09	CT	1	1
03	\sim \cdot	_	-



(Autonomous & Residential)
[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019

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:

 $(10 \times 1 = 10)$

- 1. The father of taxonomy is
 - a) Darwin
- b) Edward Jenner c) Linnaeus
- d) Fleming
- 2. Which of the following synthetic drug cure malaria?
 - a) Ouinine
- b) Daraprim
- c) Chloroquine d) All of these
- 3. Sponges are primitive multicellular animals having
 - a) Cellular grade of organization where there are no organs and systems
 - b) Tissue grade of organization where there are organs and systems in the body
 - c) Both a & b
 - d) None of these patterns
- 4. Most of the sponges are
 - a) Solitary

b) Colonial

c) Freshwater forms

- d) Cold water inhabitants
- 5. The term Coelenterata was coined by
 - a) Linnaeus
- b) Clark
- c) Grant
- d) Leuckart

- 6. CaCO₃ is present in
 - a) Coral reefs
- b) Earthworm
- c) Leech
- d) Insect

7. Protonephridia	a is a		_	
a) Excretory system		b) Digestive s	b) Digestive system	
c) Circulatory	system	d) Blood suck	ers	
8. Class Tremato	da belongs to the Phy	lum		
a) Platyhelmi	nthes b) Arthropoda	c) Mollusca	d) Annelida	
9. The egg of Asa	caris lumbricoides			
a) Oval	b) Spherical	c) Round	d) Circular	
10. Sexual dimorp	hism is found in			
a) <i>Hydra</i>	b) Earthworm	c) Ascaris	d) <i>Fasciola</i>	
	SECTION	$\mathbf{I} - \mathbf{B}$		
Answer any FIV			$(5\times2=10)$	
11. Define Tricho			,	
12. What is Myon	•			
13. List out the us				
	unctions of Cnidoblas	t.		
15. What is Metag				
· ·	ture of flame cells.			
17. Define Acetab				
17. Bernie Acciao	uram.			
	SECTION	<u>I – C</u>		
Answer ALL Q	uestions :		$(5\times 5=25)$	
18.a) Explain the	external morphology	of Paramecium		
, <u>*</u>				

19.a) Write note on spicules of sponges.

(OR)

- b) Explain the morphlogy of sycon type of sponge.
- 20.a) Summarize the affinities of Ctenophora.

(OR)

- b) Explain the morphology of Obelia.
- 21.a) Explain the general characters of Platyhelminthes.

(OR)

- b) Illustrate the origin of metazoan.
- 22.a) Demonstrate the morphology of Ascaris.

(OR)

b) List out the general characters of Aschelminthes.

SECTION – D

Answer any THREE Questions:

 $(3 \times 10 = 30)$

- 23. Describe the etiology and life cycle of Plasmodium.
- 24. Discuss the types and functions of Canal system of sponges.
- 25. Distinguish the polymorphism in hydrozoa.
- 26. Elucidate the general morphology of Fasciola hepatica.
- 27. Enlist the parasitic adaptations in helminthes.

00000

(OR)

b) Classify the phylum Protozoa upto class level.

n	9	CI	Г1	7



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 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: $(10 \times 1 = 10)$ 1. In annelids, which group do not contain parapodia and setae? c) Hirudinea d) Echiurodiea a) Oligochaeta b) Polychaeta 2. The linear arrangement of segments one behind the other is called a) Coelom b) Metamerism c) Symmetry d) Organization 3. Which of the following is used to masticate the food in Prawn? b) II antennae c) Mandibles d) I Maxillae a) I antennae 4. Which is the connective link between Annelida and Arthropoda? b) Housefly a) Peripatus c) Limulus d) Prawn 5. Chemicals for insect communication are called c) Pheromones d) Deuterosones a) Ecdysones b) Protosones 6. Starfishes are c) Filter feeder d) Omnivorous a) Herbivorous b) Carnivorous 7. The coils of Pila shell are called a) Sinistral b) Suture c) Lip d) Whorls 8. Ink glands are present in the class a) Cephalopoda b) Gastropoda c) Scaphopoda d) Pelecypoda

