~~~~	DEPARTMENT OF ZOOLOGY						
	Course Code: 09CT11	Programme:	B.SC	•	CIA: I Test		
	<b>Date:</b> 28.09.2020	Course:	ZOOLO	GY	Semester: I		
	Time: 2Hrs	Year:	Ι		Maximum: 50 Marks		
A COLUMNARY PROVIDENCE	Course Title:		INVERT	'EBRAJ	TES I		
ANSWER AL	L OUESTIONS	SECT	ION – A		10X1=10 Marks		
Multiple choic	ce questions:						
1. The lack of 1	notochord animal is calle	d			CO1		
a. Vertebrates	b. Invertebrates	c. Cho	rdates	d. Birds			
2. Which one c	of the following animal is	called slipper anim	nalcule		CO1		
a. Euglena	b. Volvox	c. Para	amecium	d. Amoeb	ba		
3. Asexual repr	roduction of Paramecium	is known as			CO1		
a. Conjugation	b. Autogamy	c. Cyte	ogamy	d. Binary	fission		
4. Entamoeba	causing a disease is calle	]		C	COI		
a. Tuberculosis	b. Amoebic dyse	ntery c. Malaria	d. Den	gue fever	001		
5. Pick out whi	ich one of the following i	s causing the sleep	ng sickness?		COI		
a. Entamoeba	b. Plasmodium	c. Try	panosoma	d. Amoeb	a CO 1		
6. Fasciola hep	patica occurs in	a Tim	a of Humon	d Human	CO4		
a. Blie duct of	sneep b. Liver of sneep	C. L1V6	er of Human	d. Human	olie duct		
7. which one c	b Coolenterates	ormed metazoans	husso	d Dohino	CO4		
a. Alloeda	D. Coelenterates	C. MOI	lusca	d. Echino			
o. Filliary nos	h Big	o Sno	:1	d Shoop	04		
a. $\Pi$ unital $0$ Anus is abse	U. Fig	C. Sha	11.	u. sneep	CO4		
2. Anus is abso	h Phorotima	c Par	inlaneta	d Unio	204		
10 Protonenhr	idia is a	0.101	pianeia	<b>u</b> . <i>Omo</i>	CO4		
a Excretory sy	stem h Digestive system	em c Circ	ulatory system	d Blood	suckers		
ANSWER AN	Y FIVE OUESTIONS	SECT	ION - B	<b>u</b> . <b>D</b> 100 <b>u</b>	5X2=10 Marks		
Very short an	swer:						
11. Give any fo	our salient features of Inv	retebrates			CO1		
12. List out the	major phyla of inverteb	ates			CO1		
13. What you r	neant by binary fission.				CO1		
14. Comment of	on Cestoda with example	S.			CO4		
15. Draw and l	abel the structure excrete	ory system of Fascia	ola hepatica		CO4		
16. What is a tr	riploblastic?		-		CO4		
17. Define: He	rmaphrodites.				CO4		
ANSWER AN	Y THREE QUESTION	IS SECT	ION – C		3X6=18 Marks		
Short answer:							
18. With a near	t sketch discuss the struct	ure of Paramecium			CO1		
19. Write a short account on the life cycle of Entamoeba.					CO1		
20. Describe bi	riefly the reproduction ar	d life cycle of Tryp	anosoma.		CO1		
21. List out the	characteristics of Turbe	llaria with example	s.		CO4		
22. Describe th	e life cycle of <i>Fasciola l</i>	epatica.			CO4		
ANSWER AN	Y ONE QUESTIONS	SECT	10N – D		1x12=12 Marks		
Long Answer:	ant on the nerve dreating	fnonomosium			CO1		
23. write an es	say on the reproduction	DI paramecium	· · · · · · · · · · · · · · · · · · ·	<b>T</b>			
24. Give a deta	med account on salient fe	atures of Platyhelm	inthes with clas	ss i remato	oda. CO4		

$\sim$		DEPARTMENT OF ZOOLOGY							
	<b>Course Code:</b> 09CT12 <b>Programme: B.SC.</b>		<b>).</b>	<b>СІА:</b> І Те	st				
		<b>Date:</b> 01.1	0.2020	<b>Course:</b>		ZOOLO	OGY	Semeste	<b>r:</b> I
		Time: 2Hr	`S	Year:		Ι		Maximu	<b>n:</b> 50 Marks
		Course Ti	tle:	INVERTEBRATE II					
			SECT	ION – A	Multi	ple choice que	estions		
Answe	er All Q	uestions:						10X1=	=10 Marks
1.	Which	is the common	n name of N	Nereis?					(CO1)
	a) Rag	worm	b) Tape w	/orm	c) Ring	g worm	d) Pin wo	orm	
2.	Parapoo	dia is found in	l						(CO1)
	a) Earth	nworm	b) Prawn		c) Ner	eis	d) Cockre	bach	
3.	Who pr	roposed the na	me Anneli	da?					(CO1)
	a) Linn	aeus	b) Lamaro	ck	c) Dale	es	d) Schwa	nn	
4.	The bo	dy of annelida	is divided	into a numb	per of se	gments called			(CO1)
	a) Setae	e	b) Appen	dage	c) Ann	uli	d) Metan	neres	
5.	Annelio	ls are							(CO1)
	a) Bilat	eral symmetry	y b) Asymn	netry	c) Rad	ial symmetry	d) none o	of these	
6.	Scorpi	on belongs to	the phylum	1		_			(CO3)
_	a) Arth	ropoda	b) Anneli	da	c) Nen	natoda	d) Mollus	sca	
7.	Insect v	which yield us	eful produc	ets are called	1				(CO3)
0	a) Bene	eficial insects	b) Harmfu	ul insects	c) Proc	luctive insects	d) Parasit	inc insects	
8.	The pho	enomenon of t	the existence	ce of several	l morph	ological forms	in a specie	s is called_	(CO3)
0	a) Caste	e system	b) Polymo	orphism .	c) Co-	operation	d) Warm	ing	$\langle CO2 \rangle$
9.	The wo	orker cells of h	b) S and	are 11	1 snape.	1	d) Dave d	1	(UU3)
10	a) I riar	igular	D) Square		c) Hex	agonal	a) Kound	l	(CO2)
10.	ine nes	st of termite is	called	-	a) Ec.::	:	d) Tameria		(UU3)
	a) Hous	ses	D) Hive		c) For	nicaries	a) Termi	arium	

SECTION – D very short answe	SECTION – B	Verv	short	answei
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	5.0.01
Answer any Five Questions:	5X2=10 Marks
11. What is coelom?	(CO1)
12. Define metamerism.	(CO1)
13. What is hermaphrodite?	(CO1)
14. Give a short note on Prosoma.	(CO3)
15. Comment on Termitarium.	(CO3)
16. Define Polymorphism.	(CO3)
17. What are Living Fossils?	(CO3)

# **SECTION – C** Short answer

3X6=18 Marks
(CO1)
(CO1)
(CO3)
(CO3)
(CO3)

# SECTION – D Long Answer

Answer any One Question:	1x12=12 Marks
23. Enlist the general characteristic features of phylum Annelida.	(CO1)
24. Write an essay on economic importance of insects.	(CO3)

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DEPARTMENT OF ZOOLOGY						
	<b>Course Code:</b> 09CT31	Programme:	B.SC.	CIA: I Test		
	Date: 28.09.2020	Course:	ZOOLOGY	Semester: III		
HAND THEAD	Time: 2Hrs	Year:	II	Maximum: 50 Marks		
Course Title: CELL BIOLOGY						
	SI	ECTION – A M	<b>Iultiple choice questions</b>	5		
Answer All Q	uestions:			<b>10X1=10 Marks</b>		
1. Kreb cycle i	s the component of			(CO3)		
a) Phot	osynthesis b) Aerobi	c respiration c) An	aerobic respiration d	) Photorespiration		
2. Ribosomes l	have their origin from			(CO3)		
a) Nucl	leus b) nucleolus c)	) Endoplasmic retice	ulum d) mitoc	hondria		
3. Which cell organelle is called protein factory? (CO3)						
a) Ribosome b) Mitochondria c) Lysosome d) Golgi body						
4. The Citric acid cycle was discovered by (CO3)						
a) De Bary b) Robert Brown c) Krebs d) Flemming and Kolliker						
5. Mitochondri	ial matrix has an enzyme	for		(CO3)		
a) Kreb	os cycle b) TCA cycle and	d electron transport	c) Glycolysis and TCA	cycle d) b and c		
6. The cell was discovered first by (CO1)						
a) Robe	ert Hooke b)	Robert Brown	c) Nicolson	d) Singer		
7. The region of prokaryotic cell accommodating nucleic acid is called (CO1)						
a) Nucleus b) Nucleoid c) Nucleolus d) Chromatin reticulum						
8. The light conferring maximum resolving power to a light microscope is (CO1)						
a) Green b) Red c) Blue d) Yellow						
9. Disruption of cell membrane and release of subcellular components is called (CO1)						
a) Chro	matography b) Mount	ing c) Homogeniz	ation d) Embe	aaing		
