

#### Instructions

Answer all the questions.

Select the correct or most appropriate answer.

- (01). Which one of the following is correct regarding chareteristics of living organism?
  - (i). Energy carrier molecules form during metabolism.
  - (ii). Irritability is the ability to respond to stimuli from both internal and external environments.
  - (iii). Irreversible changes in dry mass occurs during growth.
  - (iv). Sunken stomata in xerophytes is an example for peculiarity of physiology.
  - (v). Ability of organsim to change physiologically, morphologically structurally over time is evolution.
- (02). Water is a vital inorganic molecule, It is important due to the which one of the following reason.
  - (i). Ability to moderate temperature
  - (ii). Expansion upon freezing
  - (iii). Provides a biological medium for all organisms
  - (iv). Being versatile solvent for most of the solules
  - (v). Posses cohesive behaviour.
- (03). Which one of the following is correct regarding carbohydrates?
  - (i). All hexsoes contain an aldehyde group
  - (ii). All sugars are reducing sugars
  - (iii). Glyceraldehyde has a sweet taste
  - (iv). Galacturonic acid is the monomer of chitin
  - (v). Inulin stores glucose as energy stores in Dahlia tubers.
- (04). Select the correct statment regarding lipids
  - (i). All lipids contain a glycerol molecule
  - (ii). H:O ration in lipids is equal to 2:1 ration
  - (iii). Three ester bonds found in fat

	(iv). (v).	Staturated fa Consumption				rated fa	ats cont	tribute to at	theroscie	rosis	
(05).	Given below are some compounds found in living matter										
	(a).	Glycogen	(b).	Hemic	cellulo	se	(c).	Cellulose	(d).	Amy	lose
	Which	n of the above	compo	ound / s	is / aı	e branc	ched, ai	nd made ou	ıt of Gluc	cose?	
	(i). (iv).	a,c b,c only			(ii). (v).	b only a only			(iii).	a,d o	nly
(06).	Which one of the following bond found in both secondary and quaternary structure of protein which make their specific shapes?										
	(i). (iii). (v).	Peptide bond Vander Waa Covalent bon	ls inter	actions			(ii). (iv).	Hydrogen Ionic bon			
(07). Select incorrect combinationg regarding functions of proteins?											
	(i). (iii). (v).	Keratin - Myosin - Amylaze -	Contr	action			(ii). (iv).	Haemoglo Actin	obin - -	Transp Suppor	
(8)		of DNA cons umber of thyr			_			ion in the I	ONa is 2:	3	
	(i).	1000	(ii).	3000		(iii).	4000	(iv).	1500	(v).	2000
(9)	Select incorrect statment regarding nuclic acids of eukaryotic cells.										
	<ul> <li>(i). All nucleic acids synthesized in the nucleus.</li> <li>(ii). All nucleic acids help to ensure the survival of an organism.</li> <li>(iii). All types of nucleic acids posses hydrogen bonds.</li> <li>(iv). All nucleic acids posses monosaccharides.</li> <li>(v). All nucleic acids posses phospho disaster bond.</li> </ul>										
(10).	Select the incorrect combination regarding functions of nucleotides										
	(i). (iii). (v).	Co- enzyme Co- enzyme Energy Curr	- NAD	+			(ii). (iv).	Electron (Reducing			
(11).	Select the incorrect statement regarding microscope										
	(i). (ii). (iii).	ii). Resolution power is directly propotional to the wave length.									

Specimens, stained with heavy metals prior to observation under electron microscope

(iv).

	(v).	Light micros	cope use to observe	non-living spe	ecimens.				
•	A is a	mixture of co	ompounds. It gives for	ollowing obse	rvaions v	vith different reag	gents.		
	Febilings Solution		Millon Reagent	Ethanol + cool water		Biuret Reagent			
	Brick Red Precipitate		White precipitate	No Colour Change		Purple Colour			
(12).	Which one of the following is correct regarding A?								
	(i). (ii). (iii). (iv). (v).	It contains pr It contains pr It contains Pr	lucose, fat, protein educing sugar and no rotein, lipid, reducing rotein, reducing sugarotein, glucose	g sugar	gar				
(13).	Select	incorrect stat	ement regarding dou	ıble membrane	e bound o	organelles in euka	riyotic cells		
	(i). (ii). (iii). (iv). (v).	<ul><li>(ii). Contain 70 S ribosomes</li><li>(iii). Membranes are perforated</li><li>(iv). Energy consuming process takes place</li></ul>							
(14).	Which	n one of the fo	ollwing is not a funct	ion of smooth	ER?				
	(i). (iii). (v).	Synthesizes and Detoxification Stores Ca <sup>2+</sup> in	on	(ii). (iv).	Metabo Synthei	olism of Carbohyd ze oils	rates		
(15).	Which one of the follwoing is incorrect regarding prokoryotic cell?								
	(i). (iii). (v).	Cell wall cor	nes with proteins nsists of proteins notosynthetic pigmer	(ii). (iv).		of subcellular coa a has (9 + 0) struc	•		

