – A** **5X1=5 Marks**

Multiple choice questions:

1. In starch amylose and amylopectin are linked by _____linkage.

a. (α 1→ 4) b. (β1→4) c. (α1→ 6) d. (α2→6)

2. Which of the following is plays a special role in the brain metabolism?

a. Glutamic acid b. Pyruvic acid c. Lysine d. Aspartic acid

3. Acute uremia is associated with

a. Anuria b. Citrulinemia c. Aciduria d. Cystinosis

4. A normal healthy man excretes ---------- to ---------- grams of urea per day

a. 5, 10 b. 15, 20 c. 25, 30 d. 35, 40

5. The number of ATP produced when a molecule of acetyl CoA is oxidized through citric acid cycle.

a. 12 b. 24 c. 38 d. 15

ANSWER ANY FIVE QUESTIONS **SECTION – B** **5X2=10 Marks**

Very short answer:

6. Define anomers and anomeric carbon.
7. What are pyranoses?
8. Discriminate aldoses and ketoses.
9. What is transamination?
10. What do you mean by transmethylation?
11. Comment on Glycogenesis.
12. What is Pasteur effect.

ANSWER ANY THREE QUESTIONS **SECTION – C** **3X5=15 Marks**

Short answer:

13. Classify carbohydrates. Cite examples.
14. Give an account on disaccharides giving examples with molecular structures.
15. Briefly explain the metabolism of glutamate family of amino acids.
16. Explain the Ornithine cycle.
17. Draw a flow chart showing the reactions of Glycolysis.

ANSWER ANY ONE QUESTIONS **SECTION – D** 2**x10=20 Marks**

Long Answer:

18. Explain polysaccharides through molecular structures of glycogen and starch.
19. Describe the biosynthesis of Cholesterol.
20. Describe the hexose monophosphate shunt and add a note on its significance.

-o0o-

Dept. of Zoology | **I M.Sc., ZOOLOGY** | II Sessional Test
Vivekananda College | | Ist Semester
Tiruvedakam West | | Max.Marks: 50
Date: **04/09/2018** | | Time: 2 Hours

CELL AND MOLECULAR BIOLOGY- 31CT12

ANSWER ALL QUESTIONS **SECTION – A** **5X1=5 Marks**

Multiple choice questions:

1. The type of cell division occurs in somatic cells is ___
a. Mitosis b. Binary fission c. Meiosis d. Conjugation
2. Prokaryotic chromosomes lack the basic protein
a. Peptone b. Histone c. Albumin d. Protamines
3. The term endoplasmic reticulum was first coined in 1953 by
a. Porter b. Seikevitz c. Palade d. Ohand
4. 9. The Major function of the rough endoplasmic reticulum is_____
a. Glycogenolysis b. Synthesis of protein c. Detoxification d. Hydrolyses
5. In plasma membrane lipid bilayer is held together by
a. Hydrophobic interaction b. Ionic interaction c. Hydrophilic interaction
d. Van der Waals force

ANSWER ANY FIVE QUESTIONS **SECTION – B** **5X2=10 Marks**

Very short answer:

6. Comment on S- phase
7. What is a cell cycle check point?
8. What is Glycogenolysis?
10. Comment on lysosomal enzymes.
11. Define uniport, symport and antiport.
12. Differentiate active and passive transport.

ANSWER ANY THREE QUESTIONS **SECTION – C** **3X5=15 Marks**

Short answer:

13. Explain the various stages of Prophase of first meiotic division with sketches.
14. Describe the role of microtubules in chromosome movement during cell division.
15. Describe the various function of Rough Endoplasmic Reticulum (RER).
16. Explain briefly the origin and functions of lysosomes.
17. Elucidate the molecular organization of fluid mosaic model of plasma membrane with labelled sketch.

ANSWER ANY ONE QUESTIONS **SECTION – D** **2x10=20 Marks**

Long Answer:

18. Describe the molecular organisation of Interphase nucleus
19. Discuss in detail the structure and functions of Golgi complex.
20. Eloborate the communication occurring in the synoptic cleft during nervous conduction.

