

**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 31CT11	<b>Programme:</b> M.Sc.,	<b>CIA:</b> II Test
<b>Date:</b> 10.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> I
<b>Time:</b> 2Hrs	<b>Year:</b> I	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>BIOCHEMISTRY</b>	

**SECTION – A****ANSWER ALL QUESTIONS (Multiple choice questions): (5 X1= 5 Marks)**

- The end product of purine metabolism in humans is (CO5)
  - Xanthine
  - Uric acid
  - Urea
  - Allantoin
- The regulatory enzyme in the pyrimidine biosynthesis in animals is (CO5)
  - Fructose-6- Phosphatase
  - Aldolase
  - Carbamoyl phosphate synthetase II
  - PRPP- Synthetase
- The promotion of acetyl CoA takes place in (CO4)
  - Nucleus
  - Ribosomes
  - Lysosome
  - Mitochondria
- The hormone inhibited by thyroxine by feedback inhibition is (CO1)
  - TSH
  - FSH
  - LH
  - ADH
- The biosynthesis of pyrimidine nucleotide is controlled feedback inhibition of (CO1)
  - Allosteric effects of CTP
  - Competitive inhibition of UMP
  - Allosteric effects of TTP
  - Hyperactivity of aspartate transcarbamoylase

**SECTION – B****ANSWER ANY FIVE QUESTIONS (Very short answer): (5 X 2 =10 Marks)**

- What is Orotic aciduria? CO5
- Comment on Gout disease. CO5
- What is activation energy? CO1
- Define isoenzymes. CO1
- What is transamination? CO3
- What do you mean by ketonuria? CO4
- Define Omega oxidation CO4

**SECTION – C****ANSWER ANY THREE QUESTIONS (Short answer): (3 X 5 = 15 Marks)**

- Analyse briefly the biosynthesis of pyrimidine ribonucleotides CO5
- Explain the biochemical actions of prostaglandins. CO4
- Classify and describe the types of hormones. CO1
- Give an account on the catabolism of nucleotide co – enzymes. CO5
- Describe the ornithine cycle CO3

**SECTION – D****ANSWER ANY TWO QUESTIONS (Long Answer): (2 X10=20 Marks)**

- Describe the biosynthesis of purine ribonucleotides. CO5
- Discuss the enzyme kinetics with graphical representation. CO1
- Explain in detail the biosynthesis of fatty acids. CO4

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**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 33CT12	<b>Programme:</b> M.Sc.,	<b>CIA:</b> II Test
<b>Date:</b> 11.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> I
<b>Time:</b> 2Hrs	<b>Year:</b> I	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>CELL AND MOLECULAR BIOLOGY</b>	

**SECTION – A Multiple choice questions****Answer All Questions:****(5X1=5 Marks)**

- The formation of RNA complementary to a DNA strand is called (CO4)
  - Transcription
  - Translation
  - Processing
  - Gene amplification
- Stop codon signal termination of translation by binding (CO4)
  - release factors
  - amber
  - ochre
  - opal
- Which proteins inhibit the transcription of RNA from DNA? (CO5)
  - Acid proteins
  - Basic proteins
  - Histones
  - Neutral proteins
- In terms of lac Operon regulation, what happens when *E. coli* is grown in medium containing both glucose and lactose? (CO5)
  - Both CAP and the lac repressor are bound to the DNA.
  - CAP is bound to the DNA but the lac repressor is not.
  - Lac repressor is bound to the DNA but CAP is not.
  - Neither CAP nor the lac repressors are bound to the DNA.
- The total yield of ATP in Krebs cycle of eukaryotic cell is (CO1)
  - 35
  - 40
  - 30
  - 32

**SECTION – B Very short answer****Answer any Five Questions:****(5X2=10 Marks)**

- Define transformation. (CO4)
- What is holoenzymes? (CO4)
- Expand and define RFLP. (CO4)
- Write a short note on classical gene concept. (CO5)
- Give a short note on enzyme induction. (CO5)
- Comment on gene expression. (CO5)
- Give a short note on ATP. (CO1)

**SECTION – C Short answer****Answer any Three Questions****(3X5=15 Marks)**

- Describe the structure of DNA with reference to Watson and Crick model. (CO4)
- Justify the replication as a semiconservative process from Meselson and Stahl's experiment. (CO4)
- Enumerate the forms of DNA with labelled sketches. (CO4)
- Discuss in brief the mechanisms of enzyme repression. (CO5)
- Describe the respiratory chain and oxidative phosphorylation. (CO1)

**SECTION - D Long Answer****Answer any Two Questions:****(2x10 = 20 marks)**

- Narrate the stages of transcription in prokaryotes with neat diagrams. (CO5)
- Explain the mechanism of gene regulation in Eukaryotes. (CO5)
- Describe the Lac Operon in *E. coli*. (CO5)