9. The main function of pedicellariae is			19.a) Explain any five larval form of Crustacea.		
a) Digestion	b) Excretion		(OR)		
c) Respiration	d) Capture of prey and removal of	of debris	b) List out the general characters of Arthropoda.		
10. Honey bee belong	gs to the order		20.a) Enumerate the economic importance of insects.		
a) Lepidoptera	b) Hymenoptera c) Orthoptera	d) Diptera	(OR)		
			b) Summarize the external morphology of Scolop	endra.	
	SECTION – B		21.a) Discuss the external morphology of apple snail.		
Answer any FIVE	Questions :	$(5\times2=10)$	(OR)		
1.Define coelom.			b) Illustrate the torsion in gastropods.		
12. List out the funct	ions of Metanephridium.		22.a) Classify the Echinodermata up to class level.		
•		(OR)			
• •	3. Name the types of thorax in insects.		b) Summarize the General organisation of star fish.		
14. What is Mysis?					
15. Write short notes	on Green glands.		SECTION – D		
16. Define Osphradiu	ım.		Answer any THREE Questions:	$(3\times10=30)$	
17.State the Holothu	ıroidea.		23. Describe the Adaptive radiation in Polychaetes.		
			24. "Peripatus is connecting link between Annelida and Arthropoda" –		
	SECTION – C		Analyse.		
Answer ALL Ques		$(5\times 5=25)$	25. Give an elaborate account on Social life of insects.26. "Cephalopods are advanced mollusk" – Justify.		
		(3 / 3 – 23)			
(OR)			27. Explain the different larval forms of Echinodermata.		
b) Briefly explain	n the external morphology of Nere	is.	00000		
· / · · · · · · · · · · · · · · · · · ·					

0	91	١E	1	1



a) Kidney

VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.A. / B.Sc. Degree (Semester) Examinations, November 2019 Part – IV: Non-Major Elective Subject: First Semester: Paper – I

HUMAN ANATOMY

Under CBCS - Credit 2

Time: **2** Hours Max. Marks: **75**

SECTION - A

Answer ALL Questions: $(10 \times 1 = 10)$ 1. Which one is the largest organ of the body? a) Skin b) Liver c) Lungs d) Heart 2. Glycogen is stored in a) Blood c) Lungs d) Kidney b) Liver 3. Fibrin is produced by a) WBC b) RBC c) Blood platelets d) Lymphocytes 4. The pigment found in rods is c) Photopsin d) Keratin a) Retinene b) Melanin 5. Fertilization occurs in human a) Ovary b) Fallopian tube c) Vasa deferentia d) Vasa efferentia 6. Hormone is a a) Chemical messenger b) Excretory products d) Glandular secretion c) Enzyme 7. Organ of Corti is found in

c) Nasal chamber

d) Internal ear

b) Heart

- 8. Daily respiratory activity are controlled by
 - a) Cerebrum

b) Medulla oblongata

c) Cerebellum

- d) Diencephalon
- 9. The 'U' shaped portion in kidney is
 - a) Medulla

b) Cortex

c) Henle's loop

- d) Collecting tubule
- 10. The study of bone is called
 - a) Phycology
- b) Osteology
- c) Mycology
- d) Ecology

SECTION - B

Answer any FIVE Questions:

 $(5 \times 2 = 10)$

- 11. What is medulla oblongata?
- 12. Expand: FSH and LH.
- 13. State the functions of testosterone.
- 14. Enlist the hormones secreted by endocrine part of pancreas.
- 15. What are alveoli?
- 16. Differentiate between exoskeleton and endoskeleton.
- 17. Name the different types of WBC.

SECTION - C

Answer ALL Questions:

 $(3\times 9=27)$

18.a) Write down the various functions of skin.

(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) Briefly discuss the structure of human heart.

(OR)

b) Narrate the structure of human eye.

SECTION – D

Answer any TWO Questions:

 $(2 \times 14 = 28)$

- 21. What is pituitary gland? Explain the functions of growth hormone.
- 22. Describe the structure of human ear with neat diagram.
- 23. Write an essay on Karl Landsteiner blood groups.
- 24. Discuss the structure of human nephron with neat sketch.

