Q. P. Code: 52073

[Time: Three Hours] **[Marks. 100]**

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: **10**

a) Cells surrounding the guard cell are called _____ cells.
i) accessory ii) subsidiary iii) motor iii) bulliform

b) _____ is a complex permanent tissue.
i) Parenchyma ii) Xylem iii) Collenchyma iv) Sclerenchyma

c) Cotton fibre is the part of _____ tissue system.
i) Epidermal ii) Vascular iii) Ground iv) Meristematic

d) _____ are unicellular structures present on epidermis.
i) Glandular hairs ii) Scales iii) Ramentum iv) Dendroid hairs

e) _____ is the essential pigment for photosynthesis.
i) Anthocyanin ii) Carotene iii) Chlorophyll iv) Xanthophyll

f) During photosynthesis the final product of Calvin cycle is _____.
i) Pyruvate ii) PGA iii) RuBP iv) Glyceraldehyde

g) Plants during non-cyclic Photophosphorylation produce _____.
i) ATP ii) NADPH iii) NADPH and ATP iv) NADH and ATP

h) _____ part of *Zingiber officinale* is of medicinal importance.
i) Roots ii) Dried rhizome iii) Leaves iv) Entire plant

i) _____ are the constituents of the basic molecular structure of the cell.
i) Primary metabolites ii) Secondary metabolites
iii) Alkaloids iv) Lectins

j) Turmeric powder is prepared from _____ of *Curcuma longa.*
i) Root ii) Leaf iii) Rhizome iv) Bark

Q 1. B. Answer the following in **one sentence:** **10**

a) Write any two functions of parenchyma tissue.
b) Write any two active constituents of *Aloe*.
c) Name any two energy rich metabolites
d) How many NADPH &ATP molecules are required to fix one CO_2 molecule in Calvin cycle?
e) State the functions of medullary rays.

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Q.2 Answer **any two** from the following: **20**

a) Describe T.S. of young Dicot stem.
b) Explain the anatomy of monocot root.
c) Explain the structure and functions of simple permanent tissues.
d) Describe various epidermal appendages.

Q.3 Answer **any two** from the following: **20**

a) Explain Calvin pathway in C_3 plants.
b) Describe the process of fixation of carbon dioxide in C_4 plants.
c) Describe the role of plant pigments involved in photosynthesis.
d) Describe the process of Non-cyclic photophosphorylation.

Q.4 Answer **any two** from the following: **20**

a) What are secondary metabolites? Give types and functions of secondary metabolites?
b) What is medicinal botany? Add a note on active constituents & uses of Turmeric and Ginger.
c) Give an account of botanical name, family, active constituents and uses of Sandalwood and Tulsi.
d) What are the components of grandma's pouch? State the botanical name, family, source, active constituents and medicinal uses of Adulsa.

Q.5 Write short notes on **(any four)**: **20**

a) Structure of Vascular bundles in monocot stem
b) Phloem tissue
c) Schematic representation of CAM pathway
d) Active constituents of *Aloe*
e) Primary metabolites
f) Nature & role of light in photosynthesis

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