

Please check whether you have got the right question paper.

- N.B: i) All questions are compulsory
 ii) Figures to the right indicate full marks
 iii) Draw neat and labeled diagrams whenever necessary

Q.1 A. Choose the correct option from the following:

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- a. Simple tissues are parenchyma, collenchyma and _____
 i) xylem ii) phloem iii) sclerenchyma iv) stele
- b. When protoxylem lies on the outside of metaxylem towards the periphery, the condition is called as _____
 i) Mesarch ii) Exarch iii) Endarch iv) None of the above
- c. Companion cells are components of _____
 i) Cambium ii) Xylem iii) Phloem iv) Parenchyma
- d. Cells surrounding the guard cell are called _____ cells.
 i) accessory ii) subsidiary iii) motor iii) bulliform
- e. pH of the lumen of thylakoid _____ in the presence of light
 i) increase ii) decrease iii) remain same iv) none of the above
- f. The total requirement of ATP & NADPH for each molecule of CO₂ fixed & reduced in photosynthesis is _____
 i) 2 ATP & 2 NADPH ii) 3ATP & 2 NADPH
 iii) 2 ATP & 3 NADPH iv) 4 ATP & 3 NADPH
- g. Photochemical reaction occurs in _____
 i) Lumen of thylakoid ii) Stroma of chloroplast
 iii) Membrane of thylakoid iv) Inner membrane of chloroplast
- h. Purine, pyrimidines, cellulose, starch are examples of _____ metabolites.
 i) Secondary ii) Primary iii) Tertiary iv) Quaternary
- i. _____ part of *Zingiber officinale* is of medicinal importance
 i) Roots ii) Dried rhizome iii) Leaves iv) Entire plant
- j. _____ alkaloid is present in *Aloe*.
 i) Aloin ii) Eugenol iii) Santalol iv) Vasicine

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B. Answer the following in **one sentence**:

- a) Why chlorophyll a is the reaction center?
 b) What is the role of bulliform cells?
 c) Give role of water in photosynthesis.

- d) Name any one Phloem element.
- e) Name any one energy rich metabolites

Q.2 Answer **any two** from the following :

- a) Describe different components of phloem tissue.
- b) Write a note on various epidermal appendages.
- c) Describe the types of stomata. Add a note on its functions.
- d) With the help of neat and labeled diagram explain T.S. of monocot stem.

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Q.3 Answer **any two** from the following:

- a) Describe the calvin pathway of carbon fixation in C_3 plants.
- b) Describe the role of plant pigments involved in photosynthesis.
- c) Describe non-cyclic photophosphorylation.
- d) Explain CAM pathway.

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Q.4 Answer **any two** from the following:

- a) Give an account of secondary metabolites with reference to types, example & functions.
- b) What is grandma's pouch? Give botanical name, family, active constituents & uses of *Aloe*.
- c) What is medicinal botany? Add a note on active constituents & uses of Turmeric and Ginger.
- d) What are primary metabolites? Add a note a different types of primary metabolite.

Q.5 Write short notes on (**any four**):

- a) Nature & role of light in photosynthesis
- b) Difference between PS-I & PS-II
- c) Epidermal tissue system
- d) Phloem tissue
- e) Significance of photosynthesis
- f) Tulsi

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