# Part II

# Answer all questions on this paper itself. Each question carries 10 marks

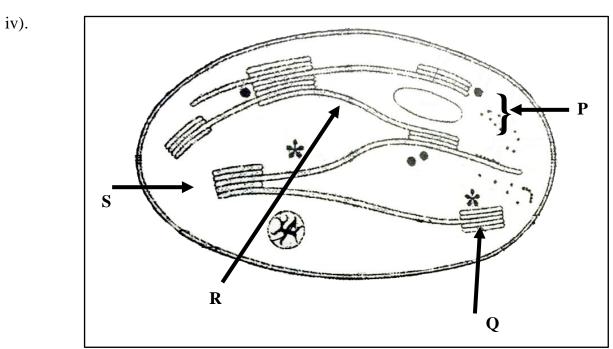
er —	e are 25 esse	ntial elements for humans. Write 4 most	common elements or
rite	e 4 major pro	perties of water.	
xpl	ain one of it	oriefly.	
lon	osaccharides	is a type of carbohydrate write it's gene	ral formulae.
		is a type of carbohydrate write it's gene	ral formulae.
Vrite			
Write	e one examp	e for each of the following.	
	e one examp Tetrose	e for each of the following.	
Write A). B). C).	Tetrose Triose Pentoses	e for each of the following.	
Vrite (A). (B). (C).	Tetrose Triose Pentoses	e for each of the following.	
Write A). B). C). Write	Tetrose Triose Pentoses	e for each of the following.	

Write	e the bond type found between monomers of following compounds.
A).	Sucrose
B).	Amylose -
C).	Maltose
A).	What is a lipid?
B).	Explain how a fatty acid and molecule and phospholipid molecule differ from other. (Functionally)
C).	Explain how is this special feature of phospholipid molecule is important in makin membrane.

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Write	e the intramolecular bond types found in following proteins
A).	Keratin
D.	
B).	Collagen
C).	Albumin
- / ·	
Write	e components of repeating unit of DNA
——Give	suitable examples for the following
Give	
	Most common type of RNA
A).	Most common type of RNA

Write	e one exampke for each following. (using nucleotides)
A).	Act as coenzyme
B).	Act as electron carrier -
C).	Oxidizing agent during cellular respiration -
Defin	ne the term magnification of microscopes.
Write	e the resolution power of followings
A).	Human eye
B).	Electron Microscope -
C).	Light Microscope
A).	Robert Hooke
B).	Anton Van Leeu wenhook
Write	e 4 basic features shared by all cells.
What	is a cell orgonelle?
	is a cen orgonene/

What	is the endoplasmic reticulam
State	02 other single membrance bound organelles
	02 other single membrance bound organelles  2
1	



a). Label (P-S)

P - R 
Q - S -

W	Lite 02 different comments for the control of the c
	Trite 03 different components found in matrix of the above organelle.
_	
W 1.	That are the 2 stages of cellular respiration takes place in mitochondria?
2.	
W	/hat is cytoskeleton?
W 	Trite 03 componenets of cytoskeleton and building blocks of them.
W _	Vrite 02 function of cytoskeleton.
W	That is the (9 +2) structure of cilia?
— Н	ow centriole structure differ from flagella structure?
	Vrite 02 functions of central vacuole.

viii).	A).	What are the componenets of ECM?
	B).	Write 03 functions of ECM.

# **Essay Questions**

### **Answer all questions**

- 1). A). Explain Fluid mosasic model of plasma membrance
  - B). Explain functions of plasma membrane
- 2). Write short notes on followings
  - A). Prokarryotic cell structure
  - B). Eukaryotic cell wall
  - C). Cell juntions