

Student Bounty.com Answer Sheet No.

Sig. of Invigilator._

BIOLOGY HSSC-I

SECTION - A (Marks 17)

Time allowed: 25 Minutes

NOTE:	Section-A is compulsory and comprises pages 1-2. All parts of this section are to be answered
	on the question paper itself. It 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.

	Cer	ntre Su	perinteлdent. Deleting/overw	riting is not allowe	ed. Do not use lead pencil.
Q. 1	2. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.				
	(i) Which scientist first developed the technique of vaccination in 1796 AD?			ation in 1796 AD?	
		A.	Robert Brown	B.	Edward Jenner
		C.	Emil Fischer	D.	Kosh Cant
	(ii)	Glyc	osidic bond is a covalent bond	and is formed betwe	een two
		Α.	Disaccharides	B.	Monosaccharides
		C.	Oligosaccharides	D.	Polysaccharides
	(iii)	Whic	ch term we will use when the tw	o amino acids join e	each other?
		A.	Monopeptide	B.	Dipeptide
		C.	Tripeptide	D.	Tetra peptide
(iv) The presence of nucleus in the cell wa				was reported by	
		Α.	T. Schwann	B.	Louis Pasteur
		C.	Robert Brown	D.	Rudolph Virchow
(v) Which part of the cell is formed on the inner surface of a			a plant cell at the end?		
		A.	Primary cell wall	B.	Middle Lamella
		C.	Secondary cell wall	D.	All of these
	(vi)	The I	biological name of Onion is		
		A.	Solanum tubersom	B.	Allium cepa
		C.	Cassia fistula	D.	Lycopersicum esculentum
	(vii)	The a	agent responsible for rabies is		-
		A.	Rabid dogs	B.	Foxes
		C.	Cats	D.	All of these
	(viii)	The	smallest bacterium for example	some members of	genus Mycoplasma are
		abou	t in diame	ter.	
		A.	50 to 100nm	В.	100 to 150 nm
		C.	50 to 150 nm	Đ.	100 to 200 nm

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(ix)	The	cell wall of each diatom consists	of	
	A.	Single shell	В.	Two shells
	C.	Four shells	D.	Six shells
(x)	Malu	s (apple) belongs to family		
	Α.	Solanaceae	В.	Rosaceae
	C.	Fabaceae	D.	Poaceae
(xi)	Liver	flukes and tape worms belong t	o phylum	
	A.	Porifera	В.	Platyhelminthes
	C.	Coelentrata	D.	Annelida
(xii)	In wh	nich process/processes is the sto	ored energy in ca	rbohydrates released?
	A.	Photosynthesis	В.	Glycolysis
	C.	Respiration	D.	Glycolysis and respiration
(xiii)	The	molecular formula for chlorophyl	I 'a' is	
	A.	$C_{55} H_{70} O_6 N_4 Mg$	В.	$C_{55} H_{74} O_6 N_4 Mg$
	C.	$C_{55} H_{72} O_5 N_4 Mg$	D.	$C_{55} H_{72} O_4 N_5 Mg$
(xiv)	Paro	tid gland is found in		
	A.	Stomach	В.	Mouth
	C.	Intestine	D.	Esophagus
(xv)	The I	Mucosa of the stomach possess	es	cells.
	Α.	Mucous	В.	Parietal
	C.	Zymogen	D.	All of these
(xvi)	Whic	h part of the human lung lacks o	artilages?	
	A.	Trachea	В.	Bronchi
	C.	Bronchioles	D.	All of these
(xvii)	The /	Anti-serum is a serum containing)	
	A.	Atnibiotics	В.	Antibodies
	C.	Antigens	D.	Anti-Rh factor

Marks Obtained:



BIOLOGY HSSC-I



Time allowed: 2:35 Hours

Total Marks Sections B

Student Bounty.com Answer any fourteen parts from Section 'B' and any two questions from Section 'C' separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required write your answers neatly and legibly.

