VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST - 625234
DEPARMENT OF ZOOLOGY

Course Code:	31CT11	**Programme:**	M.Sc.	**CIA:**	II
Date:	20.11.2021	**Major:**	Zoology	**Semester:**	I
Duration:	2 Hours	**Year:**	I	**Max.Marks:**	50
Course Title:	**BIOCHEMISTRY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 The hormone inhibited by thyroxine by feedback inhibition is **CO1**
a. TSH b. FSH c. LH d. ADH

2 Deamination takes place in **CO3**
a. Skin b. Kidney c. Spleen d. Intestine

3 Prostaglandins play a important role in the **CO4**
a. Termination of pregnancy b. Lowering of blood pressure
c. Control of inflammation d. All

4 The end product of purine metabolism in human is **CO5**
a. Xanthine b. Uric acid c. Urea d. Allantoin

5 The snRNAs are rich in **CO5**
a. Guanine b. Cytosine c. Adenine d. Uracil

SECTION – B (Understanding)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 How do hormones work? **CO1**

7 Comment on cytochromes **CO3**

8 What do you mean by transcarboxylation? **CO4**

9 Mention the high energy phosphates **CO4**

10 State the biomedical applications of prostaglandins **CO4**

11 Give a brief note on Gout disease **CO5**

12 Enlist the types of RNAs **CO5**

SECTION – C (Applying)

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

13 Write about the metabolism of uronic acid **CO1**

14 Explain the process of oxidative deamination **CO3**

15 Elucidate the metabolism of aspartate family of aminioacids. **CO3**

16 Analyse briefly the biosynthesis of pyrimidine **CO5**

17 Give a brief account on various classes of DNA. **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Discuss the hexose monophosphate shunt and add a note on its significance. **CO1**

19 Describe the ornithine cycle and add a note on its metabolic disorders. **CO3**

20 Elaborate the metabolism of nucleotide co–enzymes **CO5**

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Course Code:	31CT12	**Programme:**	M.Sc.	**CIA:**	II
Date:	22.11.2021	**Major:**	Zoology	**Semester:**	I
Duration:	2 Hours	**Year:**	I	**Max.Marks:**	50
Course Title:	**CELL AND MOLECULAR BIOLOGY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 The ____ refers to the transcriptional changes undergone by mRNA inside the nucleus. **CO4**
a) Transcription b) Processing c) Translation d) Amplification

2 Which proteins inhibit the transcription of RNA from DNA? **CO4**
a) Acid proteins b) Basic proteins c) Histones d) Neutral proteins

3 Protein synthesis occurs in _____ **CO5**
a) Nucleus b) Cytoplasm c) Nucleolus d) Ribosomes

4 Which proteins inhibit the transcription of RNA from DNA? **CO5**
a) Acid proteins b) Basic proteins c) Histones d) Neutral proteins

5 _____refers to the transcriptional changes undergone by mRNA inside the nucleus. **CO5**
a) Transcription b) Processing c) Translation d) Amplification

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 Define bacterial transformation. **CO4**

7 What is promoter escape time? **CO5**

8 Transcription and translation are coupled processes in prokaryotes, but in eukaryotes these are different processes. Give the reason. **CO5**

9 Comment on protein sorting. **CO5**

10 Name the enzymes involved in arabinose operon. **CO5**

11 Mention the properties of genetic code. **CO5**

12 What is RNA splicing? Give its importance. **CO5**

SECTION – C (Applying)

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

13 Describe fine structure of DNA with reference to Watson and Crick model. **CO4**

14 Prove RNA as genetic material with the experimental supports. **CO4**

15 Discus the molecular organization of interphase nucleus. **CO4**

16 Describe the phases of the cell cycle. **CO4**

17 Explain the stages of polypeptide synthesis and its regulation. **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Write an essay on gene regulation in eukaryotes with neat sketch. **CO5**

