

BIOLOGY HSSC-I

SECTION - A (Marks 17)

	MRG				Punjab Te	ext Book	Board			
Time	allow	/ed: 25	Minutes				V	ersion	Num	ber 7 1 0 4
Note:	CIVIR	Section – A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.								
2. 1	Choose the correct answer A / B / C / D by filling the relevant bubble for each question on the OMR Answer Sheet according to the instructions given there. Each part carries one mark.									
	1)	Gastri A.	c juice is secret Mucus	ed by mu	ucosal layer of	the stoma B.	ach. The z Gastrir	Zymoge n	n cells o	of mucosal layer secret
		C.	Hydrochloric :	acid		D.		ogen ·		
	2)	Respii A.	ration is MORE Reptiles	efficient B.	and elaborate Amphibians		C.		D.	Mammals
	3)	MOST A.	of the photosy Lipids	nthetic fo B.	ood is transpor Sucrose	ted in phic	oem in the Glucos		: D.	Starch
	4)	The _	leve	l of orga	nization is LES	SS definite	e in plants	than it i	s in ani	mals.
		A.	Organs	B.	Cells	C.	Comm	unity	D.	Tissues
	5)	The re A.	moval or degra Biological con	dation of trol	environmenta	il pollutant B.	t or toxic n Bio ma	naterial gnificati	by living on	g organism is called:
		C.	Bio accumula	tion		D. ·	Biorem	ediation)	
	6)	When A.	a polysaccharid Synthesis	le is brok B.	en down into Hydrolysis	monosaco C.	haride un Decom	its, this position	phenon D.	nenon is called: Condensation
	7)	Insulin A.	hormone is a p	rotein. It B.	consists of 2 of 141	chains and C.	d both cha 51	ins con	tain D.	amino acid
	8)	A non- A.	protein part of a Cofactor	ın enzym	ie covalently b	onded to B.	the protein Coenzy		wn as:	
		C.	Activator			D.	Prosthe	etic grou	ıp qı	
	9)	Which A.	of the following Transmission	is NOT for the second of the	the function of ses	smooth e B.		ic reticu etabolis		
		C.	Detoxification	of harmf	ul drugs	D.	Protein	synthes	sis	
	10)	It is als A.	o called the fac Nucleolus	tory of ril	bosome synth	esis; B.	Nucleo	plasm	,	
		C.	Golgi bodies			D.		asmic R	eticulur	n
	11)	The co	mplete mature a	and infed B.	tious particle i Capsid	is called: C.	Prion		D.	Virion
	12)	Which A.	of the following Camphylobact	bacteriu er	m is an examp	ole of facu B.	Itative and			
		C.	E. Coli			D.	Spiroch			
	13)	African A.	sleeping sickne Trichonympha		used by:	. В.	Trichine	ella		
		C.	Apicomplexan			D.	Trypano			
	14)	Parasit called:	ic fungi absorb	nutrients	directly from I	iving host			e help	of special hyphal tips
		A.	Appressorium	B.	Haustoria	C.	Soredia		D.	Rhizoid
	15)	Heteros A.	spory is the cha Lycopsida	racteristi B.	cs of: Sphenopsida	a C.	Bryopsi	da	D.	Psilopsida
	16)	Which of A.	of the following Separate sexe	is NOT tl s				rtilagino	us fishe	es)?
	17)	C. In the li	No swim bladd ght dependent s		ohotosynthesi	D. s. the final	Placoid Laccentor		ron ie:	

C.

Plastocyanin

D.

Ferredoxin

Oxygen

B.

NADP



BIOLOGY HSSC-I

Punjab Text Book Board

Time allowed: 2:35 Hours

Total Marks Sections B, C and D: 68

The Questions of sections B, C and D are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION - B (Marks 21)

(Chapters 1-8)

Q. 2	Ansv	$(7 \times 3 = 21)$		
	(i)	a.	What do you know about Biomes?	(1.5)
		b.	What is inductive reasoning?	(1.5)
	(ii)	Draw the structure of triglyceride.		
	/iii)	\\/rita	e down the hiological roles of plasma membrane	

Write down the biological roles of plasma membrane. (III)

(iv) What will happen if a chromosome loses its centromere? (01)Enlist the functions of Leucoplast and Chromoplast. (02)

(V) Why are scientific names more useful than the common names?