0	9	C.	Г	3	1



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 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: $(10 \times 1 = 10)$ 1. Which one of the following is a basic stain? a) Eosin b) Methyl green c) Thionine d) Aniline blue 2. Disruption of cell membrane and release of subcellular components is called a) Chromatography b) Mounting c) Homogenization d) Embedding 3. What is the percentage of lipids and proteins in the plasma membrane? a) 25 & 75 b) 75 & 25 c) 42 & 58 d) 65 & 75 4. The lysosomes release enzymes outside of the cell is called a) Exocytosis b) Endocytosis c) Autolysis d) Autophagy

- 5. Krebs cycle begins with the reaction
 - a) OAA + Acetyl CoA
- b) Citric acid + Acetyl CoA
- c) OAA + Pyruvic acid
- d) OAA + Citric acid
- 6. Polysome is a chain of
 - a) Oxysomes
- b) Sphaerosomes c) Ribosomes d) Dictyosomes
- 7. Nucleolus disappears during _ of the cell division.
 - a) Anaphase
- b) Prophase
- c) Metophase d) Telophase

- 8. Pairing of homologous chromosomes occur during
 - a) Leptotene stage

- b) Pachytene stage
- c) Late anaphase stage
- d) Zygotene stage
- 9. The RNA constituting ribosome along with protein is
 - a) mRNA
- b) tRNA
- c) rRNA
- d) All the above

- 10. Gene expression refers to
 - a) DNA Protein RNA
- b) RNA Protein DNA
- c) Protein DNA RNA
- d) DNA RNA Protein

SECTION - B

Answer any FIVE Questions:

 $(5\times2=10)$

- 11. What are the three principles of the cell theory?
- 12. What is meant by freeze drying?
- 13. Define endocytosis.
- 14. How does rough endoplasmic reticulum differ from smooth endoplasmic reticulum?
- 15. Define oxidative phosphorylation.
- 16. What is known as contact inhibition?
- 17. Find the compositions of rRNA in the ribosomes of prokaryotes and eukaryotes.

SECTION – C

Answer ALL Questions:

 $(5\times 5=25)$

18.a) Compare the working principle of light microscope with that of electron microscope.

(OR)

b) Outline the procedure of isolation of cellular components.

19.a) Illustrate the ultrastructure of lysosomes.

(OR)

- b) Summarize the functions of Golgi complex.
- 20.a) Explain the process of Krebs cycle.

(OR)

- b) Enumerate the functions of mitochondria.
- 21.a) Describe the structure of lampbrush chromosomes.

(OR)

- b) Enlist the properties of cancer cells.
- 22.a) Demonstrate the structure of tRNA facilitates protein synthesis.

(OR)

b) Compare and contrast the process of DNA replication in prokaryotes and eukaryotes.

SECTION - D

Answer any THREE Questions:

 $(3 \times 10 = 30)$

- 23. Identify suitable methods of fixation for different tissues and cells.
- 24. Categorize the functions of plasma membrane.
- 25. Solve the structure of ribosomes to its function in prokaryotes and eukaryotes.
- 26. Organize the events that occur in the nucleus and cytoplasm of a germ cell during cell division.
- 27. Develop a model to demonstrate that metabolism of glucose in *E. coli* is regulated by a set of genes.

0	9	C.	T	3	2
•	_	•		•	-



(Autonomous & Residential)
[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part – III: Core Subject: Third Semester: Paper – II

GENETICS

Under CBCS - Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION - A

Answer ALL Questions:

 $(10 \times 1 = 10)$

- 1. Unit of inheritance is called
 - a) Genotype
- b) Phenotype
- c) Gene
- d) Chromosome

- 2. Mendel's experimental material was
 - a) Pisum sativum

b) Lathyrus odoratus

c) Oryza sativa

- d) Mirabilis jalapa
- 3. An individual's ABO blood type is normally determined by:
 - a) Genetic inheritance and environmental influences during life
 - b) Environmental influences alone
 - c) The inheritance of 1 of 3 possible alleles (A, B, or O) from each parent
 - d) None
- 4. In determining the phenotype for the ABO blood system:
 - a) O is dominant over A
- b) B is dominant over A

c) O is recessive

- d) all of these
- 5. Linkage in maize was reported by
 - a) Bateson
- b) Morgan
- c) Hutchinson d) Sinnott