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**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 31CT13	<b>Programme:</b> M.Sc.,	<b>CIA:</b> II Test
<b>Date:</b> 12.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> I
<b>Time:</b> 2Hrs	<b>Year:</b> I	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>MICROBIOLOGY</b>	

**ANSWER ALL QUESTIONS****SECTION – A****(5X1=5 Marks)****Multiple choice questions:**

- Nitrogen fixation refers to the direct conversion of atmospheric nitrogen gas into CO<sub>4</sub>  
a. Ammonia      b. Glucose      c. ATP      d. Nitrate
- Major faecal contaminant in potable water is CO<sub>4</sub>  
a. *Escherichia coli*      b. *Streptococcus faecalis*      c. Both a and b      d. *Escherichia coli* only
- Which one is antibacterial properties in relation to gram-positive bacteria? CO<sub>5</sub>  
a. Lactobacillus Kefiranolaciens      b. Candida Kefiz      c. Mucor      d. Penicilliumnottatum
- Food is spoiled by CO<sub>5</sub>  
a. Microorganisms      b. Insects      c. Enzymes activity      d. All of these
- \_\_\_\_\_ used the first large scale fermentor for the production of yeast. CO<sub>5</sub>  
a. De Becze&Liebmann      b. Sanger & Ogawa      c. Sanger &Shermau      d. Koltin& King

**ANSWER ANY FIVE QUESTIONS****SECTION – B****(5X2=10 Marks)****Very short answer:**

- Where does most photosynthesis take place? CO<sub>4</sub>
- What is eutrophication? CO<sub>4</sub>
- Define MPN test. CO<sub>4</sub>
- List out common microorganisms in soil. CO<sub>4</sub>
- Define fermentation CO<sub>5</sub>
- Mention the methods of quantify the microorganisms? CO<sub>2</sub>
- What is product recovery CO<sub>5</sub>

**ANSWER ANY THREE QUESTIONS SECTION – C****(3X5=15 Marks)****Short answer:**

- Write an account on role of microorganisms in regulation of carbon. CO<sub>4</sub>
- Discuss briefly the methods of food preservation. CO<sub>5</sub>
- Give a brief note on sewage treatment. CO<sub>4</sub>
- Elucidate the fermentation products from bacterial and fungal enzymes CO<sub>5</sub>
- Describe about downstream processing. CO<sub>5</sub>

**ANSWER ANY ONE QUESTIONS****SECTION – D****(2x10=20 Marks)****Long Answer:**

- Write a detailed account on various sources for contamination of water. How you will examine with microbial techniques? CO<sub>4</sub>
- What are the types of fermentation? Explain them with neat diagrams. CO<sub>4</sub>
- Briefly explain the reproduction and growth of microorganisms. CO<sub>2</sub>

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**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 31EP11	<b>Programme:</b> M.Sc.,	<b>CIA:</b> II Test
<b>Date:</b> 14.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> I
<b>Time:</b> 2Hrs	<b>Year:</b> I	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>BIOINFORMATICS</b>	

**SECTION – A Multiple choice questions**

Answer All Questions:

**5X1=5 Marks**

- HTML is what type of language? CO2  
a. Scripting Language b. Markup Language c. Programming Language d. Network Protocol
- Which of the following is a correct format of Email address? CO2  
a. name@website@info b. name@website.info c. www.nameofebbsite.com d. name.website.com
- What is the name of first computer virus? CO2  
a. The Famous b. HARLIE c. PARAM d. Creeper
- In gene finding the method rely on statistical information derived from known sequences to predict is CO4  
a. Pattern based b. content based c. computational based d. comparative based
- In the structural proteomics, the secondary structures of protein that are widely seen is CO5  
a.  $\alpha$ - helix b.  $\beta$ -sheets c. loops d. Ribbons

**SECTION – B Very Short Answer**

Answer any FIVE Questions:

**5X2=10 Marks**

- What is a computer virus? CO2
- Comment on database CO3
- List out the factors affecting the speed of internet CO2
- Differentiate Cladogram, Dendrogram and Phylogram CO4
- What are the common usage of Multiple sequence alignment? CO4
- Write short notes on Cladistic and Phenetic methods of phylogenetics CO4
- List out the secondary structures of Protein CO5

**SECTION – C Short Answer**

Answer any THREE Questions:

**3X5=15 Marks**

- Give an account on various computer viruses CO2
- Write an account on creation of webpage CO2
- Discuss the features of Ramachandran Plot CO5
- Differentiate PAM and BLOSSUM matrices CO4
- Describe the construction of phylo tree using Neighbourhood joining method. CO4