10. The differe	ence between TEM and S	EM 18 1n		(COI)		
a) Elect	tron source		b) Electromagnetic col	lS		
c) The	way of image formation	by electron beam	d) Electron aperture			

SECTION – B	Very Short Answer
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Answer any FIVE Questions:	5X2=10 Marks
11. State the principle of light microscope.	(CO1)
12. What is resolving power?	(CO1)
13. Define fixation .	(CO1)
14. What is centrifuge?	(CO1)
15. Define Oxidative phosphorylation.	(CO3)
16. What are initiation factors?	(CO3)
17. Comment on $F_1$ particle.	(CO3)
SECTION – C Short Answer	
Answer any THREE Questions:	3X6=18 Marks
18 Briafly discuss the structure of Pibosomes	$(\mathbf{CO3})$

(CO3)
(CO3)
(CO3)
(CO1)
(CO1)

# SECTION – C Long Answer

		$\mathbf{\tilde{c}}$	
Answer any ONE Question:			1X12=12 Marks
23. Discuss electron microscopy.			(CO1)
24. Write an essay on citric acid cyc	le.		(CO3)

Course Code: 09CT32         Programme: 09CT32         B.SC.         C1A: 1 Test           Date: 01.10.2020         Course: Time: 2Hrs         ZOOLOGY         Semester: III           Time: 2Hrs         Year: Course Title:         GENETICS         Semester: III           SECTION - A         Multiple choice questions         Answer All Questions: 10X1-10 Marks           1. Genetics is a branch of biology, which deals with a Laws of heredity and variations b. Process of cell division at gametogenesis         COTI           a. Laws of heredity and variations         b. Process of cell division at gametogenesis         COTI           a. Hereoffity and variations         b. Process of cell division at gametogenesis         COTI           a. Hereoffity and variations         b. Process of cell division at gametogenesis         COTI           a. Hereoffity and variations         b. Process of cell division at gametogenesis         COTI           a. Hereoffity and variations         b. Process of cell division at gametogenesis         COTI           a. String attribute of the following type of sex determination occurs in man? (COI)         A. String attribute of the following type of sex determination occurs in man? (CO4)         A: XX × XD + XV = XO         C: XX × XY + XY           7. Haemophilia is more common in males because of (CO4)         A. Recessive trait carried by Y-chromosome         CO4           b. Dominant character carried by Y-chromosom	~~~		DEPARTM	ENT OF ZOOLO	GY
Date: 01.10.2020         Course:         ZOOLOGY         Semester: III           Time: 2Hrs         Year:         I         Maximum: 50 Marks           Course Title:         GENETICS           SECTION - A         Multiple choice questions: Answer All Questions: 10X1=10 Marks           1. Genetics is a branch of biology, which deals with (C01)         a. Laws of heredity and variations         b. Process of cell division at gametogenesis           c. Formation of new species through natural selection         d. None of these         2. Who claimed to observe a min form of man inside the sperm? (C01)           a. Hersoker. b. Bateson         c. Weismann         d. Pythagorus           3. The phenotypic ratio of monohybrid cross is (C01)         a. 31         b. 12:1         c. 1:1         d. 9:3:31           6. Which of the following type of sex determination occurs in man? (C04)         a. Xr = XO         b. Xr = XY         d. XXr = XY           a. Recessive character carried by X-chromosome         c. Colour blindness         d. Malaria           9. The Y linked genes are called         (C04)         a. Chromosome           a. Recessive trait carried by X-chromosome         d. Malaria           9. The Y linked genes are called         (C04)         a. Chromosomes           9. The Y linked genes are called         (C04)         a. Chromosomes         b. Sex linkage         c.		<b>Course Code:</b> 09CT32	Programme:	B.SC.	CIA: I Test
Image         Image <thimage< th="">         Image         <thi< th=""><th></th><th><b>Date:</b> 01.10.2020</th><th>Course:</th><th>ZOOLOGY</th><th>Semester: III</th></thi<></thimage<>		<b>Date:</b> 01.10.2020	Course:	ZOOLOGY	Semester: III
Course Title:         GENETICS           SECTION – A         Multiple choice questions         Answer All Questions:         10X1=10 Marks           1. Genetics is a branch of biology, which deals with         (CO1)         a. Laws of herefity and variations         b. Process of cell division at gametogenesis           2. Who claimed to observe a min form of mainside the sperm?         (CO1)         a. Hertsoeker         b. Bateson         c. Weismann         d. Pythagorus           3. The phenotypic ratio of monohybrid cross is         (CO1)         a. 3:1         b. 1:2:1         c. 1:1         d. 9:3:3:1           4. Mendel's experimental material was         (CO1)         a. 3:1         b. 1:2:1         c. 1:1         d. 9:3:3:1           5. The test cross ratio is         (CO1)         a. X1 ~ X0         b. X1/Y ~ X0         c. XX ~ XY           6. Which of the following type of sex determination occurs in man?         (CO4)         a. Recessive character carried by Y-chromosome           b. Dominant character carried by Y-chromosome         (CO4)         a. Typhoid         b. Cholera         c. Colour blindness         d. Malaria           9. The Y linked genes are called         (CO4)         a. Dromosomes         b. Sex linkage         c. HH gene         d. Holandric gene           10. Haemophilia is a         CO1         issaae         (CO4)         a.		Time: 2Hrs	Year:	II	Maximum: 50 Marks
SECTION - A       Multiple choice questions       Answer All Questions:       10X1=10 Marks         1. Genetics is a branch of biology, which deals with       (CO1)         a. Laws of heredity and variations       b. Process of cell division at gametogenesis         c. Formation of new species through natural selection       d. None of these         2. Who claimed to observe a mini form of man inside the sperm?       (CO1)         a. Hertsoeker b. Bateson       c. Weismann       d. Pythagorus         3. The phenotypic ratio of monohybrid cross is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         4. Medel's experimental material was       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)       a. XX - XO       b. XY - XO         a. XX - XO       b. XY - XO       c. XX - XY       d. VXXX - XY         7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       d. Malaria         9. The Y linked genes are called       (CO4)         a. Typhoid       b. Cholera       c. Colour blindness       d. Malaria         9. The Y linked genes are called       (CO4)       a. blood disease       b. Colera       (CO4)	HEARI	Course Title:		GENET	ICS