Differentiate between lytic and lysogenic life cycle of a bacteriophage. (iv)

(vii) How do autotrophic bacteria get food?

Why are green algae considered as an ancestor group of green plants? (viii)

Give the similarities and differences between fungi and plants. (ix)

Why are yeasts heavily used in genetic and molecular biology research? (x)

SECTION - C (Marks 21)

(Chapters 9 - 14)

Q. 3	Answ	$(7 \times 3 = 21)$					
	(i)	Write	e down any three general characteristics of Bryophytes.				
	(ii) Differentiate between Proterostomia and Deuterostomia.						
	(iii) What do you know about infestation and disinfestation?(iv) Write down the economic importance of sponges.						
	(v)	a.	What are accessory pigments? Give examples.	(02)			
		b.	How does the action spectrum in photosynthesis occur?	(01)			
	(vi)	a.	Why omnivores are capable of eating meat and plants?	(02)			
		b.	What are Nematocysts?	(01)			
	(vii)	What are the factors that affect the oxygen carrying capacity of haemoglobin?					
	(viii)	Write down the symptoms and causes of pulmonary tuberculosis					

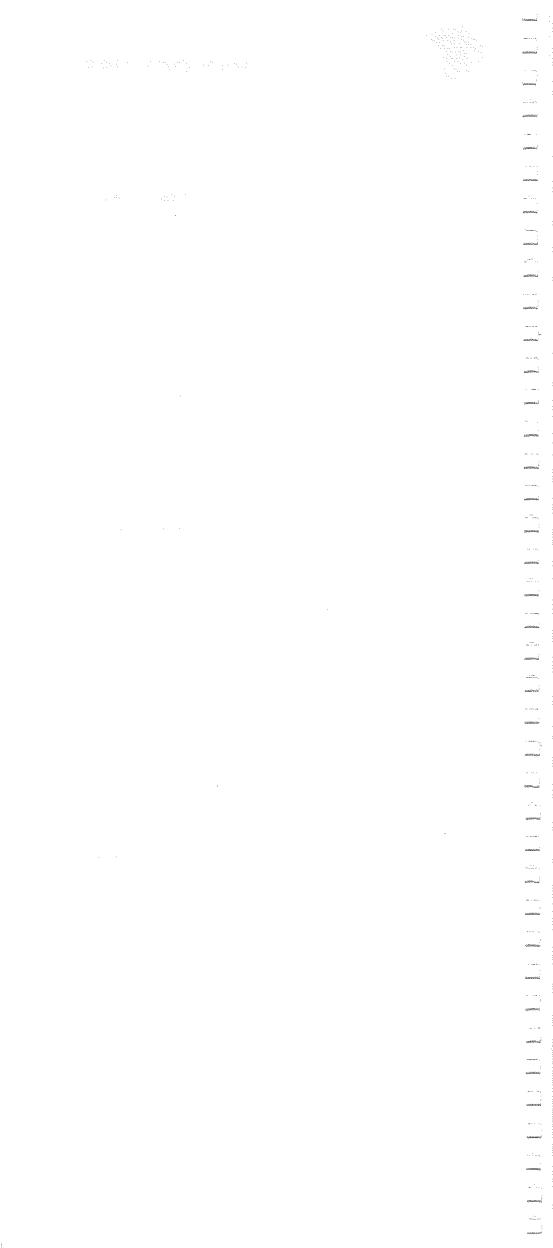
Write down the symptoms and causes of pulmonary tuberculosis. (viii)

(ix)Transpiration is a necessary evil. Briefly explain your answer with reasons.

What functions are performed by lymphatic system? (x)

SECTION - D (Marks 26)

Note:		Attempt any TWO questions. All questions carry equal marks.	$(2 \times 13 = 26)$
Q. 4	a.	Describe the structure and working of human heart with diagrams.	(3.5+3.5+2)
	b,	Discuss the trends toward seed habit in plants.	(04)
Q. 5	a.	Give a detailed account of digestion and absorption in small intestine with diagram.	(6+2)
	b.	Discuss the growth and reproduction in bacteria.	(05)
Q. 6	a.	Describe Kreb's cycle in detail with a neat sketch.	(6+3)
	b.	What are the factors that affect the rate of enzyme action?	(04)



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Q. 1

BIOLOGY HSSC-I

SECTION - A (Marks 17)

