

**FIRST YEAR HIGHER SECONDARY MODEL EXAMINATION, FEBRUARY 2020**  
**SCORING KEY**  
**BOTANY**

MAXIMUM SCORE 30

Qn No	Value Points	Split Score	Total Score	
<b>I. Any 3 from 1 to 5</b>				
1	c) Methanogens	1	1	
2	b) Interkinesis	1	1	
3	a) ABA	1	1	
4	Nitrogen Fixation	1	1	
5	Paramoecium	1	1	
<b>II. Any 9 from 6 to 16</b>				
6	Provide food for herbaceous mammals, birds and other animals/Provides Peat that have long been used as fuel/Used as Packing material for transshipment of living materials/Alongwith lichen help to decompose rocks/Reduce impact of falling rain and prevent soil erosion (any 2)	1+1	2	
7	A) Region of Maturation	½	2	
	B) Region of Elongation	½		
	C) Region of meristematic activity	½		
	D) Root cap	½		
8	Fungal filaments form a network around the young root or they penetrate the root cells. The hyphae have a very large surface area that absorb mineral ions and water from a large volume of soil. Pinus seeds cannot germinate and establish without the presence of micorrhizae. (any 2)	1+1	2	
9	<b>A</b>	<b>B</b>		
	(a) Crossing over occurs	(i) Pachytene	½	2
	(b) Formation of Chiasmata	(ii) Diplotene	½	
	(c) Pairing of homologous chromosomes	(iii) Zygotene	½	
	(e) Terminalisation of Chiasmata	(v) Diakinesis	½	
10	A) Cell become turgid - in a hypotonic solution water diffuses into the cell causing the cytoplasm to build up turgor pressure against the cell wall	1	2	
	B) Cell is Plasmolysed - in a hypertonic solution water moves out of the cell and the cell membrane shrinks away from its cell wall	1		
11	Lacks Photorespiration/Productivity and yield are more/Tolerance to high temperature (any 2)	1+1	2	
12	<b>Lactic acid fermentation</b>	<b>Alcohol fermentation</b>		
	Lactic acid is formed	Ethanol and CO <sub>2</sub> are formed	1+1	2
	Lactate dehydrogenase is the enzyme involved	Pyruvic acid decarboxylase and alcohol dehydrogenase are the enzymes involved		
	Occurs in bacteria and in some animal cells	Occurs in yeast (any 2)		
13	Initiate flowering and synchronize fruit set in Pineapple/Induce flowering in mango/Hastens fruit ripening in tomatoes and apples/acceleration of abscission of flowers and fruits/thinning of cotton/promotes female flower formation in cucumber (any 2)	1+1	2	
14	Glucose → Glucose 6 phosphate	1	2	
	Fructose 6 phosphate → Fructose 1,6 biphosphate	1		
15	If a chemical process is affected by more than one factor, then its rate will be determined by the factor which is nearest to its minimal value	1	2	
	Light/Temperature/Water/CO <sub>2</sub> Concentration (any 2)	1		
16	Nitrification is the formation of Nitrates from Ammonia by Nitrifying bacteria like Nitrosomonas and Nitrobacter	1	2	
	Denitrification is conversion of Nitrate in the soil to Nitrogen by denitrifying bacteria like Pseudomonas and Thiobacillus	1		

Qn No	Value Points		Split Score	Total Score
17	a	Kranz anatomy	1	3
	b	Large cells/Arranged in several layers around vascular tissue/Large number of chloroplasts are present/Thick cell walls impervious to gases/No intercellular space (any 2)	1+1	
18	a	A) Solanaceae, B) Liliaceae	1	3
	b	A) Bicarpellary/Syncarpous/Superior ovary/Bilocular/Placenta swollen/Axile placentation (any 2)	½+½	
		B) Tricarpellary/Syncarpous/Superior ovary/Trilocular/Axile placentation (any 2)	½+½	
19	<b>A.Dicot Stem</b>		<b>B.Monocot Stem</b>	
	Ground tissue differentiated into cortex, endodermis, pericycle and pith		Undifferentiated Ground tissue	
	Collenchymatous hypodermis		Schlerenchymatous hypodermis	
	Vascular bundles are limited in number arranged in the form of a ring		Large number of scattered vascular bundles	
	Bundle sheath absent, Schlerenchymatous bundle cap present		Schlerenchymatous bundlesheath	
	Vascular bundles conjoined and open		Vascular bundles conjoined and closed	
	Vascular bundles similar in size		Peripheral bundles are smaller	
	Phloem parenchyma absent		Phloem parenchyma absent	
	Water containing cavities absent in vascular bundles		Water containing cavities in vascular bundles	
20	a	Golgi apparatus	1	3
	b	Packaging of materials. Important site of production of Glycoproteins and Glycolipids	1+1	

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