1. Genetics is a branch of biology, which deals with       (CO1)         a. Laws of heredity and variations       b. Process of cell division at gametogenesis         c. Formation of new species through natural selection       d. None of these         2. Who claimed to observe a mini form of man inside the sperm?       (CO1)         a. Hertsoeker b. Bateson c. Weismann       d. Pythagorus         3. The phenotypic ratio of monohybrid cross is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         4. Mendel's experimental material was       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         5. The test cross ratio is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)       a. X - XO       b. XY - XO         a. Recessive character carried by Y-chromosome       c. Dominant trait carried by Y-chromosome         b. Dominant trait carried by Y-chromosome       d. Malaria         9. The Y linked genes are called       (CO4)         a. Typhoid       b. Cancer disease c. Lungs disease       d. Malaria         9. The Y linked genes are called       (CO4)       a. blood disease       b. Co11         1. Genment on mendelisms       (CO4)       a. blood dise	SECTION – A	A Multiple choice a	estions Answer A	Il Ouestions: 10X	1=10 Marks
a. Laws of heredity and variations       b. Process of cell division at gametogenesis         c. Formation of new species through natural selection       d. None of these         2. Who claimed to observe a mini form of man inside the sperm?       (CO1)         a. Hertsoeker b. Bateson       c. Weismann       d. Pythagorus         3. The phenotypic ratio of monohybrid cross is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         4. Mendel's experimental material was       (CO1)         a. 7isum sativum       b. Lathyrus oduratus       c. Oryza sativa d. Mirabilis jalappa         5. The test cross ratio is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)       a. XX - XO       b. XY - XO         a. XX - XO       b. XY - XO       c. XX - XY       d. XXX - XY         7. Haemophilia is more common in males because of       (CO4)       a. Recessive character carried by Y-chromosome         b. Dominant character carried by Y-chromosome       c. Oburnant character carried by Y-chromosome       c. Holandric gene         9. The Y linked genes are called       (CO4)       a. Holandric gene       10. Heamophilia is a         10. Haemophilia is a       C. Carcer disease c. Lungs disease       d. Heart disease	1. Gene	etics is a branch of biolog	gy, which deals with	(CO	1)
c. Formation of new species through natural selection d. None of these 2. Who claimed to observe a mini form of man inside the sperm? (CO1) a. Hertsocker b. Bateson c. Weismann d. Pythagorus 3. The phenotypic ratio of monohybrid cross is (CO1) a. 3:1 b. 1:2:1 c. 1:1 d. 9:3:3:1 4. Mendel's experimental material was (CO1) a. Pisum sativum b.Lathyrus odaratus c. Oryza sativa d. Mirabilis jalappa 5. The test cross ratio is (CO1) a. 3:1 b. 1:2:1 c. 1:1 d. 9:3:3:1 6. Which of the following type of sex determination occurs in man? (CO4) a. XX - XO b. XY - XO c. XX - XY d. XXX - XY 7. Haemophilia is more common in males because of (CO4) a. Recessive character carried by Y-chromosome b. Dominant trait carried by X-chromosome c. Dominant trait carried by X-chromosome b. Dominant trait carried by X-chromosome c. Dominant trait carried by X-chromosome b. CO4) a. CO4 a. Chromosomes b. Sex linkage c. HH gene d. Holandric gene 10. Haemophilia is a (CO4) a. CO4) a. CO4 b. Co10 b. Define alleles (CO4) c. CO4 c.	a. Law	s of heredity and variation	ons b. Process of c	ell division at gamet	ogenesis
<ul> <li>2. Who claimed to observe a mini form of man inside the sperm? (CO1) <ul> <li>a. Hertsoeker b. Bateson c. Weismann</li> <li>d. Pythagorus</li> </ul> </li> <li>3. The phenotypic ratio of monohybrid cross is (CO1) <ul> <li>a. 3:1</li> <li>b. 1:2:1</li> <li>c. 1:1</li> <li>d. 9:3:3:1</li> </ul> </li> <li>4. Mendel's experimental material was (CO1) <ul> <li>a. Pisum satisum b. Lathyrus odaratus c. Oryza sativa d. Mirrabilis jalappa</li> </ul> </li> <li>5. The test cross ratio is (CO1) <ul> <li>a. 3:1</li> <li>b. 1:2:1</li> <li>c. 1:1</li> <li>d. 9:3:3:1</li> </ul> </li> <li>6. Which of the following type of sex determination occurs in man? (CO4) <ul> <li>a. XX – XO</li> <li>b. XY – XO</li> <li>c. XX – XY</li> <li>d. XXX - XY</li> </ul> </li> <li>7. Haemophilia is more common in males because of (CO4) <ul> <li>a. Recessive character carried by Y-chromosome</li> <li>b. Dominant character carried by Y-chromosome</li> <li>c. Dominant trait carried by X-chromosome</li> <li>d. Recessive character carried by Y-chromosome</li> <li>e. Dominant trait carried by X-chromosome.</li> </ul> </li> <li>8. Which one of the following is hereditary disease? (CO4) <ul> <li>a. Typhoid</li> <li>b. Cholera</li> <li>c. Colour blindness</li> <li>d. Holandric gene <ul> <li>10. Haemophilia is a</li> <li>(CO4)</li> <li>a. blood disease</li> <li>b. Cancer disease c. Lungs disease d. Heart disease</li> </ul> </li> <li>SECTION – B Very short answer Answer any Five Questions: 5X2=10 Marks <ul> <li>11. Comment on mendelisms</li> <li>(CO1)</li> <li>13. What is backcross?</li> <li>(CO4)</li> <li>14. What are supplementary genes?</li> <li>(CO4)</li> <li>15. Differentiate autosome and allosome</li> <li>(CO4)</li> </ul> </li> <li>SECTION – C Short answer Answer any Three Questions: 5X2=10 Marks</li> <li>18. Write the reasons for Mendel's success</li> <li>(CO1)</li> <li>14. What are supplementary genes?</li> <li>(CO4)</li> <li>15. Differentiate autosome and allosome</li> <li>(CO4)</li> <li>16. What is dyanandromorphism?</li> <li>(CO4)</li> </ul></li></ul>	c. Forn	nation of new species thr	ough natural selection	on d. None of t	hese
a. Hertsoeker b. Bateson c. Weismann       d. Pythagorus         3. The phenotypic ratio of monohybrid cross is       (COI)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         4. Mendel's experimental material was       (COI)         a. Pisum sativum       b.Lathyrus odaratus       c. Oryza sativa d. Mirabilis jalappa         5. The test cross ratio is       (COI)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)       a. XX – XO       b. XY – XO         a. Xx – XO       b. XY – XO       c. XX – XY       d. XXX - XY         7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       b. Dominant character carried by Y-chromosome         b. Dominant trait carried by X-chromosome       d. Malaria         9. The Y linked genes are called       (CO4)         a. Chromosomes       b. Sex linkage       c. HH gene         10. Haemophilia is a       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       d. CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO1)         15. Diff	2. Who	claimed to observe a mi	ini form of man insic	le the sperm? (CO	1)