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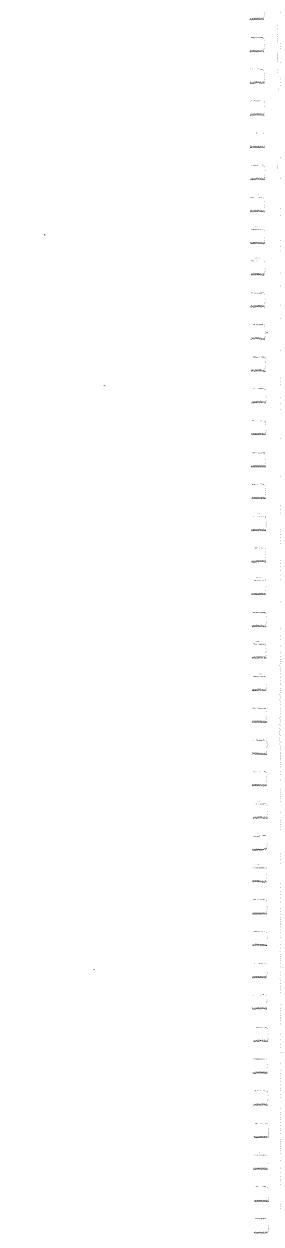
Time allowed: 25 Minutes

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Note: Section – A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Choose the correct answer A / B / C / D by filling the relevant bubble for each question on the OMR

Ansı	ver Shee	t according to t	the instr	uctions given t	here. Ea	ach part carries	one ma	rk.	
1)	The s	ecretion of pancr	eatic jui	ce is controlled b	ру:				
	A.	Secretin	B.	Acetylcholine	C.	Ereṗsin	D.	Gastrin	
2)	Deoxy	genated blood f	rom Gall	bladder is collec	cted by _	veir	۱.		
	A.	Hepatic Portal	B.	Splenic	C.	Mesenteric	D.	Cystic	
3)	After r	emoval of infecti	ion from	the body, the ce	lls which	n shut down the i	mmune	response are	
		T-cells	•		•				
	A.	Cytotoxic	B.	Helper	C.	Suppressor	D.	Memory	
4)	Which	one of the follow	ving is N	OT the function	of Smoo	oth Endoplasmic	Reticulu	m?	
	A. C.	Synthesis of L Spindle format			B. D.	Storage of Cal Detoxification	cium		
5)	The pe	ercentage of wat	er in Jell	y Fish is about:					
	A.	90	B.	85	C.	99	D.	20	
6)	Vitami	n A is an examp	le of:						
	A. C.	Diterpene Polyterpene			B. D.	Triterpene Monoterpene	•		
7)	Histidi	ne decarboxylas	e is an e	xample of:					
	A.	Lyases	B.	Proteases	C.	Isomerases	D.	Transferases	
8)	Flow o	f electrons from	PSII to F	PSI in Electron T	Franspor	t chain occurs th	rough:		
	A.	$PC \rightarrow Cyt.b_6$ -	$\rightarrow Cyt.f$	$\rightarrow PQ$	B.	$PQ \rightarrow Cyt.f$ –	$\rightarrow Cyt.b_6$	$\rightarrow PC$	
•	C.	$Cyt.b_6 \rightarrow Cyt.j$	$f \rightarrow PQ$	$\rightarrow PC$	D.	$PQ \rightarrow Cyt.b_6$ -	$\rightarrow Cyt.f$	$\rightarrow PC$	
9)	Which one of the following virus has a polyhedral capsid with glycoprotein spikes at vertex?								
	A. C.	Bacteriophage Influenza Virus			B. D.	Adenovirus Tobacco Mosa	ic Virus		
10)	The sh	nape of <i>Pseudon</i>	nonas ba	cterium is:					
	A.	Spherical	B.	Spiral	C.	Coma like	D.	Rod like	
11)	The tra	ansfer of genetic	material	from one bacter	rium to t	he other through	the third	l party is called:	
	A.	Transduction	B.	Transformation	ı C.	Binary Fission	D.	Conjugation	
12)	The ter	rm Protista was _l	proposed	d by:					
	A. C.	Ernst Haeckel Herbert Coplar	nd		B. D.	Robert Whittak John Hog	er		
13)	Trypan	osoma is a/an:							
	A.	Zooflagellate	B.	Apicomplexan	C.	Dinoflagellate	D.	Ciliate	
14)	Ascom	ycota are comm	only calle	ed	fungi.				
	A.	Sac	B.	Club	C.	Slime molds	D.	Conjugating	
15)	All of th	ne following are	oarts of f	emale gametopl	hyte in A	ngiosperms EX (CEPT:		
	Α.	Synergids			B.	Egg cell			
	C.	Generative Nuc	cleus		D.	Antipodal cells			
16)	Sac like	e digestive syste	m is a cl	naracteristic of p	hylum:				
	A.	Mollusca	B.	Cnidaria	C.	Arthropoda	D.	Annelida	
17)	TACT t	theory does NOT	include	:					
	A.	Translocation	B.	Tension	C.	Adhesion	D. •	Transpiration	