SECTION - B (Marks 42)

Q. 2	Attem	at any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. ($14 \times 3 = 42$	2)		
	(i)	Define the following:			
		a. Molecular Biology b. Micro Biology c. Organelles 03	3		
	(ii)	What do you know about the Primary structure of Protein?	3		
	(iii)	a. What is Phyletic lineage?	2		
		b. What is Chemotherapy? 0	1		
	(iv)	Write down the properties of Proteins.	3		
	(v)	a. What are the components of a nucleotide?	2		
		b. Write two differences between DNA and RNA.	1		
	(vi) a. List the factors affecting the rate of enzyme action.				
		b. Complete the equation $E+S\rightarrow ES\rightarrow$	1		
	(vii)	What are the salient features of the cell theory?	3		
	(viii)	a. Who discovered the Golgi apparatus?	1		
		b. What is the function of Mitochondria?	1		
		c. Where does the Nucleolus lie?	1		
	(ix)	Define Species and a Bacteriophage. (2+1=03	3)		
	(x)	Write down the postulates of the germ theory of disease.	3		
	(xi)	Give ONE example each of the following:			
		a. Animal like protists b. Plant like protists c. Fungus like protists 0:	3		
	(xii)	Differentiate between Lichens and Mycorrhizae .	3		
	(xiii) a. What is Double Fertilization?				
	b. Indicate whether the Monocotyledonae and Dicotyledonae are the sub-classes				
Angiospermae or Gymnospermae?					
	(xiv)	What is the economic importance of family Solanaceae?	3		
	(xv)	a. Give one example each of Radial Symmetry and Bilateral Symmetry.	2		
		b. Write one example each of Acoelomates and Coelomates .	1		
	(xvi)	Define the following:			
		a. Aerobic respiration b. Anaerobic respiration 0	2		
		c. Oxidative phosphorylation 0	1		
	(xvii)	Write the common names of the following:			
		a. Sarracenia pupurea b. Dionaea muscipula c. Drosera intermedia 0	3		
	(xviii)	Write TWO characteristics each of the following:			
		a. Annelida b. Coelenterata c. Echinodermata 0	3		
	(xix)	Draw a labelled diagram of Single Circuit Heart (Fish).	3		
		SECTION – C (Marks 26)			
Note:	A	ttempt any TWO questions. All questions carry equal marks. (2 x 13 = 2	-		
Q. 3	a.	Describe in detail the structure and functions of DNA.)9		
	b.	What are the characteristics of enzymes?)4		
Q. 4	a.	Define and explain Glycolysis.)9		
	b.	How does digestion take place in Amoeba?)4		
Q. 5	a.	Explain the life cycle of a Moss.)6)5		
	b.	what is Conesion Tension Theory?)5)2		
	c.	What do you mean by blue babies?)2		

Answer Sheet No.

BIOLOGY HSSC-I

SECTION - A (Marks 17)

Time allowed: 25 Minutes

Q.

NOTE:	Section-A is compulsory and comprises pages 1-2. All parts of this section are to be answered
	on the question paper itself. It should be completed in the first 25 minutes and handed over to the
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Circle	the co	rrect option i.e. A / B / C / D. Each pa	ert carries	one mark.
(i)	How r	many bio-elements constitute 99% of	our body n	nass?
	Α.	3	B.	6
	C.	16	D.	93
(ii)	A larg	e regional community determined prim	arily by cli	imate is called
	A.	Population	B.	Ecosystem
	C.	Biome	D.	Biosphere
(iii)	A cell	or organism and all its asexually produ	uced offsp	ring constitute a
	Α.	Clone	B.	Variety
	C.	Population	D.	Species
(iv)	Misus	e of which antibiotic can affect Auditor	y Nerve, th	nus causing deafness?
	A.	Penicillin	B.	Streptomycin
	C.	Tetracycline	D.	Lovastatin
(v)	Follov	ving is the diagram of a Villus in humai	n intestine	. Circle the labelled part (A/B/C/D) in which produ
	of fats	s digestion enter.		
		C		
(vi)	What	is NOT correct about RuBP?		
	A.	5-Carbon compound	B.	CO_2 acceptor
	C.	Most abundant protein in nature	D.	A metabolite of Calvin Cycle
(vii)			ı (Zea ma)	vs) belong. What is the rank of the taxon Poales?
. ,	Α.	Division	В.	Class
	C.	Order	D.	Family
(viii)			l source of	chemical energy for cellular activities?
· ··/	Α.	C – C bond	В.	C – H bond