6. V	Who coined the te	erm linkage?		
ä	a) Correns	b) Mendel	c) Morgan	d) de Vries
7. T	The sex index of s	super male		
ä	a) 0.5	b) 0.67	c) 1	d) 0.33
8. T	The best example	of sex linkage is		
á	a) Haemophilia		b) Colour blind	lness
c) Both a & b d) Barr body				
9. T	The female sinistr	al snail is		
á	a) dd	b) AA	c) DD	d) aa
10. T	Surner's syndrom	e is a		
á	a) Sterile male		b) Sterile fema	le
c) Fertile male d) Fertile female			le	
		SECTION	I - B	
Ans	wer any FIVE	Questions :		$(5\times2=10)$
11.D	Define back cross	•		
12.N	Mention about co	mplementary gene		
13. V	Vhat are multiple	alleles? Give an e	xample.	
	•	en multiple alleles	•	raits.

15. Define crossing over and give its significance.

16. Comment on pedigree analysis.

17. Bringout the significance of Euthenics.

SECTION - C

Answer ALL Questions:

 $(5\times 5=25)$

18.a) Given an account on Epistasis.

(OR)

- b) Briefly write a note on Duplicate genes.
- 19.a) Define the Rh factor in blood groups and its significance in pregnancy.

(OR)

- b) Give an account on Application of Rh blood groups.
- 20.a) Discuss about linkage and its significance.

(OR)

- b) Briefly explain about the Crossing over and its significance.
- 21.a) Write a short note on Haemophilia.

(OR)

- b) Enumerate the prevention of Haemolytic disease.
- 22.a) Explain the metabolic disease of Alpkaptonuria.

(OR)

b) Write about role on pedigree analysis in Human genetics.

SECTION – D

Answer any THREE Questions:

 $(3\times10=30)$

- 23. Given an account on Pleiotrophism and penetrance.
- 24. Enumerate the mode of inheritance of Coat colour in Rabbit.
- 25. Elucidate about the Crossing over.
- 26. Discuss about inheritance Eye colour of Drosophila.
- 27. Write a detailed account on Kappa particles in Paramecium.

s0	9	S	В	3	1
----	---	---	---	---	---



(Autonomous & Residential) [Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part - IV : Skill Based Subject : Third Semester : Paper - I

PUBLIC HEALTH AND HYGIENE

Under CBCS - Credit 2

Time: 2 Hours Max. Marks: 75

SECTION - A

Answer ALL Questions:

 $(10 \times 1 = 10)$

- 1. The most important function of carbohydrate is
 - a) Heart function

b) Supply energy

c) Tissues formation

- d) Liver formation
- 2. The pure calcium deficiency is
 - a) Osteoporosis b) Molasses
- c) Diabetic
- d) Fever

- 3. Fresh water is a
 - a) Renewable resource

b) Non-renewable resource

c) Both a and b

- d) Artificial production
- 4. Municipal solid waste commonly known as
 - a) Trash
- b) Garbage
- c) Both a & b d) Trial
- 5. Which is the protozoan parasite?
 - a) E. Coli
- b) Pseudomonas c) Entamoeba d) HIV

- 6. The female filariasis are
 - a) Viviparous

b) Ovovviparous

c) Beneficial worm

d) Social animals

a) High blood pressure	b) High fever
c) Kidney failure	d) Brain fever
8. Which one of the following disease	occurs in excessive food intake?
a) Obesity	b) Hypertension
c) Heart attack	d) Stomach disorder
9. The aim of first aid is	
a) Preserve life	b) Prevent further harm
c) Promote recovery	d) All the above
10. Chikungunya fever is a	
a) Bacterial illness	b) Viral illness
c) Protozoan illness	d) Fungi illness
SECTION	$\overline{\mathbf{J}} - \mathbf{B}$
Answer any FIVE Questions :	$(5\times2=10)$
11. What is diphtheria?	
12.Expand : ISO.	
13. Comment on dressing?	
14. Name the seven elements of nutritio	n.
15. Enlist the water quality index?	
16. Write down the symptoms of mump	s.

7. Hypertension is also known as

17. What is alcoholism?

SECTION - C

Answer ALL Questions:

 $(3\times 9=27)$

18.a) Briefly explain the physiological role of protein.

(OR)

- b) Discuss the methods of excreta disposal in rural areas.
- 19.a) Explain the causative organism and preventive measures of Poliomyelitis.

(OR)

- b) Comment on diabetes.
- 20.a) Highlight the role NGOs in public health education.