BIOLOGY HSSC-I

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Time allowed: 2:35 Hours

Total Marks Sections B, C and D: 68

NOTE: The Questions of sections B, C and D are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION - B (Marks 21)

(Chapters 1-7)

Q. 2 Answer any SEVEN parts from the following. All parts carry equal marks. $(7 \times 3 = 21)$

- Briefly explain any three diseases in Humans caused by Fungi.
- Write down the cause, symptoms and prevention of Pulmonary Tuberculosis. (ii)
- (iii) How are Red algae and Diatoms important for humans?
- Define Non Competitive inhibitor. Also write about Reversible Non Competitive inhibitors. (iv)
- How does concentration of enzyme affect the rate of an enzyme action? (V)
- (vi) Write any three unifying features of Archaea.
- Give any three differences between mRNA and tRNA. (vii)
- Enlist and define the types of Stereoisomers of Monosaccharides. (viii)
- Define: (ix)
 - a. Electrophoresis
- Spectrophotometry b.
- C. Resolution
- Define Autophagy. How are lysosomes involved in it? (x)

SECTION - C (Marks 21)

(Chapters 8 - 13)

Answer any SEVEN parts from the following. All parts carry equal marks. Q. 3

 $(7 \times 3 = 21)$

 $(2 \times 13 = 26)$

- Give any three differences between Protostomes and Deuterostomes. (i)
- Briefly explain the Apoplast pathway taken by water to reach the root xylem. (ii)
- (iii) Write about the structure of Bark in plants.
- (iv) In the following two adjacent cells:

Cell A

Ψw= -1400 kPa Ψp= 600 kPa

Чs= -2000 kРа

Cell B

Ψw≈ -600 kPa Ψp= 800 kPa

Ψs= –1400kРa

- Which cell has higher Water Potential? a.
- What will be the Water Potential and Solute Potential of cells at equilibrium? b.
- Write about the structure of layers of the heart wall. (v)
- What is the role of Oral cavity in chemical digestion? (vi) a.
 - b. Define Peristalsis.

Note:

Q. 5

- How are Arterioles involved in Vasoconstriction? (vii)
- Write down the steps of action of the Complement System against a bacterium. (viii)

Attempt any TWO questions. All questions carry equal marks.

- (ix) Write about Natural Active and Natural Passive Immunity.
- Briefly explain Coronary circulation in humans. (x)

SECTION - D (Marks 26)