<ul> <li>3. The phenotypic ratio of monohybrid cross is (COI)</li> <li>a. 3:1 b. 1:2:1 c. 1:1 d. 9:3:3:1</li> <li>4. Mendel's experimental material was (COI)</li> <li>a. Pisum sativum b.Lathyrus odaratus c. Oryza sativa d. Mirabilis jalappa</li> <li>5. The test cross ratio is (COI)</li> <li>a. 3:1 b. 1:2:1 c. 1:1 d. 9:3:3:1</li> <li>6. Which of the following type of sex determination occurs in man? (CO4)</li> <li>a. XX – XO b. XY – XO c. XX – XY d. XXX - XY</li> <li>7. Haemophilia is more common in males because of (CO4)</li> <li>a. Recessive character carried by Y-chromosome</li> <li>b. Dominant character carried by Y-chromosome</li> <li>c. Dominant trait carried by Y-chromosome</li> <li>d. Recessive trait carried by Y-chromosome</li> <li>d. CO4)</li> <li>a. Typhoid b. Cholera c. Colour blindness d. Malaria</li> <li>9. The Y linked genes are called (CO4)</li> <li>a. Chromosomes b. Sex linkage c. HH gene d. Holandric gene</li> <li>10. Haemophilia is a (CO4)</li> <li>a. blood disease b. Cancer disease c. Lungs disease d. Heart disease</li> <li>SECTION – B Very short answer Answer any Five Questions: 5X2=10 Marks</li> <li>11. Comment on mendelisms (CO1)</li> <li>12. Define alleles (CO4)</li> <li>13. What is backcross? (CO1)</li> <li>14. What are supplementary genes? (CO1)</li> <li>15. Differentiate autosome and allosome (CO4)</li> <li>16. What is Gyanandromorphism? (CO4)</li> <li>SECTION – C Short answer Answer any Three Questions 3X6=18 Marks</li> <li>18. Write the reasons for Mendel's success (CO1)</li> <li>20. Comment on the following (i) Penetrance (ii) Expressivity (CO1)</li> <li>21. Write an account on colour blindness (CO4)</li> <li>SECTION – D Long Answer Answer any One Question: 1x12=12 Marks</li></ul>	a. Hert	soeker b. Bateson c.	Weismann	d. Pythagoru	18
a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         4. Mendel's experimental material was       (CO1)         a. Pisum sativum       b.Lathyrus odaratus       c. Oryza sativa d. Mirabilis jalappa         5. The test cross ratio is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)         a. XX – XO       b. XY – XO       c. XX – XY       d. XXX - XY         7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       E         b. Dominant character carried by Y-chromosome       E         c. Dominant trait carried by X-chromosome       E         8. Which one of the following is hereditary disease?       (CO4)         a. Typhoid       b. Cholera       c. Colour blindness       d. Malaria         9. The Y linked genes are called       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       d. Heart disease         SECTION – B       Very short answer Answer any Five Questions:       SX2=10 Marks         11. Comment on mendelisms       (CO1)       12. Define alleles       (CO1)         12. Define alleles       (CO1)       13. What is backcross?       (CO4) <tr< td=""><td>3. The</td><th>phenotypic ratio of mono</th><th>phybrid cross is</th><td>(CO</td><td>1)</td></tr<>	3. The	phenotypic ratio of mono	phybrid cross is	(CO	1)
4. Mendel's experimental material was       (CO1)         a. Pisum sativum       b.Lathyrus odaratus       c. Oryza sativa d. Mirabilis jalappa         5. The test cross ratio is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)       a. XX – XO       b. XY – XO       c. XX – XY         7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       c. Dominant trait carried by X-chromosome         b. Dominant trait carried by X-chromosome       d. Malaria         9. The Y linked genes are called       (CO4)         a. Chromosomes       b. Sex linkage       c. HH gene       d. Holandric gene         10. Haemophilia is a       (CO4)         a. Chromosomes       b. Sex linkage       c. HH gene       d. Holandric gene         10. Haemophilia is a       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       SZ210 Marks         11. Comment on mendelisms       (CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO1)         15. Differentiate autosome and allosome       (CO4) <t< td=""><td>a. 3:1</td><th>b. 1:2:1 c.</th><th>1:1</th><td>d. 9:3:3:1</td><td></td></t<>	a. 3:1	b. 1:2:1 c.	1:1	d. 9:3:3:1	
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5. The test cross ratio is       (CO1)         a. 3:1       b. 1:2:1       c. 1:1       d. 9:3:3:1         6. Which of the following type of sex determination occurs in man? (CO4)         a. XX – XO       b. XY – XO       c. XX – XY       d. XXX - XY         7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       b. Dominant character carried by Y-chromosome         c. Dominant trait carried by X-chromosome       c. Colour blindness         d. Recessive trait carried by X-chromosome       d. Malaria         g. The Y linked genes are called       (CO4)         a. Typhoid       b. Cholera       c. Colour blindness         d. All aria       (CO4)         a. Typhoid       b. Cancer disease c. Lungs disease       d. Holandric gene         10. Haemophilia is a       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       d. Heart disease         SECTION – B       Very short answer Answer any Five Questions:       5X2=10 Marks         11. Comment on mendelisms       (CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO4)         15. Differentiate autosome and allosome       (CO4) <td>a. Pisu</td> <th><i>m sativum</i> b.<i>Lathyri</i></th> <th>us odaratus c. Oryz</th> <td>a sativa d. Mirabilis</td> <td>s jalappa</td>	a. Pisu	<i>m sativum</i> b. <i>Lathyri</i>	us odaratus c. Oryz	a sativa d. Mirabilis	s jalappa
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7. Haemophilia is more common in males because of       (CO4)         a. Recessive character carried by Y-chromosome       b. Dominant character carried by Y-chromosome         c. Dominant trait carried by X-chromosome       d. Recessive trait carried by X-chromosome         d. Recessive trait carried by X-chromosome       d. Recessive trait carried by X-chromosome         d. Recessive trait carried by X-chromosome.       8. Which one of the following is hereditary disease?       (CO4)         a. Typhoid       b. Cholera       c. Colour blindness       d. Malaria         9. The Y linked genes are called       (CO4)         a. Chromosomes       b. Sex linkage       c. HH gene       d. Holandric gene         10. Haemophilia is a       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       d. Heart disease         SECTION - B Very short answer Answer any Five Questions:         5X2=10 Marks       (CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO4)         15. Differentiate autosome and allosome       (CO4)         16. What is Gyanandromorphism?       (CO4)         17. Comment on Barr body       (CO1)         18. Write the reasons for Mendel's success       (CO1)	a. XX -	- XO b. XY – XO	c. XX – XY	d. XXX - X	Y