(OR)

b) "Dengue fever is a mosquito-borne tropical disease" – Discuss.

SECTION - D

Answer any TWO Questions:

 $(2 \times 14 = 28)$

- 21. Explain the various methods of sewage treatment.
- 22. Give a detailed account on National Leprosy Eradication Programme in India.
- 23. What is Vitamin? Describe the various Vitamin deficiency diseases.
- 24. "AIDS as a dreadful disease" Justify.

09 <i>F</i>	۱T	0	1
-------------	----	---	---



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. (Chem. / Bot.) Degree (Semester) Examinations, November 2019 Part – III: Allied Subject: Third Semester: Paper – I

ANIMAL ORGANISATION

Under CBCS - Credit 4

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Que	stions:		$(10 \times 1 = 10)$
1. Binomial nomen	clature consists o	f	
a) Genus and Sp	pecies	b) Genus and	Subspecies
c) Genus and Fa	mily	d) Species and	d Variety
2. What are the maj	or differences be	tween cilia and fl	lagella?
a) Cilia are shor	t compared to flag	gella	
b) Flagella are le	ess in number cor	npared to cilia	
c) Cilia are distr	ibuted through th	e cell surface	
d) All of these			
3. The mode of nutr	rition in amoeba i	.S	
a) Holophytic	b) Holozoic	c) Parasitic	d) Saprozoic
4. The process of do	ouble respiration	is exhibited in	
a) Mammals	b) Birds	c) Reptiles	d) Amphibians
5. Cyclosis found in	1		
a) <i>Amoeba</i>	b) Euglena	c) Parameciu	m d) Plasmodium
6. The heart of calo	tes is covered by	a membrane call	ed
a) Plasma memb	orane	b) Pericardiu	m membrane
c) Interauricular	septum	d) Pericardial	fluid

7.	Number of subph	aryngeal ganglia in	earthworm is		
	a) single	b) one pair	c) two pairs	d) three pairs	
8.	The rod cells of re	etina contain			
	a) Rhodopsin	b) Iodopsin	c) melanin	d) chromatophores	
9.	The right kidney	is slightly lower tha	an the left beca	ause of the	
	presence of				
	a) Pancreas	b) Stomach	c) Heart	d) Liver	
10.	The female rabbit	is			
	a) spontaneous o	vulatory	b) seasonal ovulatory		
	c) induced ovulatory		d) natural ovulatory		
		SECTION	$\overline{\mathbf{B}}$		
A ns	Answer any FIVE Questions: $(5 \times 2 = 10)$				
11.	Define taxonomy	<i>7</i> .			
12. Highlight the 3 basic types of symmetry.					
13.	What is Coelom?				
14. Bringout the significance of gills in fish.					
15. Mention about circulatory system of reptiles.					
16.	16. Comment on the function of the nervous system of a frog.				
17	7 How did amocha excrete?				

SECTION - C

Answer ALL Questions:

 $(5\times 5=25)$

18.a) Give brief account on Binomial Nomenclature.

(OR)

- b) Explain types of symmetry seen in animals.
- 19.a) Explain about feeding and digestion in Amoeba.

(OR)

- b) Describe the respiration system of cockroach.
- 20.a) Describe the blood vessels and their arrangement in the first thirteen segments of Earthworm.

(OR)

- b) Write a brief note on flight mechanism in pigeon.
- 21.a) Write short notes on photoreceptor of man.

(OR)

- b) Discuss the autonomic nervous system of frog.
- 22.a) Write a brief note on excretory system of earthworm.

(OR)

b) Explain about the excretion of frog.

SECTION - D

Answer any THREE Questions:

 $(3\times10=30)$

- 23. What is a Coelom? Mention types of Coelom with examples.
- 24. Write an essay for digestive system of frog.
- 25. Explain the circulatory system of *Calotes*.
- 26. Describe Structure and functions human ear with diagram.
- 27. Discuss about male reproductive system of rabbit.