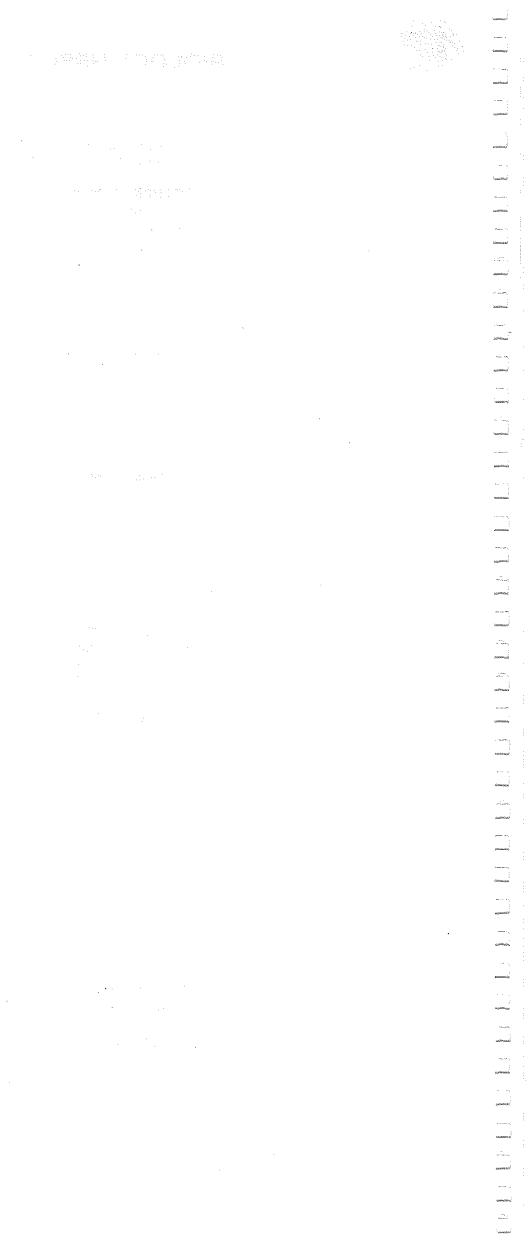
~ 4	_	Fundain the attend of Oxidation whose of Ohyankoia. Also write their respective regetions	(5+3)
Q. 4	a.	Explain the steps of Oxidative phase of Glycolysis. Also write their respective reactions.	(373)
	h	Write down the general characteristics of Class Mammalia in detail	(05)

vvrite down the general characteristics of Class Mammalia in det b,

(80)Write a detailed account of functions of Human Stomach. a. (4+1)How does Bacteriophage replicate in a Lytic cycle? Also draw the diagram. b.

Explain Life cycle of a Fern. Also draw the diagram of its Life Cycle. (8+2)Q. 6 a.

(03)Write down the functions of Golgi complex. b.





BIOLOGY HSSC-I

SECTION - A (Marks 17)

Section – A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which should be completed in the first 25 minutes and handed over to the

National Book Foundation

Time allowed: 25 Minutes

Version Number 3 1 0 5

	Cent	re Sup	erintendent. Dele	ting/ov	verwriting is not	allowe	ed. Do not use le	ad pen	oil.	
Q. 1	Choc Ansv	ose the wer She	correct answer A	A/B/C	C / D by filling th tructions given	e relev there.	vant bubble for e Each part carries	ach que s one m	estion on the OMR ark.	
÷	1)	Whi	ch of the following	is invol	lvėd in muscle co	ntracti	on?			
		A. C.	Microfilaments Intermediate F		ts	B. D.	Microtubules Radial Spoke	·s		
	2)	The	Stereoisomer of a	Monos	saccharide which	has di	fferent arrangeme	ent of ∸ F	I and – OH at only	
			asymmetric carbo				_		•	
		A.	Enantiomers	В.	Polymer .	C.	Epimers	D.	Diastereoisomer	
	3)	The	enzyme which car	work i	in both alkaline a	nd acid	lic conditions is:			
		A.	Pepsin	В.	Erepsin	C.	Papain	D.	Trypsin	
	4)	The	term "Bacterium" v	vas intr	oduced by	* 1	_ in 1882.		••	
		A.	John Hog	B.	Ehrenberg	. C.	Ernst Haecke	I. D.	Leeuwenhoek	
	5)	The	example of Pleom	orphic l	bacterium is:					
,		A. C.	Pseudomonas Helicobacter p			B. D.	Spirillum Treponema p	allidum	•	
	6)	If a tuft of flagella is present at one end of the b					ım, the condition	is:		
		A. C.	Amphitrichous Monopolar Mo	notricho	ous	B. D.	Peritrichous Lophotrichous	;		
	7)	Chlo	<i>rella</i> is an example	of:	•					
		A.	Dinoflagellate	В.	Brown algae	C.	Red algae	D.	Green algae	
	8)	Phyto	ophthora infestans	is a:	•				•	
		A.	Slime Mold	B.	Water Mold	. С.	Bread Mold	D.	Green Mold	
	9)	Нера	titis C is caused b	у:			٠			
		A.	Picornavirus	B.	Hepadnavirus	C.	Flavivirus	D.	Parovirus	
	10)	Mem	bers of phylum As	chelmir	nthes are also ca	lled:				
		A. C.	Ringworms Segmented wo	rms		B. D.	Round worms Flat worms			
	11)	The t	The tongue like structure – Radula is present in:							
		A.	Tape worm	B.	Snail	C.	Leech	D.	Fruit Fly	
	12)		cells of sto	mach:	secrete HCl.					
		A.	Parietal	B.	Chief	C.	Zymogen	D.	Endocrine	
	13)	Choo	se the CORRECT	statem	ent about the str	ucture	of Heart Wall.			
		A.	Epicardium – Ir	ner – C	Cardiac Muscles	В.	Endocardium -	- Outer	– Squamous Epitheliun	
		C.	Myocardium (Outer –	Smooth Muscles	D.	Myocardium –	Middle -	- Cardiac Muscles	
	14)	All of	the following are f	unction	s of Endogenous	Pyrog	ens EXCEPT:			
		A. C.	Reduce Iron in Reduce Viral Re		on	B. D.	Increase Temperature Produce Antibodies			
	15)	Selag	inella belongs to _	<u>-</u>	group of plar	ıts.				
		A.	Psilopsida	B.	Pteropsida	C.	Lycopsida	D.	Sphenopsida	
	16)	Which	of the following c	haracte	er is NOT related	to Dice	ots?			
		A. C.	Tap root Parallel venatio	n in lea	f	B. D.	Vascular Bund Pentamerous f		ring in stem	
	17)	Nervo	us spasm, convul	sion an	d psychotic delus	sion oc	cur in:			
	•	Α	Histoplasmosis:	В	Athlete's foot	С	Candidiasis	D.	Ergotism	