D.

C - O bond

C - N bond

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				ade
		DO NOT WRITE	ANYTHING	HERE (Plasmodium) belong?
				GIITE!
			•••••	1.0
(ix)	To w	hich group of Protozoa does the malar	ial parasite	•
	A.	Apicomplexans	В.	Zooflagellates
	C.	Actinopods	D.	Ciliates
(x)		* *	yotic Hyph	ae and produce sexual spores by Meiosis
	inside	e sac-like structures?		
	Α.	Zygomycota	В.	Ascomycota
	C.	Basidiomycota	D.	Deuteromycota
(xi)	What	t is the special adaptation in Sundew p		
	A.	Bilobed Lamina of leaf	В.	Stiff bristles on leaf margin
	C.	Glandular tentacles on leaf	D.	Leaf modified into pitcher
(xii)	Optin	num pH for the lipid digesting enzyme		
	A.	4.5	В.	6.8
	C.	7.6	D.	9.0
xiii)	Engu	lfing of a liquid material by a cell in the	form of a	Food Vacuole is called
	A.	Endocytosis	B.	Phagocytosis
	C.	Pinocytosis	D.	Autophagy
xiv)	A sev	vere form of food poisoning called Botu	ılism is cau	used by
	A.	Clostridium	B.	Campylobacter
	C.	Salmonella	D.	Vibryo
(xv)	Whei	n a cell is placed in hypertonic environ	ment, it los	es water. This loss of water from the cell is
	called	d		
	A.	Diffusion	В.	Osmosis
	C.	Active Transport	D.	Facilitated Diffusion
xvi)	Whic	h of the following diseases is also calle	ed Cooley's	s Anaemia?
	A.	Blood Cancer	В.	Thalassaemia
	C.	Oedema	D.	Sickle cell anaemia
(xvii)	In wh	ich form most of the carbon dioxide is	transporte	d from tissues towards lungs?
	A.	As carboxyhaemoglobin attached to	o Haemogl	obin in RBC
	B.	By Plasma proteins in Blood		
	C.	As Bicarbonate ion in plasma		
	D.	In dissolved form through blood .		
For Ex	camine	er's use only:		
			Tota	I Marks: 17
			Mark	s Ohtained:

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NOTE:

BIOLOGY HSSC-I

Student Bounty.com

Time allowed: 2:35 Hours

Total Marks Sections B and

Sections B and C comprises page 1-2. Answer any fourteen parts from Section 'B' and any questions from Section 'C' 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 42)