0	9	C.	Т	5	1



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part - III: Core Subject: Fifth Semester: Paper - I

BIOCHEMISTRY AND BIOPHYSICS

Under CBCS - Credit 5

Time: 3 Hours Max. Marks: 75

SECTION - A

Answer ALL Questions:

 $(10 \times 1 = 10)$

- 1. Ammonium hydroxide is dissociated into
 - a) NH4⁺ and OH⁻ b) H⁺ and Cl⁻
- c) H ⁺ and A⁻
 - d) Na + and OH -
- 2. A protein molecule is linked to one another by
 - a) Peptide linkage

b) Hydrogen bond

c) Covalent bond

- d) Van der Waal's forces
- 3. The word-as added to the substrate name for enzyme naming is
 - a) Suffixed
- b) Prefixed
- c) Interpolated d) Conjugated
- 4. At high temperature, enzymes are
 - a) Killed
- b) Denatured
- c) Inactivated d) Highly effective

- 5. Glycolysis occurs in
 - a) Cytosol
- b) Mitochondria
- c) Golgi complex d) Ribosomes
- 6. The formation of urea, mainly in the liver, is by:
 - a) Kreb's cycle

b) Glyoxylate cycle

c) Ornithine cycle

- d) None of these
- 7. Biological oxidation is also known as
 - a) Tissue oxidation

- b) Cellular respiration
- c) Embden Meyerhoff pathway
- d) Both a and b

- 8. Which of the following is considered as a universal currency of free energy?
 - a) NADH
- b) ADP
- c) ATP
- d) FAD

- 9. Colloids can
 - a) scatter light
- b) not scatter light c) absorb heat d) evolve heat
- 10. High energy phosphate bond in ATP is called
 - a) Hydrogen bond

b) Covalent Bond

c) Ionic bond

d) Pyrophosphate bond

SECTION - B

Answer any FIVE Questions:

 $(5 \times 2 = 10)$

- 11. What is a strong acid?
- 12. Write about biological Buffer.
- 13. Comment on Acidosis.
- 14. Define Structural isomers.
- 15. Comment on unsaturated fatty acid.
- 16. Define β -oxidation.
- 17. What is transamination?

SECTION - C

Answer ALL Questions:

 $(5 \times 5 = 25)$

18.a) Interpret the titration curves of 3 weak acids, CH3COOH, H2PO4–and NH4+.

(OR)

b) Enlist any two buffers and their Biological importance.

19.a) Give the details about the nomenclature and classification of Enzymes.

(OR)

- b) Discuss about classification of carbohydrates? Give one example.
- 20.a) Explain the details about TCA Cycle.

(OR)

- b) Analyse the details of biosynthesis of glycerol.
- 21.a) Describe about the biologically important high energy compounds.

(OR)

- b) Write the details about site of oxidative phosphorylation.
- 22.a) Enlist the types of colloidal solutions.

(OR)

b) Describe about the Laws of thermodynamics.

SECTION – D

Answer any THREE Questions:

 $(3 \times 10 = 30)$

- 23. Describe about the Dissociation constant and write the pKa of some common weak acids?
- 24. What Factors Influence Enzymatic Activity? Discuss.
- 25. Explain briefly about the Two Phases of Glycolysis?
- 26. What is diffusion? Describe about Membrane transport system.
- 27. Explain in details about bioelectricity.

0	9	C.	Т	5	2



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part - III : Core Subject : Fifth Semester : Paper - II

BIOTECHNOLOGY

Under CBCS - Credit 4

Time: 3 Hours Max. Marks: 75

	<u>SECTI</u>	<u>ION – A</u>			
Answer ALL Q	$(10 \times 1 = 10)$				
1. One of the bes	st example of copy	right is			
a) Cloths	b) IBM	c) Book	d) KOOAK		
2. Which one is	artificial plasmid?				
a) Cosmid	b) PAC	c) Phagemids	d) BAC		
3. Which is a tec	hnique involving	electric field-media	ted membrane		
permeabilizat	ion?				
a) Transfection		b) Transforma	b) Transformation		
c) Electropor	ation	d) Conjugation	d) Conjugation		
4. Direct intake	of DNA fragments	from the medium b	by bacterial cells		
is called					
a) Transformation		b) Transfectio	b) Transfection		
c) Microinjection		d) Transduction	d) Transduction		
5. The variation	in the restriction D	NA fragment lengt	hs of different		
species is					
a) RFLP	b) AFLP	c) SSR	d) RAPD		
6. The vaccine w	which developed fir	rst from animal cell	culture was		
a) Polio vaccine		b) Hepatitis	b) Hepatitis B vaccine		

