VCD 15/11/19 Botany II F.Y.B.Sc Semester II 3 Hours 100 Marks

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. Simple tissues are parenchyma, collenchyma and_____.
i) xylem ii) phloem iii) sclerenchyma iv) stele

b. When protoxylem lies on the outerside 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 CO_2 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

10

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 : 10
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.

Q.3 Answer **any two** from the following: 10
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.

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):** 20
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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