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c. Dominant trait carried by X-chromosome d. Recessive trait carried by X-chromosome. 8. Which one of the following is hereditary disease? (CO4) a. Typhoid b. Cholera c. Colour blindness d. Malaria 9. The Y linked genes are called (CO4) a. Chromosomes b. Sex linkage c. HH gene d. Holandric gene 10. Haemophilia is a (CO4) a. blood disease b. Cancer disease c. Lungs disease d. Heart disease SECTION – B Very short answer Answer any Five Questions: 5X2=10 Marks 11. Comment on mendelisms (CO1) 12. Define alleles (CO1) 13. What is backcross? (CO1) 14. What are supplementary genes? (CO1) 15. Differentiate autosome and allosome (CO4) 16. What is Gyanandromorphism? (CO4) 17. Comment on Barr body (CO4) SECTION – C Short answer Answer any Three Questions 3X6=18 Marks 18. Write the reasons for Mendel's success (CO1) 20. Comment on the following (i) Penetrance (ii) Expressivity (CO1) 21. Write an account on colour blindness (CO4) 22. Explain the bleeder's disease with suitable examples (CO4) SECTION – D Long Answer Answer any One Question: 1x12=12 Marks 23. Write an essay on Mendel's law with illustrations (CO1)	b. Dom	inant character carried b	y Y-chromosome		
<ul> <li>d. Recessive trait carried by X-chromosome.</li> <li>8. Which one of the following is hereditary disease?</li> <li>a. Typhoid b. Cholera c. Colour blindness d. Malaria</li> <li>9. The Y linked genes are called (CO4)</li> <li>a. Chromosomes b. Sex linkage c. HH gene d. Holandric gene</li> <li>10. Haemophilia is a (CO4)</li> <li>a. blood disease b. Cancer disease c. Lungs disease d. Heart disease</li> <li>SECTION – B Very short answer Answer any Five Questions: 5X2=10 Marks</li> <li>11. Comment on mendelisms (CO1)</li> <li>12. Define alleles (CO1)</li> <li>13. What is backcross? (CO1)</li> <li>14. What are supplementary genes? (CO1)</li> <li>15. Differentiate autosome and allosome (CO4)</li> <li>16. What is Gyanandromorphism? (CO4)</li> <li>17. Comment on Barr body (CO4)</li> <li>18. Write the reasons for Mendel's success (CO1)</li> <li>19. Analyse the biochemical basis of Epitasis (CO1)</li> <li>20. Comment on the following (i) Penetrance (ii) Expressivity (CO1)</li> <li>21. Write an account on colour blindness (CO4)</li> <li>22. Explain the bleeder's disease with suitable examples (CO4)</li> <li>23. Write an essay on Mendel's law with illustrations (CO1)</li> </ul>	c. Dom	inant trait carried by X-o	chromosome		
8. Which one of the following is hereditary disease?       (CO4)         a. Typhoid       b. Cholera       c. Colour blindness       d. Malaria         9. The Y linked genes are called       (CO4)         a. Chromosomes       b. Sex linkage       c. HH gene       d. Holandric gene         10. Haemophilia is a       (CO4)         a. blood disease       b. Cancer disease c. Lungs disease       d. Heart disease         SECTION – B Very short answer Answer any Five Questions:         5X2=10 Marks       (CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO4)         15. Differentiate autosome and allosome       (CO4)         16. What is Gyanandromorphism?       (CO4)         17. Comment on Barr body       (CO4)         18. Write the reasons for Mendel's success       (CO1)         19. Analyse the biochemical basis of Epitasis       (CO1)         20. Comment on the following (i) Penetrance (ii) Expressivity       (CO1)         21. Write an account on colour blindness       (CO4)         22. Explain the bleeder's disease with suitable examples       (CO4)         32. Write an essay on Mendel's law with illustrations       (CO4)	d. Rece	essive trait carried by X-o	chromosome.		
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a. block disease       b. Calleer disease       c. heart disease         SECTION - B       Very short answer Answer any Five Questions:       5X2=10 Marks         11. Comment on mendelisms       (CO1)         12. Define alleles       (CO1)         13. What is backcross?       (CO1)         14. What are supplementary genes?       (CO1)         15. Differentiate autosome and allosome       (CO4)         16. What is Gyanandromorphism?       (CO4)         17. Comment on Barr body       (CO4)         SECTION - C       Short answer Answer any Three Questions       3X6=18 Marks         18. Write the reasons for Mendel's success       (CO1)         19. Analyse the biochemical basis of Epitasis       (CO1)         20. Comment on the following (i) Penetrance (ii) Expressivity       (CO1)         21. Write an account on colour blindness       (CO4)         22. Explain the bleeder's disease with suitable examples       (CO4)         SECTION - D       Long Answer Answer any One Question:       1x12=12 Marks         23. Write an essay on Mendel's law with illustrations       (CO1)	10. на а. bloo	d disease b Cancer	r diagona a Lunga di	(CU) A Haart dia	<b>4</b> )
SECTION - BVery short answer Answer any Five Questions.SX2-10 Marks11. Comment on mendelisms(CO1)12. Define alleles(CO1)13. What is backcross?(CO1)14. What are supplementary genes?(CO1)15. Differentiate autosome and allosome(CO4)16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO4)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	a. 01000	U UISEASE U. Callee	A newor ony Five	$\mathbf{O}_{\mathbf{u}}$	-10 Mortes
11. Confinent of mendensins(CO1)12. Define alleles(CO1)13. What is backcross?(CO1)14. What are supplementary genes?(CO1)15. Differentiate autosome and allosome(CO4)16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - C Short answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - D Long Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	11  Con	mment on mendelisms	Answer any Five		-10 Marks 1)
13. What is backcross?(CO1)14. What are supplementary genes?(CO1)15. Differentiate autosome and allosome(CO4)16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	11. Col 12. Det	fine alleles			1)
14. What are supplementary genes?(CO1)15. Differentiate autosome and allosome(CO4)16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - C Short answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - D Long Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	12. Del 13. Wh	at is backcross?		(CO)	1)
15. Differentiate autosome and allosome(CO4)16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	14. Wh	at are supplementary ge	nes?	(CO	1)