**SECTION – C Long Answer**

Answer any TWO Questions:

**2X10=20 Marks**

- Explain the classification of biological databases CO3
- Discuss in detail the methodology followed in homology modelling of 3D structure of a protein CO5
- Give a detailed account on various gene prediction techniques and their difficulties CO4

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**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 31CT31	<b>Programme:</b> M.Sc.,	<b>CIA:</b> III Test
<b>Date:</b> 10.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> III
<b>Time:</b> 2Hrs	<b>Year:</b> II	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>GENETICS</b>	

**SECTION – A Multiple choice questions**

Answer All Questions:

**(5X1=5 Marks)**

- Which of the following is the name of the human genetic disorder resulting from defects in nucleotide excision repair? **(CO5)**
  - Hereditary nonpolyposis colorectal cancer (HNPCC)
  - Xeroderma pigmentosum (XP)
  - Lynch syndrome
  - Diabetes
- A spontaneous mutation usually originates as an error in **(CO5)**
  - DNA replication
  - DNA transcription
  - translation
  - reverse transcription
- A pedigree chart shows **(CO5)**
  - The genotypic ratios of the offspring.
  - The types of gametes produced by the parents.
  - The pattern of inheritance of a specific gene.
  - Which genes are co -dominant.
- Average ratio of men and women in human population is **(CO5)**
  - 2:1
  - 1:1
  - 3:5
  - 1:2
- The method to improve human race by improving environment is called **(CO5)**
  - Positive eugenics
  - Euthenics
  - Euthenics
  - Negative eugenics

**SECTION – B Very short answer****Answer any Five Questions:****(5X2=10 Marks)**

- Define genetic recombination. **(CO4)**
- Mention the role of recA. **(CO4)**
- What is the consequence of breakage and reunion? **(CO4)**
- List out the applications of pedigree analysis. **(CO5)**
- Mention few role and responsibilities of genetic counsellors. **(CO5)**
- Comment on tubectomy and vasectomy. **(CO5)**
- What is gene therapy? **(CO5)**

**SECTION – C Short answer****Answer any Three Questions****(3X6=18 Marks)**

- Write a note on isolation and recombination intermediates. **(CO4)**
- Give an account on congenital malfunctioning. **(CO5)**
- Describe the cellular function of oncoproteins and diagnosis. **(CO5)**
- Describe in brief about the negative Eugenics. **(CO5)**
- Write a short note on Genetic Counselling. **(CO5)**

**SECTION - D Long Answer****Answer any Two Questions:****(2x10 = 20 marks)**

- Discuss the types of genetic recombination. **(CO5)**
- Give brief account on Euthenics. **(CO5)**
- Write an essay on Human Genome Project (HGP). **(CO5)**

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**VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234****DEPARTMENT OF ZOOLOGY**

<b>Course Code:</b> 31CT32	<b>Programme:</b> M.SC.,	<b>CIA:</b> III Test
<b>Date:</b> 11.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> III
<b>Time:</b> 2Hrs	<b>Year:</b> II	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>PHYSIOLOGY</b>	

**SECTION – A Multiple choice questions**

Answer All Questions:

**5X1=5 Marks**

- The structural and functional unit of nervous system is (CO2)
  - Nucleus
  - Schwann cell
  - Cell body
  - Neuron
- The intensity of light produced by fire fly is equivalent to (CO2)
  - 0.02 candle
  - 1.5 candle
  - 1.9 candle
  - 2.0 candle
- is carry the impulse from the brain or spinal card to the muscles. (CO4)
  - Mixed nerves
  - Motor nerves
  - Sensory nerves
  - All of these
- Which one of the following maintains the balance of the body? (CO4)
  - Cerebrum
  - Cerebellum
  - Medulla oblongata
  - Calyx
- Which one of the following flows through spinal canal? (CO4)
  - Plasma
  - Serum
  - Cerebrospinal fluid
  - Hilus

**SECTION – B Very short answer**

Answer any Five Questions:

**5X2=10 Marks**

- Name the respiratory organs found in the animals. (CO1)
- What do you mean by buoyancy? (CO1)
- What is bioelectricity? (CO1)
- Define: Osmoregulation. (CO1)
- What is neuron? (CO4)
- Define: Nerve impulse. (CO4)
- Comment on synapse. (CO4)

**SECTION – C Short answer**

Answer any Three Questions

**3X5=15 Marks**

- Examine critically the effects of hydrostatic pressure. (CO1)
- “Oxygen as a limiting factor”. Discuss. (CO1)
- Explain the physiology of physio therapy. (CO2)
- Explain the counter current mechanism. (CO3)
- Describe the mechanics of pulmonary ventilation. (CO3)

**SECTION - D Long Answer**

Answer any Two Questions:

