



**ISLAMIAH MAT HR SEC SCHOOL,
KILAKARAI, RAMANATHAPURAM DT.**

XI COMMON PUBLIC EXAMINATION, MAY -2022 (16-05-2022)

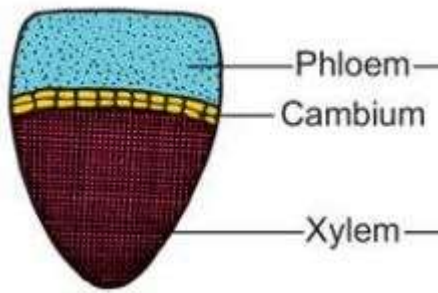
TENTATIVE ANSWER KEY

Question type A

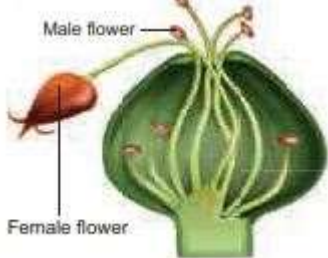
SUB: BIO-BOTANY

MARKS: 35

Q.NO	CONTENT	MARKS	MODE OF QUESTION
	PART -I		
I.	CHOOSE THE CORRECT ANSWER	8 X 1 = 8	BOOK BACK / BOOK INSIDE/ CREATIVE
1	a. While lipids can rarely flip flop, proteins cannot	1	BOOK INSIDE
2	a. Denitrification	1	BOOK BACK
3	c. Methanobacterium	1	BOOK BACK
4	b. Mn prevents the uptake of Fe, Mg but not Ca	1	BOOK BACK
5	c. Amphoteric	1	BOOK INSIDE
6	c. G₀ phase	1	BOOK BACK
7	d. (ii) and (iii) only	1	BOOK BACK
8	a. (i) and (iii) only	1	BOOK BACK

Q.NO	CONTENT	MARKS	MODE OF QUESTION
II.	PART -II ANSWER ANY FOUR OF THE FOLLOWING	4 X 2 = 8	BOOK BACK / BOOK INSIDE/ CREATIVE
9	Virion is an intact infective virus particle which is non-replicating outside a host cell.	2	BOOK INSIDE
10	1. Provides support and bears leaves, flowers and fruits. 2. It transports water and mineral nutrients to the other parts from the root. 3. It transports food prepared by leaves to other parts of the plant body.	2	BOOK INSIDE
11		2	BOOK INSIDE
12	(i) Metacentric (ii) Sub-Metacentric (iii) Acrocentric (iv) Telocentric	2	BOOK INSIDE
13	Water potential can be determined by, (i) Solute concentration or Solute potential (Ψ_s) (ii) Pressure potential (Ψ_p)	2	BOOK BACK
14	Suppression of growth in lateral bud by apical bud Due to auxin produced by apical bud is termed as apical dominance.	2	BOOK INSIDE

Q.NO	CONTENT	MARKS	MODE OF QUESTION
III.	PART -III ANSWER ANY THREE OF THE FOLLOWING	3 X 3 = 9	BOOK BACK / BOOK INSIDE/ CREATIVE
15	<ul style="list-style-type: none"> • Helps to derive nutrition in Monotropa, a saprophytic angiosperm, • Improves the availability of minerals and water to the plants. • Provides drought resistance to the plants • Protects roots of higher plants from the attack of plant pathogens 	3	BOOK INSIDE
16	artificial classification, natural classification and phylogenetic classification.	3	BOOK INSIDE
17	<ol style="list-style-type: none"> 1. This system in the shoot checks excessive loss of water due to the presence of cuticle. 2. Epidermis protects the underlying tissues. 3. Stomata is involved in transpiration and gaseous exchange. 4. Trichomes are also helpful in the dispersal of seeds and fruits, and provide protection against animals. 5. Prickles also provide protection against animals and they also check excessive transpiration 6. In some rose plants they also help in climbing. 7. Glandular hairs repel herbivorous animals 	3	BOOK INSIDE