16. What is Gyanandromorphism?(CO4)17. Comment on Barr body(CO4)SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	15. Dif	ferentiate autosome and	allosome	(CO	<b>4</b> )
17. Comment on Barr body(CO4)SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	16. Wh	at is Gvanandromorphis	m?	(CO	4)
SECTION - CShort answer Answer any Three Questions3X6=18 Marks18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	17. Co	mment on Barr body		(CO	4)
18. Write the reasons for Mendel's success(CO1)19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION – D Long Answer Answer any One Question:23. Write an essay on Mendel's law with illustrations1x12=12 Marks	SECTION - C	C Short answer Ans	wer any Three Oue	stions 3X6	=18 Marks
19. Analyse the biochemical basis of Epitasis(CO1)20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	18. Wr	ite the reasons for Mend	el's success	(CO	1)
20. Comment on the following (i) Penetrance (ii) Expressivity(CO1)21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	19. An	alyse the biochemical ba	sis of Epitasis	(CO	1)
21. Write an account on colour blindness(CO4)22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	20. Coi	mment on the following	(i) Penetrance (ii) Ex	pressivity (CO	1)
22. Explain the bleeder's disease with suitable examples(CO4)SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	21. Wr	ite an account on colour	blindness	(CO	4)
SECTION - DLong Answer Answer any One Question:1x12=12 Marks23. Write an essay on Mendel's law with illustrations(CO1)	22. Ex	plain the bleeder's disea	se with suitable exar	nples (CO	4)
23. Write an essay on Mendel's law with illustrations (CO1)	SECTION -	D Long Answer Ans	wer any One Quest	ion: 1x12	2=12 Marks
	23. Wr	ite an essay on Mendel's	law with illustration	ns (CO	1)

24. Discuss in detail about chromosomal theory of sex determination in animals (CO4)

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	<b>Course Code:</b> 09SB31	Programme:	B.SC.	CIA: I Test				
	<b>Date:</b> 07.10.2020	Course:	ZOOLOGY	Semester: III				
	Time: 2Hrs	Year:	II	Maximum: 25 Marks				
	Course Title:		Public Health and	l Hygiene				
ANS	WER ALL QUESTION	S SECTION -	- A	5X1=5 Marks				
Mult	iple choice questions:							
1. Th	e most important function	n of carbohydrate is		(CO1)				
a. Hea	art function b. Supply en	nergy c. Tissues for	rmation d.Liverforma	tion				
2.Wh	ere is the headquarters of	WHO located?		(CO1)				
a. Gei	neva b. USA	c. Inc	dia d. Ru	ssia				
3. Th	e pure calcium deficiency	y is		(CO1)				
a. Ost	teoporosis I	o. Molasses	c. Diabetic	d.Fever				
4. De	ficiency of vitamin K is			(CO1)				
a. Nei	rve disorder b. Diarr	hea c. Delays clo	tting of blood d.Ber	i-beri				
5. He	alth is			(CO1)				
a. Mo	ono dimensional b. Doub	le dimensional c. M	lultidimensional d. All	the above				
ANS	WER ANY TWO QUES	STIONS SEC	TION – B	2X2=4 Marks				
Very	short answer:			(001)				
6. WI	hat is balanced diet?	1 1 1 1 1		(COI)				
7. WI	ite any two water & fat s	oluble vitamins.		(COI)				
8. CO	initiation social concept			(COI)				
9. WI	The life role of fal.		TION C	(COI) 1V6-6 Montra				
ANS	ANSWER ANY ONE QUESTIONS SECTION – C IX6=6 Marks							
<u>10 W</u>	<u>l answer.</u> Irite a short note on vitan	nin C		( <b>CO1</b> )				
10. Write a short note on vitanini C . (COI)								
A NSV	ANSWER ANY ONE OUESTIONS SECTION D 1V10 Morks							
Long	Answer•	IIUIIO DEC		12810 1441 185				
12. W	/hat is Vitamin? Describe	e the various Vitami	n deficiency diseases	( <b>CO1</b> )				
13. B	riefly explain the physiol	ogical role of Carbo	phydrates and protein.	(CO1)				

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	Course Code: 09AT01	Programme:	B.SC.	CIA: I Test				
	Date: 03.10.2020	Course:	CHEM./BOT.	Semester: III				
	Time: 2Hrs	Year:	II	Maximum: 50 Marks				
	Course Title:		Animal Organiz	ation				
SECTION – A Multiple choice questions								
Answer All Qu	uestions:			<b>10X1=10 Marks</b>				
1. How m	nany contractile vacuoles	are found in Param	ecium?	(CO2)				
a) One	b) two	c) thre	e d) four					
2. The mo	ode of nutrition in amoeb	a is		(CO2)				
a) Hole	ophytic b) Holozo	bic b) Para	asitic d) Saproz	zoic				
3. Which	of the following is an ex	ample for the mixot	hropic nutrition?	(CO2)				
a) Eug	lena b) Amoel	ba c) Vol	vox d) Endam	noeba				
4. The ca	pture and passage of food	l into the cytoplasm	is called	(CO2)				
a) Inge	stion b) Digest	ion c) Abs	orption d) Egesti	on				
5. Hydra	is a			(CO2)				
a) Hert	bivore b) Omniv	vore c) Car	nivore d) Parasit	te				
6. The ter	m bionomial nomenclatu	ire was proposed by		(CO1)				
a) Hil	debrand b) Linnae	c) Hy	man d) Young	<b>T</b>				
7. The ca	vity located between the	body wall and the a	limentary canal is called	(CO1)				
a) Syn	mmetry b) Coelor	n c) Tiss	sue d) Organ					
8. The an	imal possessing a true co	elom is called		(CO1)				
a) Co	-coelomic epithelum b)	Coelomata c) Bod	ly wall d) Pseud	ocoelomocytes				
9. The sci	ience of classification of	species is called		(CO1)				
a) To	xonomy b) Anima	ll kingdom c) Sub	-kingdom d) Evolut	tion				
10. The as	sembling of animals into	groups based on the	eir similarity is known as	(CO1)				
a) An	atomy b) Morph	ology c) Clas	ssification d) Palaeo	ontology				

SECTION – B very snort answer	CTION – B	Very short answer
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SECTION – B Very short answer	
Answer any Five Questions:	5X2=10 Marks
11. What is nutrition?	(CO2)
12. Define Ingestion and Egestion.	(CO2)
13. What is parasite?	(CO2)
14. What is coelom?	(CO1)
15. What do you meant by symmetry?	(CO1)
16. Write a short note on holophytic nutrition.	(CO1)
17. Mention any two functions of contractile vacuoles.	(CO1)

#### **SECTION – C** Short answer

Answer any Three Questions	3X6=18 Marks
18. Describe the types of nutrition in protozoa with suitable example.	(CO2)
19. Give an account on gills in fishes with neat diagram.	(CO2)
20. Describe briefly the general characters of protozoa.	(CO1)
21. Give a short note on radial symmetry.	(CO1)
22. Write a short note about the advantages of nomenclature.	(CO1)
SECTION – D Long Answer	
Answer any One Question:	1x12=12 Marks
23. Draw the structure of frog digestive system and comment on it.	(CO2)
24. Explain in detail the principles taxonomy	(CO1)

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	<b>Course Code:</b> 09CT51	Programme:	B.SC.	CIA: I Test			
	<b>Date:</b> 29.09.2020	Course:	ZOOLOGY	Semester: V			
	Time: 2Hrs	Year:	III	Maximum: 50 Marks			
AND HEARING AND	Course Title:		BIOTECHNOL	OGY			
ANSWER AL	L OUESTIONS	SECTI	ON – A	10X1=10 Marks			
Multiple choic	ce questions						