19 Give an account on inhibitors of protein synthesis. **CO5**

20 Trace the steps involved in translation. **CO5**

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DEPARTMENT OF ZOOLOGY

Course Code:	31CT13	**Programme:**	M.Sc.,	**CIA:**	II
Date:	23.11.2021	**Major:**	Zoology	**Semester:**	I
Duration:	2 Hours	**Year:**	I	**Max.Marks:**	50
Course Title:	**MICROBIOLOGY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 EMBA medium is another differential medium used for _____ culture. **CO2**
a. Neisseria gonorrhea b. Vibrio parahaemolyticus
c. Cholera d. E. coli

2 The method in which the cells are frozen dehydrated is called **CO2**
a. Disinfection b. Pasteurization c. Lyophilization d. Dessication

3 Which one is the heat loving microbes is a_____. **CO2**
a. E. coli b. Mesophilic c. Thermophillic d. V. cholera

4 In the ____ phase, the cells divided rapidly at a constant **CO2**
a. Lag phase b. Log phase c. Stationary phase d. Decline phase

5 Penicillium nottatum is a ___ **CO5**
a. Antifungal b. Antiviral c. Antibacterial d. Mucor

SECTION – B (Understanding)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 Differentiate between the Autotrophs and Heterotrophs. **CO2**
7 Common on viable plate count method? **CO2**
8 Define the term probiotics. **CO4**
9 What you meant by waste water? **CO4**
10 Give a short comment on ammonification. **CO5**
11 Mention the role of lactic acid. **CO5**
12 Write a short note on thermophiles bacteria. **CO5**

SECTION – C (Applying)

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

13 How microbes are classified based on their mode of nutrition? **CO2**
14 Write an account on the quantification methods of microorganisms. **CO2**
15 Give a brief account on distribution of microorganism in an aquatic ecosystem and discuss their biological role on aquatic environment. **CO4**
16 Write a short note on role of microorganism in nitrogen cycle. **CO4**
17 Describe about downstream processing. **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Analyse the various methods of culture growth of bacteria **CO2**
19 Write an essay on food preservation methods. **CO5**
20 What are the types of fermentation? Explain them with neat illustrations. **CO5**

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DEPARTMENT OF ZOOLOGY

Course Code:	31EP11	**Programme:**	M.Sc.	**CIA:**	II
Date:	24.11.2021	**Major:**	Zoology	**Semester:**	I
Duration:	2 Hours	**Year:**	I	**Max.Marks:**	50
Course Title:	**BIO INFORMATICS**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 HTML is a what type of language? **CO2**
a. Scripting Language b. Markup Language c. Programming Language d. Network Proto

2 Which of the following is a correct format of Email address? **CO2**
a. name@website@info b. name@website.info
c. www.nameofebsite.com d. name.website.com

3 What is the name of first computer virus? **CO2**
a. The Famous b. HARLIE c. PARAM d. Creeper

4 In Ramachandran plot the top most left side section square denotes **CO5**
a. β- pleated and β- sheets b. Alpha Helix c. 3- 10 Helix d. pSi helix

5 In the structural proteomics, the secondary structures of protein that are widely seen is **CO5**
a. α- helix b. β-sheets c. loops d. Ribbons

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 What is antivirus? **CO2**

7 State the importance of email **CO2**

8 Comment on database **CO3**

9 Comment on CLUSTAL$_{\mathbf{W}}$ **CO4**

10 Distinguish dendro, phylo and cladograms in a phylotree **CO4**

11 Mention any four usages of multiple sequence alignment **CO4**

12 Write short notes on threading method of protein designing **CO5**

SECTION – C (Applying)

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

13 Discuss the steps involved in creation of email **CO2**

14 Write a brief account on creation of webpage **CO2**

15 Explain the types of computer virus **CO2**

16 Describe the methods of multiple sequence alignment **CO4**

17 Give an account on various secondary structures of Protein **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Describe the classification schema of biological databases **CO3**

19 How will you design and validate a protein using homology modeling **CO5**

20 a. Write a brief account on internet **CO5**
b. Describe the Ramachandran plot

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DEPARTMENT OF ZOOLOGY

Course Code:	31CT31	**Programme:**	M.Sc	**CIA:**	II
Date:	20.11.2021	**Major:**	Zoology	**Semester:**	III
Duration:	2 Hours	**Year:**	II	**Max.Marks:**	50
Course Title:	**GENETICS**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 Oncogenes do not encode for **CO5**
a) Trans-membrane protein receptors b) Growth factors
c) DNA-dependent RNA polymerase d) Cytoplasmic G-proteins and protein kinases