18	<table border="1"> <thead> <tr> <th data-bbox="277 210 580 304">Sap Wood (Alburnum)</th> <th data-bbox="580 210 884 304">Heart Wood (Duramen)</th> </tr> </thead> <tbody> <tr> <td data-bbox="277 304 580 407">Living part of the wood.</td> <td data-bbox="580 304 884 407">Dead part of the wood.</td> </tr> <tr> <td data-bbox="277 407 580 555">It is situated on the outer side of wood</td> <td data-bbox="580 407 884 555">It is situated in the centre part of wood</td> </tr> <tr> <td data-bbox="277 555 580 658">It is less in coloured</td> <td data-bbox="580 555 884 658">It is dark in coloured</td> </tr> <tr> <td data-bbox="277 658 580 716">Very soft in nature</td> <td data-bbox="580 658 884 716">Hard in nature</td> </tr> <tr> <td data-bbox="277 716 580 819">Tyloses are absent</td> <td data-bbox="580 716 884 819">Tyloses are present</td> </tr> <tr> <td data-bbox="277 819 580 967">It is not durable and not resistant to microorganisms</td> <td data-bbox="580 819 884 967">It is more durable and resists microorganisms</td> </tr> </tbody> </table>	Sap Wood (Alburnum)	Heart Wood (Duramen)	Living part of the wood.	Dead part of the wood.	It is situated on the outer side of wood	It is situated in the centre part of wood	It is less in coloured	It is dark in coloured	Very soft in nature	Hard in nature	Tyloses are absent	Tyloses are present	It is not durable and not resistant to microorganisms	It is more durable and resists microorganisms	3	BOOK INSIDE
Sap Wood (Alburnum)	Heart Wood (Duramen)																
Living part of the wood.	Dead part of the wood.																
It is situated on the outer side of wood	It is situated in the centre part of wood																
It is less in coloured	It is dark in coloured																
Very soft in nature	Hard in nature																
Tyloses are absent	Tyloses are present																
It is not durable and not resistant to microorganisms	It is more durable and resists microorganisms																
19	<p>Cyathium inflorescence consists of small unisexual flowers enclosed by a common involucre which mimics a single flower. Male flowers are organised a scorpioid manner. Female flower is solitary and centrally located on a long pedicel. Male flower is represented only by stamens and female flower is represented only by pistil. Cyathium may be actinomorphic (Example: Euphorbia) or zygomorphic (Example: Pedilanthus.). Nectar is present in involucre</p>  <p>The diagram shows a central female flower (pistil) on a long pedicel, surrounded by several male flowers (stamens) in a scorpioid arrangement. Labels 'Male flower' and 'Female flower' are present.</p>	3	BOOK BACK														

Q.NO	CONTENT	MARKS	MODE OF QUESTION
IV.	<p style="text-align: center;">PART –IV</p> <p style="text-align: center;">ANSWER ALL THE QUESTION</p>	2 X 5 = 10	BOOK BACK / BOOK INSIDE/ CREATIVE

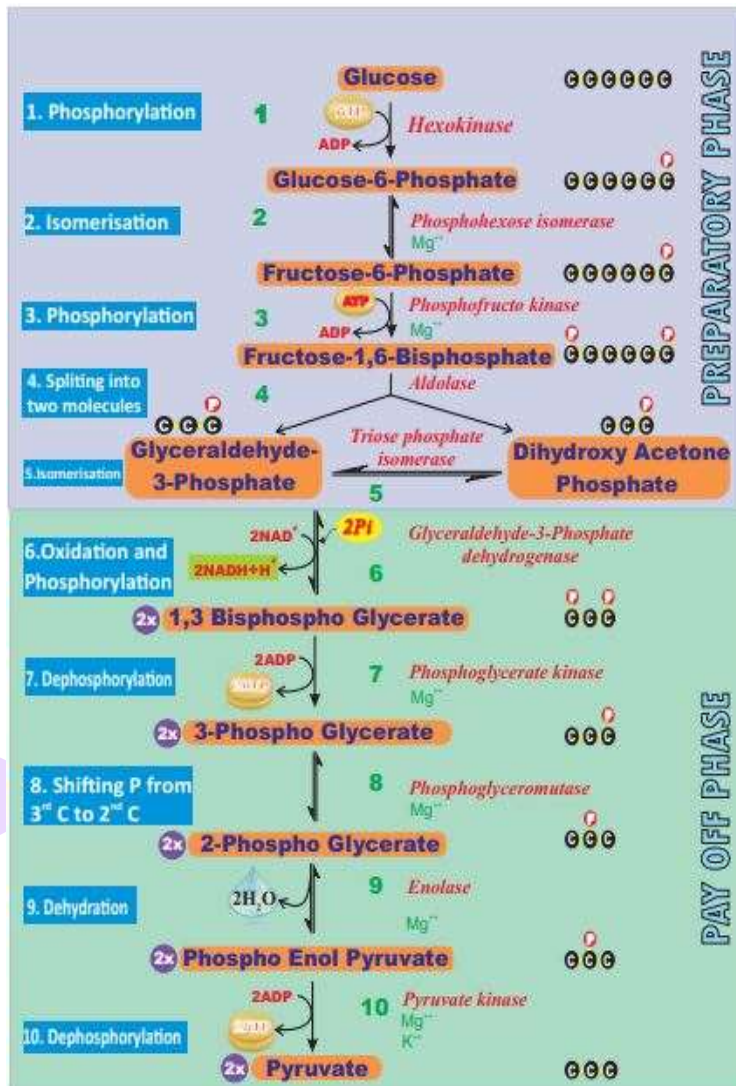
20 (a)	<ul style="list-style-type: none">• Cytokinin promotes cell division in the presence of auxin (IAA).• Induces cell enlargement associated with IAA and gibberellins• Cytokinin can break the dormancy of certain light-sensitive seeds like tobacco and induces seed germination.• Cytokinin promotes the growth of lateral bud in the presence of apical bud.• Application of cytokinin delays the process of aging by nutrient mobilization. It is known as Richmond Lang effect.• Cytokinin (i) increases rate protein synthesis (ii) induces the formation of inter-fascicular cambium (iii) overcomes apical dominance (iv) induces formation of new leaves, chloroplast and lateral shoots.• Plants accumulate solutes very actively with the help of cytokinins.	5	BOOK BACK
--------	---	---	------------------