d) Small pox vaccine

c) Influenza vaccine

7. Transgenic plants are developed by		SECTION – C		
a) Introducing foreign genes	b) Introducing gene mutations	Answer ALL Questions:	$(5\times 5=25)$	
c) Deleting certain chromosome parts d) Stopping spindle formation 18.a) Write short note on revers			d its uses.	
8. Technique of SCP is introduced by		$(\mathbf{OR})^{-}$		
•	c) Scrimshaw d) Ian Wilmot	b) Critically Comment on pBR 322.		
a) Gregor Mendel b) Louis Pasteur c) Scrimshaw d) Ian Wilmot		19.a) Briefly explain about the selection of recombinants in colony		
9. Northern blotting is performed for _		hybridization method.		
a) Determining the size of DNA	b) Determining the size of RNA	(OR)		
c) Quantification of RNA	d) Sequencing of RNA	b) Give a brief note on electroporation.		
10. Technique of inserting Deoxyribonu	cleic Acid (DNA) into plants is	20.a) Discuss about the Agarose Gel Electrophore	esis.	
known as		(OR)		
a) bio injection b) bio-fission	c) bio genetic d) bio diffusion	b) Briefly explain the whole embryo culture.		
,		21.a) Write about the transgenic plants.		
		(OR)		
SECTION	<u>N − B</u>	b) Discuss about Rhizobium.		
Answer any FIVE Questions:	$(5\times2=10)$	22.a) Describe the recombinant FMD vaccine.		
Write a note / comment on the follo	owing:	(OR)		
11.IPR.		b) List out the application of monoclonal antib	oodies.	
12.DNA ligase.		$\underline{\mathbf{SECTION}} - \underline{\mathbf{D}}$		
13. Gene cloning.		Answer any THREE Questions:	$(3\times10=30)$	
14 Call autum		23. Explain the scope of biotechnology.		
14. Cell culture.		24. Write an essay on construction of cDNA library	ry.	
15. Transgenic animals.		25. Give a detailed account on southern blotting techniques.		
16. Biopesticides.		26. Describe the Genetically engineered pest resistant plants.		
10. Diopesticides.		27. Write a detailed account on bioremediation.		
17. Biomining.		00000		

)E	P!	51
--	----	----	----

d) Ctrl + V

c) Ctrl + S



VIVEKANANDA COLLEGE, TIRUVEDAKAM WEST

(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part – III: Elective Subject: Fifth Semester: Paper – I

BIOSTATISTICS, COMPUTER APPLICATIONS & BIOINFORMATICS

Under CBCS - Credit 5

Time: **3** Hours Max. Marks: **75**

SECTION – A

Answer ALL Questions: $(10 \times 1 = 10)$ 1. Sample size depends on b) resource available a) type of problem investigated c) required precision d) all of them 2. The basis of classification in the case of geographical classification is a) locality d) locality and time b) time c) attribute 3. Inclusive class intervals should be converted into exclusive class intervals before calculating b) G.M c) Median d) A.M and G.M a) A.M 4. Mode is a) most frequent value b) least frequent value c) middle most value d) none 5. The ratio between experimental and observed result is represented by b) Chi-square a) Theta value d) None of these c) Variance ratio 6. Outcomes of an experiment are classified as a) logged events b) exponential results c) results d) events

7. Which shortcut make selected text Italic?

b) Ctrl + A

a) Ctrl + I

- 8. The numeric location of the computer which is connected to the internet is known as
 - a) DNS server b) BBS System c) IP Address d) DSL System
- 9. Among the following which is not a genome database?
 - a) Human
- b) C. elegans
- c) Swiss Prot d) Flybase
- 10. In pair wise sequence similarity search, the method that finds the best match of both sequence in their entity is
 - a) Global alignment

b) Local alignment

c) Scoring alignment

d) Matrix alignment

SECTION - B

Answer any FIVE Questions:

 $(5 \times 2 = 10)$

- 11. Finite Population.
- 12. Polygon.
- 13. Arithmetic mean.
- 14. Correlation.
- 15. Chi-square test.
- 16. Integrated Circuit.
- 17. Pan Genomics.

SECTION - C

Answer ALL Questions:

 $(5 \times 5 = 25)$

18.a) Write notes on the Advantages and disadvantages of Sampling.

