

FIST YEAR BOT ANY ANSWER KEY

Qn. No.	Sub Qn. No.	Value Points	Maarks	Total
1		Mycorrhiza	1	1
2		S - Phase/Synthesis phase	1	1
3		Ethylene / Ethephon.	1	1
4		Bisexual /Monoecious / Hormaphordiets	1	1
5		Nitrosomonas /Nitrococcus /Nitrobater	1	1
6		Yeast / Saccharomyces	1	1
7	a	Green algae	1/2	2
	b	Phaeophyceae	1/2	
	c	Red Algae	1/2	
	d	Mannitol /Laminarin	1/2	
8		Reticulate venation	1	2
		Parallel venation	1	
9	(i)	(d) Terminalisation of chiasmata	1/2	
	(ii)	(c)Synapsis	1/2	
	(iii)	(b) Crossing over	1/2	
	(iv)	(a) Formation of chiasmata	1/2	
10		sites of aerobic respiration / KREB cycle	1	2
		Produce celluar energy in the form of ATP (Formation storage and Transport of energy. -Full mark)	1	
11		Transport of molecules, cell growth, formation of intercellular junctions, secretion , endocytosis, cell division, protection etc (any 2 points)		
12	a	Photochemical phase include light absorption, water splitting, Oxygen release, and formation of ATP and NADPH (any 1 point)	1	2
	b	Grana / Stroma lamella /Leaf/Chloroplast	1	
13	a	Kranz anatomy/ Wreath anatomy	1	2
	b	Maize, Sorghum (Any two C4 plants)	1	
14	(i)	Lag phase		2
	(ii)	Exponential phase/ Log phase		
	(iii)	Stationary phase (Any 2 phase)		
15		Splitting of water	1+1	2
		Production of ATP		
		Production of NAADPH		
		Non cyclic movement of electrons		
		Oxygen is released (any 2 points)		
16	(i)	Apoplast pathway	1	2
	(ii)	Symplast pathway	1	
17		Help in cellwall formation, DNA replication and distribution to daughter cells. They also help in respiration,secretion process, to increase surface area of the plasma membrane and enzymatic content.(any 2 points)	1+1	2
18	a	(i) Carboxylation, (ii) Reduction (iii) Regeneration	1 1/2	2
	b	Starch /Sucrose /Carbohydrate /Glucose	1/2	
19	a	Gelidium /Gracilaria	1	2
	b	Used to grow microbes / Preparation of ice- creams jams and jellies /	1	

20		Endarch - seen in stem / Protoxylem lies towards the centre and metaxylem lies towards the periphery	1	2
		Exarch - seen in root / Proxylem lies towards periphery and metaxylem lies towards the centre	1	
21	a	Radial vascular bundle	1	2
	b	Conjoint open / Collateral open	1	
22		Heart Wood :- Secondary xylem is dark brown due to the deposition of organic compounds, it is hard, durable and resistant to microorganism and insects. Consists of dead elements / Provide mechanical support (Any one point)	1	2
		Sap wood :- peripheral region of the secondary xylem , lighter in colour, conduction of water and minerals occurs, consists of living cells. (Any one point)	1	
23		(i) Ethanol / Ethyl alcohol / C ₂ H ₅ OH	1	2
		(ii) CO ₂ / Carbondioxide	1	
24	a	Antiport	1	2
	b	Symport	1	
25		<u>Aerobic</u>		3
		(i) Complete oxidation	1 1/2	
		(ii) Presence of Oxygen		
		(iii) Release of CO ₂ , water and high amount of energy		
		(iv) Occurs in cytoplasm and Mitochondria		
		(v) Common in higher organism (Any 3 Points)		
		<u>Anaerobic</u>		
		(i) Incomplete oxidation	1 1/2	
		(ii) Absence of oxygen		
		(iii) Release CO ₂ and ethanol or Lactic acid		
		(iv) Occurs in cytoplasm		
		(v) Less amount of energy released		
	(vi) Common in lower organisms (Any 3 Points)			
26	a	Fabaceae / Leguminosae/ Papilionoideae / Pea family	1	3
	b	Bisexual , Zygomorphic, Sepals 5, gamosepalous valvate, imbricate aestivation Petals-5 polypetalous , vexillary aestivation Diadelphous stamens , superior ovary (Any 2 points)	2	
27	a	Metaphase	1	3
	b	(i) Spindle fibres attach to kinetochores of chromosomes	2	
	(ii) Chromosomes are moved to spindle equator and get aligned along metaphase plate through spindle fibres to both poles. (Any Two correct points 2 Marks)			
28		(i) The element must be absolutely necessary for normal growth and reproduction. In the absence of the element plant do not complete their life cycle or set seeds	1	3
		(ii) The requirement of the element must be specific and not replaceable by another element	1	
		(iii) The element must be directly involved in the metabolism of the plant	1	

29	a	The ratio of the volume of CO ₂ evolved to the volume of O ₂ consumed in respiration is called Respiratory quotient . Or $R.Q = \frac{\text{Volume of CO}_2 \text{ evolved}}{\text{Volume of O}_2 \text{ consumed}}$	2	3
	b	One /1	1	
30	a	(iv) apical dominance	1/2	3
	b	(v) initiate rooting in stem cutting	1/2	
	c	(iii) bolting	1/2	
	d	(i) internode elongation of sugarcane	1/2	
	e	(vi) Overcome apical dominance	1/2	
	f	(ii) Promotes cell division	1/2	

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