Padasalai.Net

20 (b)

5

BOOK INSIDE

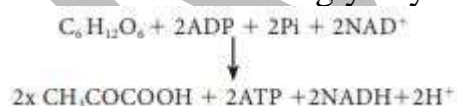


1. Preparatory phase or endergonic phase or hexose phase (steps 1-5). 2. Pay off phase or oxidative phase or exergonic phase or triose phase (steps 6-10). 1. Preparatory phase Glucose enters the glycolysis from sucrose which is the end product of photosynthesis. Glucose is phosphorylated into glucose-6- phosphate by the enzyme hexokinase, and subsequent reactions are carried out by different enzymes (Figure 14.6). At the end of this phase fructose-1, 6 – bisphosphate is cleaved into glyceraldehyde-3- phosphate and dihydroxy acetone phosphate by the enzyme aldolase. These two are isomers. Dihydroxy acetone phosphate is isomerised into glyceraldehyde-3- phosphate by the enzyme triose

phosphate isomerase, now two molecules of glyceraldehyde 3 phosphate enter into pay off phase. During preparatory phase two ATP molecules are consumed in step-1 and step-3

2. Pay off phase Two molecules of glyceraldehyde -3- phosphate oxidatively phosphorylated into two molecules of 1,3 - bisphospho glycerate. During this reaction 2NAD⁺ is reduced to 2NADH + 2H⁺ by glyceraldehyde3- phosphate dehydrogenase at step 6. Further reactions are carried out by different enzymes and at the end two molecules of pyruvate are produced. In this phase, 2ATPs are produced at step 7 and 2 ATPs at step10. Direct transfer of phosphate moiety from substrate molecule to ADP and is converted into ATP is called substrate phosphorylation or direct phosphorylation or trans phosphorylation. During the reaction at step 9, 2phospho glycerate dehydrated into Phospho enol pyruvate a water molecule is removed by the enzyme enolase. As a result, enol group is formed within the molecule. This process is called Enolation.

3. Energy Budget In the pay off phase totally 4ATP and 2NADH + 2H⁺ molecules are produced. Since 2ATP molecules are already consumed in the preparatory phase, the net products glycolysis are 2ATPs and 2NADH + 2H⁺. The overall net reaction of glycolysis



21 (a)		5	BOOK BACK
21 (b)	<p>Yes shape of chloroplast is unique for algae</p> <p>Variation among the shape of the chloroplast is found in members of algae. It is Cup shaped (Chlamydomonas), Discoid (Chara), Girdle shaped, (Ulothrix), reticulate (Oedogonium), spiral (Spirogyra), stellate (Zygnema), plate like (Mougeoutia).</p> <p>all algae whose chloroplasts contain chlorophyll a and c, as well as various colorless forms that are closely related to them. Diatoms, Brown algae, cryptomonads and Oomycetes were placed under this Kingdom.</p>	5	BOOK BACK



M.MATHAN., M.Sc., M.Ed., M.Phil.,
 PGT IN BOTANY,
 ISLAMIAH MAT HR SEC SCHOOL,
 KILAKARAI, RAMANATHAPURAM DT.,
 9865330431

- Daily classes by **Namakkal Well Experienced Staff**
- Two year integrated program for **XI and XII - NEET.**
- We provide online test for both **NEET.**
- Weekly intensive test for **NEET.**
- We teach from basics make you achievers.
- Learn with interest without stress.
- Daily practice test and monthly cumulative test for state board.
- Extra care for slow learners.