-o0o-

Dept. of Zoology | **I M.Sc., ZOOLOGY** | II Sessional Test
Vivekananda College | | I[st] Semester
Tiruvedakam West | | Max.Marks: 50
Date: **05/09/2018** | | Time: 2 Hours

MICROBIOLOGY- 31CT13

ANSWER ALL QUESTIONS **SECTION – A** **5X1=5 Marks**

Multiple choice questions:

1. Who is discover the 'Bacillus of Tuberculosis'

a. Roux b. Koch c. Louis Pasteur d. Jenner

2.___ is the centre of protein synthesis

a. Liposome's b. Cytoplasm c. Ribosomes d. Mitochondria

3. Agar is obtained from

a. Seaweed b. Fungi c. Yeast d. All the above

4. The normal flora of the human body is composed mainly

a. Fungi b. Protozoa c. Bacteria d. Viruses

5. The only effective type of immunity toward tuberculosis is ---------- immunity?

a. Humoral b. Cell mediated c. Both A and B d. None of these

ANSWER ANY FIVE QUESTIONS **SECTION – B** **5X2=10 Marks**

Very short answer:

6. What is Lyophilization?
7. Write the uses of algae.
8. What is nutrient?
9. Write the characteristics features of Fungi.
10. What are Salk vaccine and Sabin vaccine?
11. Define Candidiasis.
12. Differentiate normal flora and transient flora found on the human body.

ANSWER ANY THREE QUESTIONS **SECTION – C** **3X5=15 Marks**

Short answer:

13. Write the five kingdom concepts of classification.
14. List out the Robert Koch's postulates.
15. Explain the types of culture media.
16. What sequence of events occurs in infections caused by mycobacterium tuberculosis? How does the patient's immune response determine the outcome? How does BCG vaccine function?
17. In a tuberculosis infection, what is a tubercle and what types of immune response of the patient causes it?

ANSWER ANY ONE QUESTIONS **SECTION – D** **2x10=20 Marks**

Long Answer:

18. Write the difference between prokaryotic and eukaryotic microorganisms.
19. Write an essay on biology of Polio virus.
20. How can a normal flora microorganism become an opportunistic pathogen? Discuss with suitable example.

-o0o-

Dept. of Zoology
Vivekananda College
Tiruvedakam West
Date: **06.09.2018**

I M.Sc., Zoology

II Sessional Test
III Semester
Max.Marks: 50
Time: 2 Hours

BIOINFORMATICS – 31EP11

SECTION – A Multiple choice questions

Answer All Questions: **5X1=5 Marks**

1. How many packages in MS office?
   a. seven b. four c. three d. two
2. The short cut key for printing in MS office is
   a. Ctrl + P b. Ctrl + O c. Ctrl + V d. Ctrl + X
3. Among the public domain nucleotide datases, the one which acts as a hub is
   a. NCBI b.EMBL c.DDBJ d.Swiss-Port
4. The submirion tool for simple sequences in EMBL is
   a. Bankit b.Webin c.Sequein d.Sakura
5. In the closely related sequences the 'e' value in BLAST search will be
   a. higher b. lower c. zero d. very high

SECTION – B Very Short Answer

Answer any **FIVE** Questions: **5X2=10 Marks**

6. What are the characters of computer?
7. Write the functions of memory
8. Write a note on title bar of MS Excel
9. State the uses of internet
10. Write down the features of sakura submission tool of DDBJ.
11. What is PAM matrix?
12. Differentiate orthologus, paralogus & kenologus sequences.

SECTION – C Short Answer

Answer any **THREE** Questions: **3X5=15 Marks**

13. Discuss the important components of a computer
14. Write an account on operating system
15. What are the advantages and disadvantages of MS Word?
16. Differentiate the local and global alignment with suitable examples.
17. Give an account on various types of BLAST in NCBI.

SECTION – D Long Answer

Answer any **TWO** Questions: **2X10=20 Marks**

18. Write a detailed account on the classification of computers
19. How will compare and interpret the sequence comparison using BLAST?
20. Give a detailed account on intrinsic, extrinsic and composite methods of gene prediction.