Q. 2	Atten	npt any	FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. (14×3	= 42)			
	(i)	A Triose sugar exists in two chemical forms:					
		a.	Name these two forms of the sugar.	01			
		b.	Draw the structural formulae of the two forms.	02			
	(ii)	Angi	osperms are the most advanced group of plant kingdom:				
		a.	How many species of Angiosperms have been recorded so far?	01			
		b.	Name the structure in which the Ovules of Angiosperms are protected.	01			
		C.	Compare Monocotyledonous and Dictyledonous plants for any two features.	01			
	(iii)	Write	e a short note on the disease Thrombosis.	03			
	(iv)	How	does Blue Babies condition occur in human beings?	03			
	(v)	Mam	nmalia is the most advanced class of vertebrates:				
		a.	Name the three bones present in the middle ear of mammals.	01			
		b.	Name the three sub-classes of mammals.	01			
		C.	What is the characteristic of R.B.C in mammals?	01			
	(vi)	Evol	Evolution of leaf in plants involved Overtopping and Plannation followed by Webbing:				
		a.	Explain Overtopping.	02			
		b.	Which group of Tracheophytes lack leaves?	01			
	(vii)	Nucleotides are the building blocks of Nucleic Acids:					
		a.	What is the main difference between Purines and Pyrimidines?	01			
		b.	Name the four Nucleotides of RNA.	01			
		C.	If the percentage of Adenine in the DNA of human cell is 30%.				
			What will be the approximate percentages of the rest of three nitrogenous bases?	01			
	(viii)	Defir	ne Imbibition, Root Pressure and Cohesion.	03			
	(ix)	ix) Like other fields of science, Biology has a set methodology called Biological Meth					
		problems:					
		a.	Define Hypothesis.	01			
		b.	Differentiate between Deductive reasoning and Inductive reasoning by giving relevant				
			examples.	02			
	(x)	Inhib	oitors are substances which react with enzymes but are not transformed into products:				
		a.	What is the difference between Competitive and Non-competitive inhibitors?	02			
		b.	Give a relevant example of competitive inhibitor.	01			
	(xi)	Micro	oscope is a useful tool for observing the fine details of the structure of organisms:				
		a.	Differentiate between Magnification and Resolution of microscope.	02			
		b.	What are the extreme Resolutions and Magnifications of Light Microscope and				
			Electron Microscope?	01			
	(xii)	Write	down the three components of Cytoskeleton mentioning their physiological role.	03			
	(xiii)	Draw	a labelled diagram of Bacteriophage.	03			

Reproduce and complete the following table for the comparison of Gram (xiv) bacteria, on your answer book:

Reproduce and complete the	e following table for the com	parison of Gram	ram Negative
acteria, on your answer boo	ok:	CAR	03
CHARACTERISTICS	GRAM POSITIVE	GRAM NEGATIVE	20
Number of major layers			34
Chemical make up			.0
Overall thickness			
Outer membrane			
Periplasmic space			
Permeability			

(xv) \	What is the nature,	significance and	I types of Mycorrhizae?
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03

Plant like Protests are also called Algae: (xvi)

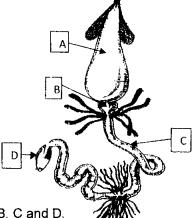
List the salient features of Green Algae.

02

Give one example each of Colonial, Filamentous and Sheet-like body forms b. of green algae.

01

Following is the diagram of Digestive system of cockroach: (xvii)



a.	Identify the parts labelled as A, B, C and D.	02
b.	What is the function of the part labelled B?	01
On	ne phylum of invertebrate animals is Annelida:	

Explain the body segmentation of Annelids.

01

b. What are the excretory organs of Annelids? 01

Name the three classes of Annelida with examples.

01

(xix) The first phase of photosynthesis is light reactions:

> Name the reaction centre molecules of PS-I and PS-II. a.

01

b. Under what conditions is the ATP generation shifted from non-cyclic to cyclic during light reaction?

01

C. What is the site of light reactions inside Chloroplast?

01

SECTION - C (Marks 26)

Note: $(2 \times 13 = 26)$ Attempt any TWO questions. All questions carry equal marks. Q. 3 Explain any two double membrane bounded cytoplasmic organelles of a Eukaryotic cell with the a.

help of labelled diagrams.

(xviii)

b.

b.

What happens to food inside Stomach? Q. 4

Describe different Bacterial shapes.

80 05

80

05

Explain the mechanisms of different types of Transpiration in plants. Q. 5 a.

How are ATPs produced by Chemiosmosis?

80

Write the distinguishing features of family Fabaceae and mention any four b.

Scientific names and their Economic Importance of the members of Fabaceae.

05