

[Time: Three Hours]

[ Marks:100]

Please check whether you have got the right question paper.

- N.B:
1. All questions are **compulsory**.
  2. **Figures to right** indicate **full marks**.
  3. Draw **neat & labeled** diagrams wherever necessary.

**Q.1** A) Choose the correct option from the following

- a) Cotton fibre is a part of \_\_\_\_\_ tissue system.
  - i) Epidermal
  - ii) Ground
  - iii) Vascular
  - iv) Meristematic
- b) Pith is usually composed of \_\_\_\_\_.
  - i) Aerenchyma
  - ii) Collenchyma
  - iii) Parenchyma
  - iv) Sclerenchyma
- c) Guard cells are surrounded by \_\_\_\_\_ cells.
  - i) accessory
  - ii) subsidiary
  - iii) motor
  - iv) bulliform
- d) The limiting layer of cortex is \_\_\_\_\_.
  - i) pericycle
  - ii) endodermis
  - iii) hypodermis
  - iv) pith
- e) The synthesis of ATP in chloroplast is associated with \_\_\_\_\_.
  - i) non-cyclic electron flow
  - ii) electron flow between PS II & PS I
  - iii) accumulation of  $H^+$  in the thylakoid
  - iv) all of the above
- f) At low  $CO_2$  concentration, photosynthesis is limited by \_\_\_\_\_.
  - i) carboxylation capacity of Rubisco
  - ii) ability of Calvin cycle enzymes to regenerate RuBP
  - iii) ATP + NADPH
  - iv) all of the above
- g) The pigment molecules responsible for photosynthesis are located in the \_\_\_\_\_.
  - i) cytoplasm of the cell
  - ii) stroma of chloroplast
  - iii) thylakoid membrane of chloroplast
  - iv) nucleus
- h) Haldi is common name of \_\_\_\_\_.
  - i) *Curcuma longa*
  - ii) *Adhatoda vasica*
  - iii) *Zingiber officinale*
  - iv) *Santalum album*

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P.T.O

- i) Morphine, Codeine are examples of \_\_\_\_\_.
- alkaloids
  - lectins
  - drugs
  - pigments
- j) \_\_\_\_\_ is an alternative form of medicine which uses different herbs and herbal products for administration to cure different diseases.
- Ayurveda
  - Allopathy
  - Homoeopathy
  - None of the above

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

- What is a dorsiventral leaf?
- What are meristematic tissues?
- Which wavelengths of light are efficiently absorbed by chlorophyll molecules?
- Name any two phenolic compounds found in plants.

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

- What are simple permanent tissues? Give an account of sclerenchyma.
- Explain the internal structure of monocot leaf.
- Discuss the anatomy of dicot stem.
- Write a detailed note on epidermal outgrowths studied by you.

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

- Describe the various pigments involved in the process of photosynthesis in green plants.
- Give a comparative account of process of fixation of CO<sub>2</sub> in C<sub>4</sub> and CAM plants.
- Describe the Calvin pathway of carbon fixation in C<sub>3</sub> plants.
- Describe the process of non cyclic photophosphorylation.

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

- Give an account of secondary metabolites with reference to types, examples & functions.
- What are the contents of Grandma's pouch? Give botanical name, family, active constituent and uses of Adulsa.
- Give botanical name, family, active constituents and uses of Tulsi and Sandal wood.
- What is medicinal botany? Add a note on primary metabolites.

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**Q.5 Write short note on ( **Any four** )**

- Stomata
- Xylem tracheids
- Role of PEP- carboxylase
- Cyclic photophosphorylation
- Medicinal uses of Ginger.
- Aloe* as a medicinal plant

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