1. The variation	in the restriction DNA frag	ment lengths of differe	ent species is	CO3			
a) RFLP	b) AFLP	c) SSR	d) RAPD				
2. Thermus aque	aticus is the source of			CO3			
a) Vent polymer	ase b) Primary enzym	e c) Taq polymeras	se d) Primase enzyr	ne			
3. Microarray cl	nips are made up of			CO3			
a) Silicon	b) Glass	c) Gold	d) Both a and b				
4. The technique	e among the following used	in DNA finger printin	g is	CO3			
a) Northern blot	ting b) Southern blottin	g c) Eastern blotti	ng d) Western blotti	ng			
5. DNA profilin	g is applied in comparison	of different animal spe	cies is	CO3			
a) Phylogenetic	blot b) Animal profiling	g c) Zoo blot	d) Animal blot	<u> </u>			
6. The first tran	isgenic plant to be produ		1) 77 1	C04			
a) Maize	b) Wheat	c) Cotton	d) Tobacco	<u> </u>			
/. The first cro	p plant genomes sequenc		J) D - 1	CO4			
a) Maize	b) wheat	c) Rice	d) Barley	CO4			
8. First plant pa	arasitic nematode discove	ered was:	(1) $(2)$ $(1)$ $(1)$ $(1)$ $(1)$	C04			
a) Meloldogyr	le D) Helerodera	c) Anguina	d) Globodera	CO4			
9. which enzyl	h) A mulase	igineering?	d) matrices a	CO4			
a) DNA Ligase	e D) Amylase	c) Lipase	d) restriction ef	ndonuclease			
a) Introduction	aneties of plants are prod	Solootion and hybrid	lightion a) Mutation or	CO4			
d) Selection on	d Introduction	Selection and hybrid	isation () wutation a	la Selection			
		SECTI	ON P	5V2-10 Morks			
Vory short on	Swor:	SECTI	$\mathbf{D}\mathbf{N} = \mathbf{D}$	SA2-10 Walks			
11 Define: Cry	vonreservation			CO3			
11. Define. Cry 12. What is cel	1 line?			CO3			
12. What is cer 13. Comment of	n Thermus aquaticus			CO3			
14 What are tr	ansgenes?			CO4			
15 Write a sho	ort note on Emphysema			CO4			
16 What is mo	lecular farming?			CO4			
17 Mention th	e importance of <i>Bt</i> toxin	σene		CO4			
ANSWER AN	3X6=18 Marks						
Short answer:	QUESTION						
18. Write an ac	count on application and	working principles	of Agarose gel electror	horesis. CO3			
19. Explain bri	efly the significance and	applications of South	hern blotting technique	. CO3			
20. Write a sho	ort account on microarray	and its applications.	8	CO3			
21. Give a shore	rt note on tissue plasming	gen activator (tPA)		CO4			
22. Write a not	e on the following: (i) B	ood factor VIII (ii) E	Erythropoietin (EPO)	CO4			
ANSWER AN	Y ONE QUESTIONS	SECTI	$\dot{ON} - \dot{D}$	1x12=12 Marks			
Long Answer:							
02 111 1	.1 1 1	( DOD)	1 1				

23. Write an essay on the polymerase chain reaction (PCR) and discuss its principles and applications. CO324. Give a detailed account on transgenic animals with examples.CO4

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	Course Code: 09CT52	Programme:	B.SC.	CIA: I Test			
	<b>Date:</b> 30.09.2020	Course:	ZOOLOGY	Semester: V			
	Time: 2Hrs	Year:	III	Maximum: 50 Marks			
AND HEARING AND	Course Title:	L	BIOTECHNOL	OGY			
ANSWER AL	L OUESTIONS	SECTI	ON – A	10X1=10 Marks			
Multiple choic	ce questions						
1. The variation	in the restriction DNA frag	gment lengths of differe	ent species is	CO3			
a) RFLP	b) AFLP	c) SSR	d) RAPD				
2. Thermus aque	aticus is the source of			CO3			
a) Vent polymer	ase b) Primary enzym	e c) Taq polymeras	se d) Primase enzym	ne			
3. Microarray cl	nips are made up of			CO3			
a) Silicon	b) Glass	c) Gold	d) Both a and b				
4. The technique	e among the following used	l in DNA finger printin	g is	CO3			
a) Northern blot	ting b) Southern blottin	g c) Eastern blottu	ng d) Western blotti	ing			
5. DNA profilin	g is applied in comparison	of different animal spe		003			
a) Phylogenetic	blot b) Animal profiling	g C) ZOO DIOT	d) Animal blot	CO4			
o. The first tran	isgenic plant to be produ		d) Takasas	04			
a) Maize	b) wheat	c) Cotton	d) Tobacco	CO4			
7. The first cro	b) Wheet	a) <b>Bi</b> co	d) Darlay	04			
8 Eirst plant p	0) wheat	c) Kice	u) Daney	CO4			
a) Malaidagur	h) Hataradara	a) Anguing	d) Globodora	04			
0 Which enzy	me is useful in genetic er	c) Aliguina	u) Olobouela	CO4			
a) DNA Ligase	hie is useful in genetic en	c) Lipase	d) restriction e	ndonuclease			
10 The new ve	arieties of plants are prod	uced by	u) restriction e	COA			
a) Introduction	and mutation (b)	Selection and hybrid	lisation c) Mutation a	nd Selection			
d) Selection an	d Introduction	Selection and hybrid	insution c) withution a				
ANSWER AN	Y FIVE OUESTIONS	SECTI	ON – B	5X2=10 Marks			
Verv short an	swer:	SECTI					
11. Define: Cry	vopreservation.			CO3			
12. What is cel	1 line?			CO3			
13. Comment of	on Thermus aquaticus.			CO3			
14. What are tr	ansgenes?			CO4			
15. Write a sho	ort note on Emphysema.			CO4			
16. What is mo	blecular farming?			CO4			
17. Mention th	e importance of <i>Bt</i> toxin	gene.		CO4			
ANSWER AN	Y THREE QUESTION	S SECTI	ON – C	3X6=18 Marks			
Short answer:	-						
18. Write an ac	count on application and	working principles of	of Agarose gel electrop	phoresis. CO3			
19. Explain bri	efly the significance and	applications of South	nern blotting technique	e. CO3			
20. Write a sho	ort account on microarray	and its applications.		CO3			
21. Give a shore	rt note on tissue plasmine	ogen activator (tPA)		CO4			
22. Write a not	e on the following: (i) Bl	ood factor VIII (ii) E	Erythropoietin (EPO)	CO4			
ANSWER AN	Y ONE QUESTIONS	SECTI	ON - D	1x12=12 Marks			
Long Answer:			1 1				

23. Write an essay on the polymerase chain reaction (PCR) and discuss its principles and applications. CO324. Give a detailed account on transgenic animals with examples.CO4

$\sim$				DEP	ARTM	ENT OF ZOOLO	GΥ			
		<b>Course Co</b> 09CT53	ode:	Program	nme:	B.SC.		<b>СІА:</b> І Те	st	
	(E)	<b>Date:</b> 05.1	0.2020	Course:		ZOOLOGY		Semeste	<b>r:</b> V	
		Time: 2Hr	S	Year:		III		Maximu	<b>n:</b> 50 Marks	
	AR	Course Ti	tle:		Μ	icrobiology and	Im	[mmunology		
	SECTION – A Multiple choice questions									
Answe	er All Q	uestions:						10X1=	=10 Marks	
1)	The fir	rst virus was o	liscovered	by Ivanow	v <b>ski in</b>				(CO1)	
	a) 1896	5	b) 1897		c) 189	8	d)	) 1899		
2)	The en	riched mediu	m contain	S					(CO1)	
	a) Bloo	od	b) Serum		c) Yea	st extract	d)	) All		
3)		discovered	l antibioti	c enzyme.					(CO1)	
	a) Spal	lanzani	b) Alexan	der Flemin	g c) Buc	chner	d)	) Robbins		
4)	The nu	itrient agar is	composed	l of					(CO1)	
	a) Peptone b) Beef extract c) Nacl					d)	) All			
5) Actinomycetes is an intermediate link between							(CO1)			
	a) Bact	eria and fungi	b) Bacteri	ia and virus	c) Bac	teria and Algae	d)	) Bacteria an	d yeast	
6)	Tissue	fluid in the ly	mphatic s	ystem is ca	lled	•			(CO4)	
	a) Plası	ma	b) hemop	lasma	c) Rin	ger's solution	d)	) lymph		
7)	Which	of the follow	ing is NOT	a lymphoi	id orgai	n:			(CO4)	
	a) Red	bone marrow	b) tonsils		c) sple	een	d)	) kidney		
8)	Virule	nce reduce mi	icrobes use	ed for vacc	ination	are considered as			(CO4)	