PG & Research Department of Zoology **II M.Sc. - ZOOLOGY** II Sessional Test
Vivekananda College III Semester
Tiruvedakam West Max.Marks: 50
Date: **03 /09/2018** Time: 2 Hours

GENETICS (31CT31)

ANSWER ALL QUESTIONS SECTION – A (5X1=5 Marks)

Multiple choice questions:

1. The replacement of DNA from one base pair by another result in
   a. Transition b. Point mutation c. Transverstion d. Frameshift mutation
2. Mutation refers to
   a. Cross-linkage b. Termination c. Faulty mismatch repair
   d. A change in the DNA structure of genes
3. The DNA damage due to ultraviolet light often results in the _____
   a. Strand breaks b. Removal of the strand c. Copying errors d. Unwinding
4. A non – conjugative plasmid is one which
   a. cannot be replicated b. cannot trigger the sexual conjugation
   c. codes for toxins that kill conjugative plasmids d . triggers sexual conjugation
5. The function of a degradative plasmid is to
   a. start replication of transfer genes b. kill bacteria of related stains
   c. turn its host into pathogen d. breakdown uncommon compounds in its environment

ANSWER ANY FIVE QUESTIONS SECTION – B (5X2=10 Marks)

(Very short answer):

6. Define heteroduplex DNA.
7. Give a short note on genetic recombination.
8. Write a note on DNA repair.
9. Comment on photoreactivation.
10. Interpret the term copy number.
11. What is Ori-C?
12. What are selectable markers?

ANSWER ANY THREE QUESTIONS SECTION – C (3X5=15 Marks)

(Short answer):

13. Write a note on Spontaneous mutation.
14. With a neat sketch describe the molecular mechanism of frame shift mutation.
15. Focus light on mechanism of gene transfer in haploid organisms.
16. Write a note on types of plasmids andmention their significance.
17. Elucidate the molecular organization of the plasmid pBR^{322} with specific notations in labelled sketch.

ANSWER ANY ONE QUESTIONS SECTION – D (2**X10=20 Marks)**

(Long Answer):

18. Explain the various types of DNA repairing mechanism.
19. Discuss various methods for screening recombinants.
20. Analyze the rolling circle replication of plasmids and disclose its significance.

-o0o-

PG & Research Department of Zoology **II M.Sc ZOOLOGY** II Sessional Test
Vivekananda College III[rd] Semester
Tiruvedakam West Max.Marks: 50
Date: 04.09.2018 Time: 2 Hours

PHYSIOLOGY (31CT32)

ANSWER ALL QUESTIONS SECTION – A 5X1=5 Marks

Multiple choice questions:

1. In insects, the outer most surface is covered with
a. Cuticle b. Epicuticle c. Exocuticle d. All
2. The formation of hypertonic urine by the mammalian kidney depends on the control of
a. ADH b. LH c. LTH d. PTGH
3. Which of the following is carries both the sensory and motor information?
a. Motor nerves b. Sensory nerves c. Heart d. Mixed nerves
4. Alzhemer's disease in human is associated with the deficiency of
a. Dopamine b. Glutamic acid c. Acetylcholine d. Gamma aminobutyric acid
5. Blood vessels taking from the lungs to the heart are
a. Pulmonary artery b. Aorta c. Portal Vein d. Pulmonary Veins

ANSWER ANY FIVE QUESTIONS SECTION – B 5X2=10 Marks

Very short answer:

6. Define Osmosis.
7. What is osmoregulation?
8. Define: Euryhaline and Stenohaline.
9. Define: Ectotherms and Endotherms.
10. What is double circulation?
11. Define: Pacemaker.
12. Mention the significance of cerebrospinal fluid?

ANSWER ANY THREE QUESTIONS SECTION – C 3X5=15 Marks

Short answer:

13. Give a brief note on osmatic regulation.
14. Comment on ionic regulation.
15. Explain briefly the mechanisms of vision.
16. Write an account on Electrocardiogram and its function.
17. Distinguish between sympathetic and parasympathetic actions.

