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Free liv A.				C.	Azotobacter	D.	Rhizobium	
The dif A.	ferent stages of Hydrophytes	success B.	ion in water are Xerach	call ed : C.	Hydrach	D.	Hydrosere	
	The re A. The ne A. Which A. C. Free lin A. The dif	The receptors for prote A. Nucleus The neurotransmitter s A. Acetylcholine Which of the following A. Forelimb of hole C. Forelimb of bail Free living nitrogen fixing A. Pseudomonas The different stages of	The receptors for protein and p. A. Nucleus B. The neurotransmitter synthesiz A. Acetylcholine B. Which of the following organs of A. Forelimb of horse and of C. Forelimb of bat and a because of the protein of the synthesiz A. Pseudomonas B. The different stages of success A. Hydrophytes B.	The receptors for protein and peptide hormone A. Nucleus B. Cell membran The neurotransmitter synthesized by mammary A. Acetylcholine B. Endonephrins Which of the following organs evolved due to c A. Forelimb of horse and man C. Forelimb of bat and a bird Free living nitrogen fixing bacterium is: A. Pseudomonas B. Nitrosomonas The different stages of succession in water are A. Hydrophytes B. Xerach	The receptors for protein and peptide hormones are loc A. Nucleus B. Cell membrane C. The neurotransmitter synthesized by mammary glands it A. Acetylcholine B. Endonephrins C. Which of the following organs evolved due to converger A. Forelimb of horse and man B. C. Forelimb of bat and a bird D. Free living nitrogen fixing bacterium is: A. Pseudomonas B. Nitrosomonas C. The different stages of succession in water are called: A. Hydrophytes B. Xerach C.	The receptors for protein and peptide hormones are located in the: A. Nucleus B. Cell membrane C. Cell The neurotransmitter synthesized by mammary glands is: A. Acetylcholine B. Endonephrins C. Serotonin Which of the following organs evolved due to convergent evolution? A. Forelimb of horse and man B. Wing of bird at C. Forelimb of bat and a bird D. Vermiform appears to be presented by the convergence of the	The receptors for protein and peptide hormones are located in the: A. Nucleus B. Cell membrane C. Cell D. The neurotransmitter synthesized by mammary glands is: A. Acetylcholine B. Endonephrins C. Serotonin D. Which of the following organs evolved due to convergent evolution? A. Forelimb of horse and man B. Wing of bird and butte C. Forelimb of bat and a bird D. Vermiform appendix at Free living nitrogen fixing bacterium is: A. Pseudomonas B. Nitrosomonas C. Azotobacter D. The different stages of succession in water are called: A. Hydrophytes B. Xerach C. Hydrach D.	

Marks Obtained:



BIOLOGY HSSC-II

20

National Book Foundation

Time allowed: 2:35 Hours Total Marks Sections B and C: 68

NOTE: Answer any fourteen parts from Section 'B' and any two 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	Answe	er any FOURTEEN parts. The answer to each part should not exceed 3 to 4 lines. $(14 \times 3 = 42)$					
	(i)	What are the causes and symptoms of Tetany and Cramp? (03)					
	(ii)	How urine is concentrated in humans through Counter Current Mechanism? (03)					
	(iii)	Name and explain briefly types of cells associated with Bones. (03)					
	(iv)	Which Endocrine gland releases Somato Trophic Hormone? What happens when STH secretion is					
		abnormal? (01+02)					
	(v)	Define the following terms: (01x03)					
		a. Altruism b. Crepuscular animal c. Circadian rhythm					
	(vi)	Write any three major causes of Female Infertility. (03)					
	(vii)	a. What is the difference between Holoblastic and Meroblastic cleavage? (01)					
		b. Which cells are called Fourth Germ Layer? (01)					
		c. Define Embryonic Induction (01)					
	(viii) Differentiate between Nitrification and Denitrification.(ix) Write down the structure and function of Placenta.						
	(x)	What problems and complications can occur in an Rh-Negative foetus when mother is					
		Rh-positive? (03)					
	(xi)	What are different types of Chromosomes on the basis of position of Centromere? (03)					
	(xii)	What do you know about Turner's Syndrome? (03)					
	(xiii)	Define the following terms: (01x03)					
		a. Heterosis b. Ecological Pyramid c. Acclimatization					
	(xiv)	Who proposed Endosymbiont Theory? How this theory explains evolution of eukaryotes? (01+02)					
	(xv) What is Sympatric Speciation?						
	(xvi)	What are the causes and effects of Acid Rain? (03)					
	(xvii)	Define PCR. Which components are required for PCR? (01+02)					
	(xviii)	a. Write down any two steps which are used for Sequencing of DNA? (02)					
		b. Name the methods used for Sequencing of DNA. (01)					
	(xix)	Write down the three stages of Sewage Treatment. (03)					

SECTION - C (Marks 26)

Note:		Attempt any TWO questions. All questions carry equal marks.	(2 x 13 = 26)
Q. 3	a.	Give a detailed account of structures present in Lower Respiratory Tract in Humans.	Draw labelled
		diagram as well.	(09)
	b.	Explain Reflexes and Instincts in animals.	(02+02)
Q. 4	a.	State the Law of Independent Assortment. Prove the Law by using a dihybrid cross.	(01+07)
	b.	What is Lac Operon? Explain its structure.	(02+03)
Q. 5	a.	Describe Human Fore Brain in detail. Also draw labelled diagram.	(09)
	b.	Elaborate Thermoregulatory Strategies in Humans to regulate body temperature.	(04)