2 Which of these is a common birth defect? **CO5**
a) Down syndrome b) Heart abnormalities c) Spina bifida d) Cleft lip/cleft palate

3 Viruses cannot synthesize their own proteins due to **CO3**
a) lack of nucleus b) lack of required genetic information
c) absence of ribosomes d) lack of cytosol

4 The spike like projections seen on the outer surface of enveloped viruses are called **CO3**
a) Capsomeres b) Peplomeres c) Proteomeres d) viroid

5 A pedigree chart shows: **CO5**
a) The genotypic ratios of the offspring.
b) The types of gametes produced by the parents.
c) The pattern of inheritance of a specific gene.
d) Co –dominant genes

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 What is codominance? Cite an example. **CO1**
7 Mention the role of cos site in viral genome. **CO3**
8 When do concatamer assembly of DNA occurs in bacterial genome? **CO3**
9 Give a brief note on transposable elements in bacteria. **CO3**
10 Discriminate transduction and transfection. **CO3**
11 What are the functions of oncoproteins? **CO5**
12 Define genetic counselling. **CO5**

SECTION – C (Applying)

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

13 Give an account on restriction mapping. **CO1**
14 Write a short note on genetic organization of the lambda phage. **CO3**
15 Discuss in detail the congenital malformation with suitable examples. **CO5**
16 Highlight the significance of pedigree analyses in the medical field. **CO5**
17 Enlight the human society through the principles of eugenics, euthenics and euphenics. **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Exemplify the deviation of Mendelian concept with appropriate illustrations. **CO1**
19 Discuss the DNA transfer by specialized and generalized transduction. **CO3**
20 Highlight the human genome project and its implications. **CO5**

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DEPARTMENT OF ZOOLOGY

Course Code:	31CT32	**Programme:**	M.Sc.	**CIA:**	II
Date:	22.11.2021	**Major:**	Zoology	**Semester:**	III
Duration:	2 Hours	**Year:**	II	**Max.Marks:**	50
Course Title:	**PHYSIOLOGY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 Which of the following is allied to haemoglobin and cytochromes? **CO1**
a. Haemerythrin b. Chlorocruorin c. Haemocyanin d. All

2 Haemerythrin was first discovered in **CO1**
a. Serpula b. Potamilla c. Lingula d. Tubifex

3 The sound intensity is expressed as **CO2**
a. Decibels b. cps c. Candela d. Mols

4 Which has longer duration of action? **CO3**
a. Systole b. Diastole c. Both are same d. None of these

5 Which one of the following maintains the balance of the body? **CO4**
a. Cerebrum b. Cerebellum c. Medulla oblongata d. Calyx

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 Define the term osmoregulation. **CO1**
7 Comment on buoyancy. **CO1**
8 What is bioluminescence? **CO2**
9 What do you mean by bioelectricity? **CO2**
10 What is cardiac cycle? **CO5**
11 Define: Haemodynamics. **CO5**
12 Give a short note on synapse. **CO5**

SECTION – C (Applying)

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

13 Briefly discuss the different kinds of respiratory organs and their ventilation. **CO1**
14 Explain the mechanism of transport of O_2 and CO_2. **CO1**
15 Examine critically the effects of hydrostatic pressure. **CO1**
16 Describe the mechanism of muscle contraction. **CO3**
17 Write an account on counter current mechanism. **CO3**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Through suitable diagram, elucidate the structure of human eye. **CO2**
19 Elucidate the physiology of magnetotherapy. **CO2**
20 Discuss elaborately the mechanics of pulmonary ventilation. **CO3**

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DEPARTMENT OF ZOOLOGY

Course Code:	31CT33	**Programme:**	M.Sc.	**CIA:**	II
Date:	23.11.2021	**Major:**	Zoology	**Semester:**	III
Duration:	2 Hours	**Year:**	I	**Max.Marks:**	50
Course Title:	**PRINCIPLES OF BIOTECHNOLOGY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 The Ti plasmid grouped based on opine are **CO3**
a. Octopine b. Nopaline
c. Agropine d. All the above