	a) Toxo	oid	b) Dorma	nt	c) A v	virulent	d)	) Attenuated		
9)	Vaccin	ation against	small pox	was discov	vered by	7			(CO4)	
	a) Edw	ard Jenner	b) Benjan	nin Jesty	c) Mai	ry Worley	d)	) None of the	ese	
10)	)	is localized	swelling o	caused by a	Iccumu	lation of tissue fluid	•		(CO4)	
	a) Imm	une deficiency	y diseaseb)	Allergies	c) Aut	oimmune disease	d)	) Oedema		

# SECTION – B Very Short Answer

Answer any FIVE Questions:	5X2=10 Marks
11) Comment on Actinomycetes	(CO1)
12) Define: Transduction	(CO1)
13) Write the salient features of fungi	(CO1)
14) What are all the major targets of defense system?	(CO4)
15) What is immunity?	(CO4)
16) Give a note on acquired immunity.	(CO4)
17) What is phagocytosis?	(CO4)

#### **SECTION – C** Short Answer

Answer any THREE Questions:	3X6=18 Marks
18) Briefly discuss the scope of Microbiology.	(CO1)
19) Explain the Lytic cycle of $T_4$ Bacteriophage.	(CO1)
20) Describe the structural features of Bacteria.	(CO1)
21) Describe the physical and mechanical factors of innate immunity.	(CO4)
22) Define vaccine and tabulate immunization schedule.	(CO4)

# SECTION – C Long Answer

Answer any ONE Question:	1X12=12 Marks
23) Write an account of the various types of culture media with examples.	(CO1)
24) Discuss elaborately the structure and functions of primary lymphoid organs.	(CO4)

#### IFCE A TZ A MI MUROT 605 004 **MIDINT**

	VIVENANANDA	DEP/	, TIKUVED ARTMENT	OF ZOOL	OGY	JZJ ZJT	
	<b>Course Code:</b> 09EP51	Program	me:	B.SC.		CIA: I Test	
	<b>Date:</b> 01.10.2020	Course:		ZOOLOG	Y	Semester: V	
	Time: 2Hrs	Year:		III		Maximum: 50 Mark	S
HANDHEARTHEAD	Course Title:	Biostati	stics Com	nuter Anr	licatio	n and Bioinformatic	. <u>.</u> •S
GECTION		Diostati					Ú,
<b>SECTION</b> $-A$	A Multiple choice qu	uestions Al	nswer All Qu	estions: 10	JXI=10	Marks (CO1)	
1) 1 Data obta	late b erroyed dete	from persona	l experimenta	d none of	called	$(\mathbf{COI})$	
a. primary $(2)$ 2. Porecenter	ala D. allayeu uala	c. chione	d by	u. none c	of these	(CO1)	
2) 2. I ercentag	y polygon b Ogive repu	resentation c	nie diagram	d freque	nev tabl	(001)	
3) 3 Continuo	us variable are represent	ed by	. pie ulagram	u. neque	ney tabl	( <b>CO</b> 1)	
a histogram	h line diagram	c bar dia	oram	d nie char	ŀ	(001)	
4) 4 The basis	of classification in the	case of geogr	aphical classi	fication is		( <b>CO1</b> )	
a locality	b. time	c. attribute	d local	lity and time	e		
5) 5. The techn	iques used to collect Pri	mary data are		ing and this	-	( <b>CO1</b> )	
a. Census m	nethod		b. sampling i	method			
c. Mailed or	uestionnaire	d. Botł	census and s	ampling me	ethod		
6) Among the f	ollowing which is not a ge	nome database	e			(CO5)	
a. Human	b. C. elegance	c. Swis	s – Prot d. Fly	base			
7) An example	of curated secondary datab	bases is				(CO5)	
a. NCBI	b. EMBL	c. DDB	J d. Pro	osite			
8) The disease	databases that can be view	ed through				(CO5)	
a. PDB	b. TrEMBL	c. OMI	M and OMIA	d. Prosite			
9) BLAST is a	programme which is mo	eant for				(CO5)	
a. Multiple	sequence b	. Pair wise se	quence				
C. Both a an $10$ In the c	UD Upper to a f DI AST	in aclour ac	e sequence	ant tha ma		notahing is shown with t	ha
10) In the s	earch results of bLAST	In colour coc	ing of angin			natching is shown with t	ne
a Red	h Orange	c Vell	OW/	d Black	.05)		
a. Red SECTION - F	0. Oralige R Vary short answer	$\mathbf{A} \mathbf{n} \mathbf{s} \mathbf{w} \mathbf{o} \mathbf{r} \mathbf{a} \mathbf{n}$	uv Five Auest	ions: 5	X2-10 N	Iarks	
11 What is sau	mnling?	Answer an	ly Five Quest	.10115. 52	<b>X2</b> -10 IV	(CO1)	
12. Define fou	r and cross method					(CO1)	
13. List out pa	rts of a table					(CO1)	
14. Expand N	CBI write down the UR	L for the sam	ne			(CO5)	
15. What are c	omposite databases? Giv	e an example	e			(CO5)	
16. Mention th	he structures of FASTA	format of seq	uences			(CO5)	
17. What are n	naintainer state of databa	uses? Give su	itable exampl	es		(CO5)	
SECTION – O	C Short answer Ans	wer any Thi	ee Questions	s 31	X6=18 N	larks	
18. Describe c	lassification of data with	illustrations	c			(CO1)	
19. Prepare a c	continuous frequency tab	le for the foll	owing data w	which shows	length o	of fishes(cm).	
-			-	(CO1)	-		
10,12,10,15,16	5,17,18,20,22,25,30,33,3	1,38,40					
19,11,17,12,15	5,11,31,33,35,34,22,25,2	7,21,30					
20. Explain the	e following: i. Bar diagra	um ii. Histo	ogram			(CO1)	
21. Describe th	he home page of NCBI				( <b>C</b>	<b>O5</b> )	
22. Explain the	e types of BLAST and th	eir character	istics			(CO5)	
SECTION – I	D Long Answer Ar	nswer any O	ne Question:	1	x12=12 I	Marks	
23. Compute n	nean, median and mode	for the given	data which sh	nows the we	ight of f	ishes in grams	
	· · ·		(CO1)				
	Vt. of fishes (g) 1	0 0-20	0-30	0-40	0-50	0-60	
	No of fishes 7	5	6	11	10	1	

No. of fishes756119424. Write down the process of retrieval of a nucleotide sequence and compare its local similarity using<br/>BLAST tool from NCBI

	VIVEKANANDA	COLLEGE, TIRI	UVEDAKAM	WEST	- 625 234	
Lawrence Willie	DEPARTMENT OF ZOOLOGY					
	<b>Course Code:</b> 09SB51	Programme:	B.S	С	CIA: I Test	
	<b>Date:</b> 06.10.2020	Course:	ZOOLOGY III		Semester: V	
HANDHIANTHEAD	Time: 2Hrs	Year:			Maximum: 25 Marks	
	Course Title: SI			RICULTURE		
	SEC	TION – A Multi	ple choice que	estions		
Answer all qu	lestions	vallad			$1 \ge 5=5 \text{ marks}$	
1. The stu			• •	1. 4	1.	
a) Serie	culture b) Moric	ulture c) Ver	miculture	d) Aqua	aculture	
2. The rea	aring of silkworm is calle	ed				
a) Ser	riculture b) Moric	ulture c) Ver	miculture	d) Aqua	aculture	
3. The de	velopment of roots from	the stem while it is	still attached to	o the mot	her plant.	
a) Graf	a) Grafting b) Cuttir		g c) Transplantation d) I		ring	
4. The tec	chnique of joining of the	parts of two plants i	is called			
a) Graf	a) Grafting b) Cuttin		g c) Transplantation d) La		ring	
5. Name t	the method of removing	of unwanted branch	es of the mulbe	erry plant	s.	
a) Mu	llching b) Prunin	eg c) Mai	nuring	d) Trair	ning	
	SI	ECTION – B Ve	ery Short Ansv	ver		
Answer any two questions:					2x2 = 4 marks	
6. Define mulching and give its importance.						
7. Mentio	7. Mention the significance of pruning.					
8. Expand	8. Expand and list out the functions of CSB.					
9. Give a	short note on manuring.					
		SECTION – C	Short Answer			
Answer any one question:					1x6 = 6 marks	
10. Explain	n different methods of Irr	igation.				
11. Descrit	be Pruning. Give its adva	ntages and limitation	ons.			
		SECTION – D	Long Answer			
Answer any o	Answer any one question:					
12. Write a	an essay on different met	hods of vegetative p	propagation in	mulberry.		

13. Discuss elaborately the seedling propagation.