

FIRST YEAR HIGHER SECONDARY PRE MODEL EXAMINATION

Part – III

BIOLOGY

PART –A BOTANY

KEY

FYCBTA22/5

Maximum score: 30

Q.No.	PART-I	Split score	Total score										
1	Nucleus	1	1										
2	Elaioplast	1	1										
3	Tonoplast	1	1										
4	Middle lamella	1	1										
5	Robert Brown	1	1										
6	(b) Lysosome	1	1										
7	Basal bodies	1	1										
8	Several ribosomes attached to a single mRNA and form a chain	1	1										
9	Histones	1	1										
10	Carotene and Xanthophylls	½ + ½	1										
PART-II													
11	RER-Rough endoplasmic reticulum bearing ribosomes on their surface. - Involved in protein synthesis and secretion . SER- Smooth endoplasmic reticulum devoid of ribosomes on their surface . Involved in lipid synthesis.	½x4	2										
12	(a) Outer most layer is glycocalyx Middle layer is the cell wall Innermost layer is the plasma membrane. (b) Protection/determine the shape/ structural support [any 1]	½x4	2										
13	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th align="center">Column A</th> <th align="center">Column B</th> </tr> </thead> <tbody> <tr> <td>1. r RNA</td> <td><i>c. Nucleolus</i></td> </tr> <tr> <td>2. Glycoproteins</td> <td><i>e. Golgi bodies</i></td> </tr> <tr> <td>3. Carbohydrate</td> <td><i>d. Chloroplast</i></td> </tr> <tr> <td>4. Steroidal hormones</td> <td><i>a. SER</i></td> </tr> </tbody> </table>	Column A	Column B	1. r RNA	<i>c. Nucleolus</i>	2. Glycoproteins	<i>e. Golgi bodies</i>	3. Carbohydrate	<i>d. Chloroplast</i>	4. Steroidal hormones	<i>a. SER</i>	½x4	2
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14	(a) Gram positive and Gram negative bacteria (b) Bacteria that take up the gram stain are Gram positive Bacteria that does not take up the gram stain are Gram negative	½ + ½ ½ ½	2										
15	The endomembrane system include Endoplasmic reticulum Golgi apparatus Lysosomes Vacuoles	½x4	2										
16	(a) Mesosomes. (b)They help in cell wall formation. DNA replication and distribution to daughter cells. Help in respiration. Secretion processes. To increase the surface area of plasma membrane and enzymatic content (Any two functions)	1x2	2										
17	(a) Cristae. - Cristae are infolding of mitochondria.	1											

	- All other terms related to parts of chloroplast. (b) Fimbriae - The fimbriae are small bristle like fibres sprouting out of the cell of bacteria. All other terms related to parts of chromosome.	1	2
18.	a) Chloroplast b) A- grana B - stroma	1 $\frac{1}{2} + \frac{1}{2}$	2
19.	Schleiden and Schwann together formulated the cell theory. Rudolf Virchow modified it and the two main concepts are (c) All living organisms are composed of cells and products of cells (d) All cells arise from pre-existing cells.	1 $\frac{1}{2}$ $\frac{1}{2}$	2
20.	a) The central core of cilia or flagella is called axoneme b) 9+2 array.	1 1	2
PART III			
21.	(a) A. Outer membrane. B. Inner membrane . C. Matrix. D. Cristae. (b) They produce cellular energy in the form of ATP, hence they are called 'power houses' of the cell	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	3
22.	a) George Palade. b) Prokaryotic ribosomes are of 70s type with 50 s and 30s as sub units d) Eukaryotic ribosomes are of 80s type with 60s and 40s as sub units	1 1 1	3
23.	a) Golgi apparatus b) Function - packaging materials to be delivered either to the intra-cellular targets or secreted outside the cell. c) The materials packaged in the form of vesicles from the ER fuse with the the golgi apparatus and are modified in the cisternae of the golgi apparatus before they are released . This explains, why the golgi apparatus remains in close association with the endoplasmic reticulum.	1 1 1	3
24.	a) 1. Metacentric chromosomes –centromere at centre of chromosome. 2. Sub metacentric chromosome –centromere slightly away from the middle of chromosome . 3. Acrocentric chromosome –centromere is situated close to its end. 4. Telocentric chromosome –chromosome has a terminal centromere. b) Due to the presence of a secondary construction a small fragment appears in some chromosomes called satellite. Such chromosomes are called as Satellite chromosome.	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1	3
25.	a) Singer and Nicolson. b) Fluid mosaic model. c) Peripheral protein and Integral protein	1 1 1	3