ANSWER ANY ONE QUESTIONS SECTION – D 2x10=20 Marks

Long Answer:

18. What is bioluminescence? Explain its mechanisms and functions.
19. Assess the role of hormones in invertebrate reproduction.
20. Write an essay on organisation of nervous system

-o0o-

Dept. of Zoology
Vivekananda College
Tiruvedakam West
Date: **05.09.2018**

II M.Sc., Zoology

I Sessional Test
III Semester
Max.Marks: 50
Time: 2 Hour

Principles of Biotechnology – 31CT33

SECTION – A Multiple choice questions

Answer All Questions: 5**X1=5 Marks**

1. Charan$_{16}$ vector is a part of _____ vector.
   a) Plasmid b) Yeast c) Phage d) Artificial chromosome
2. The total number of base pairs present in a 'COS' site of cosmid vector is
   a) 10-12 b) 12-15 c) 12-18 d) 12-22
3. Among all vectors, the maximum number of foreign DNA that can be inserted in
   a) M_{13} Phage b) pBR_{322} c) pUC_{19} d) Cosmid vector
4. Phasmid are the vectors which is a combination of
   a) Artificial chromosome and plasmid b) Cosmid and plasmid
   c) Phage and yeast chromosome d) Phage and plasmid
5. A collection of clones containing all DNA segments of the genome of an organism is called
   a) Genomic DNA library b) cDNA library c) Chromosome walking d) Chromosomal jumping

SECTION – B Very short answer

Answer any Five Questions: **5X2=10 Marks**

6. Comment on lamda gt11 vector.
7. Write short notes on gene cloning strategies.
8. Give an advantage of using phage as vector.
9. Mention the regions of restriction sites of phage vector.
10. Write short notes on GEO (Genetically Engineered Organism).
11. Mention uses of Genomic DNA library.
12. Comment on Sequence tagged Sites (STS).

SECTION – C Short answer

Answer any Three Questions **3X6=18 Marks**

13. Explain the various insertional and replacement vectors of phage.
14. Describe various aspects of cosmid vector.
15. Differentiate, human, yeast and bacterial artificial chromosomes.
16. Discuss the social and ethical issues in Bioethics.
17. How will you construct a genomic DNA library using shot gun cloning method?

SECTION - D Long Answer

Answer any Two Questions: **2x10 = 20 Marks**

18. Write an essay on various types of plasmid vectors.
19. Give a detailed account on Gene-transfer techniques.
20. Discuss the procedure for construction of cDNA library.

****

Dept. of Zoology
Vivekananda College
Tiruvedakam West
Date: **06.09.2018**

II M.Sc., & M.Com

II Sessional Test
III Semester
Max.Marks: 50
Time: 2 Hours

APPLIED BIOLOGY – 31NE31

SECTION – A Multiple choice questions

Answer All Questions: **5X1=5 Marks**

1. _____ refers to the process of heating the milk atleast63^{0}C for 30 minutes
   a. Sterilization b. Pasteurization c. Homogenization d. Fermentation
2. The aim of dairy farming is to create
   a. White revolution b. Blue revolution c. Green revolution d. All the above
3. Foot and mouth disease is caused by
   a. Virus b. Fungi c. Protozoa d. Bacteria
4. Human growth hormone is secreted by
   a. Pituitary gland b. Adrenal gland c. Thyroid gland d. Pancreas
5. Which one of the following is used for sperm sexing?
   a. hypotaurin b. epinephrine c. Hoechst 33342 d. None

SECTION – B Very Short Answer

Answer any FIVE Questions: **5X2=10 Marks**

6. Define karyotype.
7. Define the term Idiogram
8. What are adjuvants?
9. Comment on goals of HGP
10. What do you mean by hybrid?
11. List out any four disadvantages of embryo transfer
12. What is human growth hormone?

SECTION – C Short Answer

Answer any THREE Questions: **3X5=15 Marks**

13. What are vaccines? Explain the properties of a good vaccine.
14. Write a brief note on immunization in India.
15. Describe the management of a modal dairy farm.
16. Explain the structure of somatotropin with diagram.
17. Describe the method of embryo transfer in cow.

SECTION – C Long Answer

Answer any TWO Questions: **2X10=20 Marks**

18. Give an account on gene therapy.
19. Write an essay on human genome project.
20. Describe the production of human growth hormone.

****