BIOLOGY HSSC-I

National Book Foundation

Time allowed: 2:35 Hours

Total Marks Sections B, C and D: 68

The Questions of sections B, C and D are to be answered on the separately provided answer book. NOTE: Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION - B (Marks 21)

(Chapters 1-7)

		(Chapters 1 - 7)					
Q. 2	Answer any SEVEN parts from the following. All parts carry equal marks.						
	(i)	What is the role of Fungi in medicine industry?					
	(ii)	Name any three groups of Protozoa with one example of each.					
	(iii)	Briefly write about any two types of Archaea which inhabit extreme environment	al conditions.				
	(iv)	Draw a flow sheet showing Calvin cycle.					
	(v)	Who proposed Induced Fit model for Enzyme Action? Briefly explain it.					
	(vi)	Define Irreversible Non- competitive inhibitors. Briefly explain with an example.					

Give any three differences between Starch and Glycogen. (vii) (viii)

Heterochromatin Chromatography C. Centrifugation b. Why are Lysosomes called 'Suicidal Bags'? Explain briefly. (ix)

Write the names and functions of any three Plasma membrane proteins. (x)

SECTION - C (Marks 21)

		(Chapters 8 – 13)
Q. 3	Answ	er any SEVEN parts from the following. All parts carry equal marks. (7 x 3 = 21)
	(i)	Briefly write about Land adaptation of Bryophytes for the absorption of Carbon dioxide.
	(ii)	Briefly explain the role of evolution of pollen tube in evolution of seed.
	(iii)	How do Chondrichthyes and Osteichthyes differ in Gills, Caudal fins and Skin?
	(iv)	a. What is the role of liver in Storage of Materials?
		b. How does defecation reflex occur in infants?
	(v)	Write about the groups of plants classified on the basis of Photoperiodism.
	(vi)	Define vein and write down its structure.
	(vii)	What do you know about Congenital Heart problem?
	(viii)	Write down the steps of Inflammatory response in second line of defence.
	(ix)	Briefly explain Autoimmune diseases.
	(x)	Write down the structure of a typical Antibody.

	SECTION - D (Marks 26)						
Note:		Attempt any TWO questions. All questions carry equal marks. (2	x 13 = 26)				
Q. 4	a.	Describe Life Cycle of HIV. Also draw the diagram.	(6+2)				
	b.	Write about the general characteristics of class Aves in detail.	(05)				
Q. 5	a.	How does absorption of digested food occur in the Small Intestine of Humans?	(80)				
	b.	Draw General structure of an amino acid. Write about Structural conformations in Proteins.	(1+4)				
Q. 6	a.	Write a detailed account of Mechanism of Translocation of organic solutes in plants. Also					
		draw the diagram.	(4.5+1.5)				
	b.	Write down the steps of Preparatory phase of Glycolysis. Also write the reactions.	(5+2)				