2 In Gene therapy the modifications which does not passed to the next generations is **CO3**
a) Cell line gene therapy b)Germ line gene therapy
c) Somatic gene therapy d) Organ line gene therapy

3 The vector that can exists in both prokaryotic and Eukaryotic is **CO3**
a. Shuttle vector b. Phagemid
c. Bacteriophase d. Yeast created monochromosomes

4 In tumour gene therapy the type of replicative viruses which are used that can replicate only within the tumour cells is **CO3**
a) Retero Virus b) Killed virus
c) attenuated Virus d) phage Virus

5 A collection of clones that represents the complete genome of an organism is called as **CO5**
a) cDNA library b) oligo – dc – tailing
c) Genomic library d) RNA – DNA – library

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 What are all the principles of Gene therapy? **CO3**
7 Comment on injection of naked DNA in Gene therapy **CO3**
8 What are lipoplex and polyplex? **CO3**
9 Give a short comment on restriction mapping and its significance. **CO4**
10 What is micro array? **CO4**
11 What you meant by genomic library? **CO5**
12 Comment on micro injection method of gene transfer. **CO5**

SECTION – C (Applying)

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

13 Write a detailed Comment on the Germline Gene therapy and their applications **CO3**
14 Differentiate DNA and RNA markers and their significances **CO2**
15 Describe briefly methods and principles in southern blotting. **CO4**
16 Enumerate the methods and principles in DNA sequencing. **CO4**
17 Write a short note on the method of DNA hybridization and colony hybridization. **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Give a detailed account on Viral vector mediated Gene therapy Or How will you screen a recombinant DNA by both direct and indirect method **CO3**
19 Write an account on gene transfer methods in rDNA technology. **CO5**
20 Write a detailed account on construction of cDNA library and its significances. **CO5**

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DEPARTMENT OF ZOOLOGY

Course Code:	31NE31	**Major:**	Non-Major	**CIA:**	II
Date:	24.11.2021			**Semester:**	III
Duration:	2 Hours	**Year:**	II	**Max.Marks:**	50
Course Title:	**ECONOMIC ZOOLOGY**				

SECTION – A (Remembering)

Answer **ALL** the Questions: **(5 X 1 = 5 Marks)**

1 Study of rearing of silkworm is called **C**O3
a. Sericulture b. Moriculture c. Apiculture d. Aquaculture

2 Which one of the following is a mulberry silkworm? **CO3**
a. muga silkworm b. eri silkworm c. tasar silkworm d. *Bombyx mori*

3 Who is the father of Apiculture? **CO2**
a. Lanstroth b. Quinby c. Johann Dzierzon d. Miller

4 The deep freezing of semen is stored at ____ ^{0}C **CO5**
a. -190 b. -80 c. -70 d. -50

5 Mastitis disease is caused by **CO5**
a. protozoa b. bacteria and virus c. fungi d. helminth parasite

SECTION – B (Understating)

Answer any **FIVE** Questions: **(5 X 2 = 10 Marks)**

6 Write the importance of sericulture **CO3**

7 What is moriculture? **CO3**

8 Comment on Pebrine disease **CO3**

9 Define the term apiary **CO2**

10 Write the functions of worker bee **CO2**

11 Mention the name of common milk products **CO5**

12 Comment on foot and mouth disease **CO5**

SECTION – C (Applying)

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

13 Discuss the life cycle of *Bombyx mori* with suitable diagrams **CO3**

14 Describe the methods of vegetative propagation in mulberry **CO3**

15 Explain Newton's bee hive and add a note on its advantages **CO2**

16 Narrate the nutritive value of milk **CO5**

17 Explain the characteristics of Holstein Friesian breed **CO5**

SECTION – D (Analyzing)

Answer any **TWO** Question: **(2X 10= 20 Marks)**

18 Describe the appliances used in silkworm rearing **CO3**

19 Discuss the nutritional and medicinal value of honey **CO2**

20 Give an account on housing and management aspects of a dairy farm **CO5**