**2x10 = 20 marks**

- Describe the mechanism of transport of gases. (CO1)
- Explain the physiology of heat therapy. (CO2)
- Describe the structure and functions of central nervous system. (CO4)

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<b>Course Code:</b> 31CT33	<b>Programme:</b> M.SC.,	<b>CIA:</b> III Test
<b>Date:</b> 12.10.2019	<b>Major:</b> ZOOLOGY	<b>Semester:</b> III
<b>Time:</b> 2Hrs	<b>Year:</b> II	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>PRINCIPLES OF BIOTECHNOLOGY</b>	

**SECTION – A****MULTIPLE CHOICE QUESTIONS****Answer All Questions:****5X1=5 Marks**

- PPE is: ---CO1
  - Personal protective equipment
  - Public protective equipment
  - Possible protective equipment
  - All of the above
- The Indian Patents & Design Act enacted in ---CO1
  - 1910
  - 1911
  - 2002
  - 2005
- The vector that can exist in both prokaryotic and Eukaryotic is ---CO3
  - Shuttle vector
  - Phagemid
  - Bacteriophage
  - Yeast created monochromosomes
- The method used to determine the transformance whatever contains plasmids with interest is ---CO3
  - Direct Selection Recombinant
  - Insertion method
  - Colony Hybridization
  - Blue white Screening
- In gene therapy, in non viral method of gene transfer, to inactivate the genes involved in disease process is \_\_\_\_\_ ---CO3
  - Poly-nucleotide
  - Oligo-nucleotide
  - Oligo deoxynucleotide
  - Ribonucleotide

**SECTION – B****VERY SHORT ANSWER****Answer any Five Questions:****5X2=10 Marks**

- Write short notes on characterization of vectors. ---CO3
- Why phage lambda is selected as cloning vector? ---CO3
- Comment on direct selection screening of recombinants. ---CO3
- Give short notes on magic bullets. ? ---CO3
- Why copy rights are essential? ---CO1
- Comment on bio-safety? ---CO1
- What is transgenesis? ---CO1

**SECTION – C****SHORT ANSWER****Answer any Three Questions****3X5=15 Marks**

- Differentiate germ line and somatic gene therapy ---CO3
- Write down the characteristics of plasmid vector ---CO3
- Discuss briefly on present status and scopes in biotechnology. ---CO1
- Give a brief account on IPR. ---CO1
- Write a note on process of patenting. ---CO1

**SECTION - D****LONG ANSWER****Answer any Two Questions:****2x10=20 Marks**

- Explain the Agro bacterium plasmid vectors and their usefulness. ---CO3
- Describe the characteristic features of phage vectors and how insertion and replacement of vectors are created and used. ---CO3
- Write an essay on genomic libraries and its significance. ---CO5

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VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234

DEPARTMENT OF ZOOLOGY

<b>Course Code:</b> 31NE31	<b>Programme:</b> M.Sc., / M.COM	<b>CIA:</b> III Test
<b>Date:</b> 14.10.2019	<b>Major:</b> CHEMISTRY / M.COM	<b>Semester:</b> III
<b>Time:</b> 2Hrs	<b>Year:</b> II	<b>Maximum:</b> 50 Marks
<b>Course Title:</b>	<b>ECONOMIC ZOOLOGY</b>	

**SECTION – A Multiple choice questions**

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

1. Study of mulberry is called CO3  
a) Sericulture b) Moriculture c) Apiculture d) Aquaculture
2. Which one of the following is/are used as rearing appliance in sericulture? CO3  
a) rearing strand b) rearing trays c) feather d) all
3. Cow raised as Livestock for CO5  
a) Meat b) Milk c) Leather d) All the above
4. Foot and mouth disease is caused by CO5  
a) bacteria b) virus c) protozoa d) fungi
5. Mastitis disease is caused by CO5  
a) bacteria b) virus c) protozoa d) helminth

**SECTION – B Very Short Answer**

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

6. What is sericulture? CO3
7. Write the scope of sericulture CO3
8. Define silk reeling CO3
9. What is colostrum? CO5
10. Comment on cheese CO5
11. Define pasteurization of milk CO5
12. What is milk powder? CO5

**SECTION – C Short Answer**

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

13. Describe the types of silkworm CO3
14. Discuss the life cycle of *Bombyx mori* with suitable diagrams CO3
15. Write about the pebrine disease in silk worm. CO3
16. Write an account on artificial insemination CO5
17. Describe the nutritive value of milk CO5

**SECTION – D Long Answer**

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

18. Describe the methods of propagation in mulberry CO3
19. What are exotic milch breeds? Explain the characteristics of Jersey and Holstein Friesian breeds CO5
20. Give an account on housing and managerial aspects of a dairy farm CO5

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