(OR)

- b) Analyze the sources of secondary data collection.
- 19.a) Describe about the Median.

(OR)

- b) Write notes on the measures of dispersion and explain the Properties of a good measure of Dispersion.
- 20.a) State the Theorems of Probability.

(OR)

- b) Describe the population density (N).
- 21.a) Write a note on the Binary numeral system.

(OR)

- b) List out and explain the output devices.
- 22.a) Describe about the Bioinformatics and its applications.

(OR)

b) Explain the mechanism of BLAST.

SECTION - D

Answer any THREE Questions:

 $(3 \times 10 = 30)$

- 23. Write an essay on diagrammatic presentation of Bar diagram.
- 24. Find the Mean, Median, and mode from following data.
 - a) Find the mean : 6, 8, 11, 5, 2, 9, 7, 8
 - b) Find the Median: 11, 4, 9, 7, 10, 5, 6
 - c) Find the Mode : 2, 6, 3, 9, 5, 6, 2, 6
- 25. When a black rat (heterozygous) is crossed with another heterozygous black rat, 43 black, 15 cream and 22 albino offsprings are produced in the F_2 generation. Using chi-square test the genetic hypothesis 9:3:4 is consistent with the data.
- 26. Give an account of generations of computers.
- 27. Write a detailed notes on Proteomic tools.



(Autonomous & Residential)

[Affiliated to Madurai Kamaraj University]

B.Sc. Zoology Degree (Semester) Examinations, November 2019 Part – IV: Skill Based Subject: Fifth Semester: Paper – I

SERICULTURE

Under CBCS - Credit 2

Time: 2 Hours Max. Marks: 75

SECTION - A

Answer ALL Questions:

 $(10 \times 1 = 10)$

- 1. The rearing of silkworm is called
 - a) Sericulture
- b) Moriculture c) Vermiculture
- d) Aquaculture
- 2. The development of roots from the stem while it is attached to the mother plant.
 - a) Grafting
- b) Cutting
- c) Transplantation d) Layering
- 3. The technique of joining of the parts of two plants is called
 - a) Grafting
- b) Cutting
- c) Transplantation d) Layering
- 4. Name the method of removing of unwanted branches of the mulberry plants.
- a) Mulching
- b) Pruning
- c) Manuring
- d) Training
- 5. The Root rot disease of mulberry is caused by
 - a) Bacteria
- b) Fungus
- c) Virus
- d) Nematodes
- 6. Which part of silk gland drawn out silk in the form of fine filament?
 - a) Spinneret

b) Prothoracic gland

c) Scent glands

- d) Lyonnet gland
- 7. Which is the optimum temperature for silkworm rearing?
 - a) 24°C
- b) 34°C
- c) 44°C
- d) 54°C

- 8. Raksha Rekha is a replant for
 - a) Ant
- b) Uzi fly
- c) House fly
- d) Rat
- 9. Which of the following is used for bed cleaning?
 - a) Mountage
- b) Ant well
- c) Basket
- d) Net

- 10. The unwinding of silk thread from the cocoon is called
 - a) Silk reeling
- b) Pruning
- c) Mulching
- d) Irrigation

SECTION - B

Answer any FIVE Questions:

 $(5 \times 2 = 10)$

- 11. Expand and list out the functions of CSR&TI.
- 12. What is mulching?
- 13. Enumerate the advantages and disadvantages of chandrika?
- 14. Give any two methods physical disinfection.
- 15. What is spacing?
- 16. State the significance of stifling.
- 17. What is Brushing?

SECTION - C

Answer ALL Questions:

 $(3\times 9=27)$

- 18.a) State the significance of Silk Road.
- (OR)

(OR)

- b) What is irrigation? Give its types.
- 19.a) Explain the types of pruning and its advantages. (OR)
 - b) Discuss the different types of defective cocoons.
- 20.a) Describe the life cycle of Bombyx mori.
 - b) List out the physical characteristics features of cocoons.

SECTION - D

Answer any TWO Questions:

 $(2\times14=28)$

- 21. Give a detailed account on different methods of vegetative propagation in mulberry.
- 22. Describe the fungal diseases of mulberry.
- 23. Write an essay on rearing appliances used in sericulture.
- 24. Describe the methods of rearing operations.