SEMEDIATE 440			
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Answer Sheet No	2	
	2-	
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	Choo	se the	correct answer	A / B / C	/ D by filling th	e releva	ant bubbie for	each q	uestion on th	ne OM
			et according to t		-					
	1)		pacteria residing in		of nodules of legi		•			
		A.	Rhizobium Sp			В.	Bacillus ymos			
	2)	C.	Clostridium Sp	•	## #	D.	Bacillus myc c	oldes		
	2)		onmental buffer is				.	_		
	2)	А.	Air	B.	Trees	C.	Soil	D	Water	
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	·	Α.	T e tany	B.	Cramp	C.	Tetanus	D.	Muscle fat	aue
	6)	The p	recursor molecul	e in Ur e a	•				77.500.0	3
	•	Α.	Ornithine	B.	Arginosuccinate	e C.	Arginin	D.	Citrulline	
	7)	It has	been observed ti	nat hypo	•		_			
	·	A.	Cytokinin	В.	Absacisic Acid		Auxins	D.	Gibberellin	s
	8)	The p	art of brain where hment, fear and r	th e clu	sters of neurons					-
		A.	Thalamus	B.	Hipp o campus	C.	Amygdala	D.	Hypothalar	nus
	9)		li g ht e nhan	ces cell	division but retai	rd cells e	enlargement.			
		A.	Yellow	B.	Violet	C.	Red	D.	Blue	
	10)	The p	art icular array of	chromos	somes that an inc	dividual _I	oossesses is ca	ill e d:		
		A.	Genotype	B.	Karyotyp e	C.	Gene pool	D.	Genome	
	11)		urrent goal of the		of Gerontology i	s to:				
		A.	increas e he alth	•		B.	Increase mort	ality rate)	
	_	C.	Increase birth			D.	Increase life s	•		
	12)		henomenon of cr			n	stage of n	neiosis -	- I.	
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	4.5\	Α.	Sodium	В.	Calcium	C	Chloride	D.	Potassium	
	15)		420 million years					cumula	tion of	i
		A.	CO_2	B.	Nitrogen	C.	O_2	D.	Ozone	
	16)	Which	one of th e f ollow	ing is m	isma tche d?					
		A.	PCR - Primer			B.	Prob e – Hybri	dization		
		C.		-	nol ecu lar v ect o r	D.	RFLPs - DNA		•	
	17)		dequate nutrients	from the		nts:			_	nchora
		A.	Limnetic	B.	Profundal	C.	Benthic	D.	Littoral	
			's use only:							



BIOLOGY HSSC-II

22

Punjab Text Book Board

Time allowed: 2:35 Hours Total Marks Sections B and C: 68

NOTE: Answer any fourteen parts from Section 'B' and any two 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.

<u>SECTI</u>	<u>ION - B</u>	<u> Marks 42)</u>

Q. 2	Answe	. (14 x 3 = 42)									
	(i)	a.	What is algal	bloom?				(02)			
		b.	Define defore	estation a	and Afforestation	on.		(01)			
	(ii)	i) How is the predator-prey relationship important for the stability of the ecosystem?									
	(iii)	Differ	entiate betweer	homolo	gous and anak	ogous orga	ans with examples.	(03)			
	(iv)	Name	(03)								
	(v)	Comp	(03)								
	(vi)	What	(03)								
	(vii)	rii) a. Define embryonic induction.									
	b. What is primary organizer?										
	(viii)	What	is meristem? D	ifferentia	te between api	cal and la	iteral meristem.	(01+02)			
	(ix)	Define	e se e d dormand	cy. How i	s it important to	o plants?		(01+02)			
	(x)	What	is sex-influence	ed trait?	Give an examp	le.		(1.5+1.5)			
	(xi)	Write	(03)								
	(xii)	Defin	e:					(03)			
		a.	Receptor	b.	Effector	C.	Stimuli				
	(xiii) What are the commercial application of Synthetic auxins?							(03)			
	(xiv)	Name	the locomotory	organs	of the following	j :		(03)			
		a.	Snail	b.	Starfish	C.	Earthworm				
	(xv)	How	do plants therm	oregulate	e in extremely I	nigh tempe	erature?	(03)			
	 (xvi) What are the sources of energy for muscle contraction? (xvii) Define test cross. Give its significance. (xviii) Briefly explain endosymbiont theory. (xix) How is the gene of interest obtained for genetic engineering? 							(03)			
								(01+02)			
								(03)			
								(03)			
				<u> </u>	SECTION - C	(Marks 26	<u>5)</u>				
Note:	A	ttempt	any TWO que	stions. A	Ali questions o	arry equa	al marks.	(2 x 13 = 26)			
Q. 3	a.	Desci	ribe the structur	e and fu	nction of nephr	on.		(80)			
	b.	write	down the endo	crin e ro le	of Pancreas.			(05)			
Q. 4	a.	Defin	e cell cycle. Exp	olain vari	ous stages of l	Mitotic cell	l division.	(01+06)			
	b.	Expla	in the process	of DNA re	eplication.			(06)			
Q. 5	a.	Desc	ribe "Menstrual	cycle" in	human female			(07)			
	b. write a detail note on the grassland ecosystem.										