

FIRST YEAR HIGHER SECONDARY PRE MODEL EXAMINATION

Part – III

BIOLOGY

PART –A BOTANY

KEY

FYCBTA22/4

Maximum score: 30

Q.No	PART-I	Split score	Total score										
1	Epidermal hairs on the stem are called trichomes	1	1										
2	Albuminous cells Sieve cells	1/2 1/2	1										
3	Mechanical support	1	1										
4	Conjunctive tissue	1	1										
5	(c)Stele	1	1										
6	Open vascular bundle	1	1										
7	Sieve tube elements	1	1										
8	(a)Parenchyma (b) Collenchyma	1/2 +1/2	1										
9	a-phellem, b-phelloderm	1/2 +1/2	1										
10	Xylem , Phloem	1/2 +1/2	1										
	PART-II												
11	(a) A-Subsidiary cells B -Guard cells (b) Stomata regulate the process of transpiration and gaseous exchange.	1 1	2										
12	A- Radial vascular bundle Xylem and phloem are arranged in alternate manner on different radii B- Conjoint vascular bundle / closed vascular bundle Xylem and phloem are arranged at the same radius. Cambium is absent	1 1	2										
13	Heart wood- deposition of organic substances in the central region/ dark brown in colour/ hard/ durable/ resistant to microorganisms and insects/ consist of dead elements with lignified walls. [Any 2] Sap wood – peripheral region/ lighter in colour/ conduction of water and minerals [Any 2]	1 1	2										
14	Tracheids Vessels Xylem fibres Xylem parenchyma	1/2 1/2 1/2 1/2	2										
15	Springwood / early wood – during spring season cambium is active and produce more xylem having vessels with wide cavities Autumn wood/ late wood – in winter cambium is less active and produce lesser xylem with narrow vessels	1 1	2										
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17	Endarch – in stem, protoxylem lies towards the centre and metaxylem towards the periphery. Exarch – in roots, protoxylem lies towards the periphery and metaxylem towards centre	1 1	2										
18	a) A-Tracheid, B-Vessel b) Vessel	1/2+1/2 1	2										
19	Root hairs	1/2											

	Stomata Bulliform cells Trichomes	$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$	2																		
20	i) Monocot root ii) a) Epidermis with root hairs b) Parenchymatous (homogenous) cortex c) Endodermis with casperian strips d) Pericycle e) More than six radial vascular bundles f) Large pith	1 1	2																		
PART III																					
21	(a) Bark is a non-technical term that refers to all tissues exterior to the vascular cambium. (b) Periderm and secondary phloem.	1 2	3																		
22	(a) Anatomy of dicot leaf (b) Mesophyll contain chloroplast and it carryout photosynthesis Mesophyll tissue consist of 2 types of cells – palisade parenchyma and spongy parenchyma Palisade parenchyma – adaxially placed, consist of elongated cells arranged vertically Spongy parenchyma – oval/ round shaped cells and are loosely arranged (Any 2 points)	1 1 1	3																		
23	The cambium present in between xylem and phloem are called intrafascicular cambium. The medullary cells adjacent to this cambium become meristematic and form interfascicular cambium. These two cambia join together to form vascular cambium/ cambial ring. (b) Secondary xylem and secondary phloem	1 1 $\frac{1}{2} + \frac{1}{2}$	3																		
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25.	(a) Phloem. (b) A-Sieve plate, B-Sieve tube, C-Phloem parenchyma, D-Companion cell	1 $\frac{1}{2} \times 2$	3																		