Q.P. Code :03090

[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 the **right** indicate **full marks**
3. Draw **neat and labeled** diagrams wherever necessary.

Q.1 (A) Choose the correct option from the following: **10**

a) Simple tissue are _____.
   i) parenchyma, xylem and collenchyma
   ii) parenchyma, collenchyma and sclerenchyma
   iii) parenchyma, xylem and sclerenchyma
   iv) parenchyma, xylem and phloem

b) Epidermal outgrowths are known as _____.
   i) trichomes
   ii) stomata
   iii) cuticle
   iv) wax

c) _____ hairs are found in *Thespesia* leaf.
   i) Stinging
   ii) Glandular
   iii) Peltate
   iv) 'T' shaped

d) Guard cells are surrounded by _____ cells.
   i) bulliform
   ii) subsidiary
   iii) motor
   iv) epidermal

e) Photoxidation of chlorophyll is prevented by _____.
   i) carotenoids
   ii) anthocyanins
   iii) phycobilins
   iv) fucoxanthin

f) During photosynthesis, the final product of the calvin cycle is _____.
   i) ribulose bisphosphate
   ii) phosphoglycerate
   iii) pyruvate
   iv) glyceraldehyde 3-phosphate

g) The strongest reducing agent in photosynthetic electron transfer reaction is _____.
   i) pastoquinone
   ii) P_{680}
   iii) P_{700}
   v) plastocyanin

h) Rubber, gums, cellulose are examples of _____ substances.
   i) polymeric
   ii) Alkaloids
   iii) pigments
   v) essential oils

P.T.O

i) _____ leaf decoctions are the best bronchodilators.
   i) *Aloe*
   ii) Adulsa
   iii) Haldi
   iv) Ginger

j) _____ part of *Santalum* plant is used medicinally.
   i) Stem
   ii) Bark
   iii) Seed
   iv) Leaf

(B) Answer the following in **one** sentence: **10**

i) Mention the role of hypodermis in dicot stem.
ii) What are meristematic tissues?
iii) Define the process of photosynthesis.
iv) Name the 4-C compound formed in CAM cycle.
v) Name two essential oils found in plants.

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

a) Explain the anatomical characters of monocot root.
b) What is simple tissue? Give an account of simple tissue.
c) Discuss the internal structure of dicot stem.
d) Give a detailed account of any five epidermal outgrowths with suitable examples.

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

a) Describe the regeneration phase of calvin cycle.
b) Describe chlorophyll, xanthophyll and carotenoid with reference to their role as important plant pigments.
c) Give process of fixation of CO_2 in C_4 plants.
d) Describe the process of cyclic photophosphorylation.

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

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

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

a) Tracheids
b) Bulliform cells
c) Schematic representation of CAM pathway
d) Non - cyclic photophosphorylation
e) Botanical name and active constituents of Adulsa.
f) Contents of Grandma's pouch

_____XXX_____