

Total No. of printed pages = 5

**63/2 (SEM-2) BOT 203**

**2022**

**BOTANY**

**(Theory Paper)**

**Paper Code : BOT 203**

**(Plant Physiology and Biochemistry)**

**Full Marks – 80**

**Time – Three hours**

**The figures in the margin indicate full marks  
for the questions.**

- 1. Choose the correct answer for the following  
questions : 1×6=6**

**(a) Lipids are \_\_\_\_\_ .**

- (i) Protective function**
- (ii) Signaling molecules**
- (iii) Fuel reserve**
- (iv) All of the above**

**[Turn over**

(b) Cellulose and chitin are \_\_\_\_\_.

- (i) Monosaccharide
- (ii) Disaccharide
- (iii) Homopolysaccharide
- (iv) Heteropolysaccharide

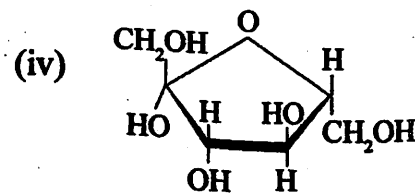
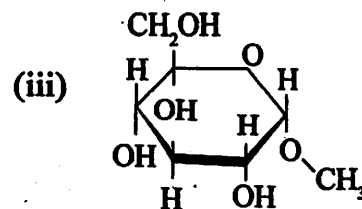
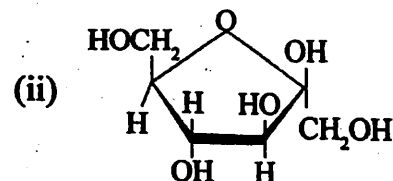
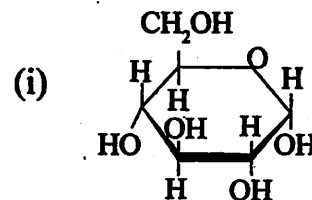
(c) Which of the following does not occur in cyclic photophosphorylation ?

- (i) Photolysis of water
- (ii) Evolution of oxygen
- (iii) Formation of reduced NADPH
- (iv) All of the above

(d) Which of the following is not true for ABA ?

- (i) Promotes senescence
- (ii) Induces bud dormancy
- (iii) Enhances accumulation of cuticle
- (iv) Induces vivipary

(e) Which of the following is a non-reducing sugar ?



(f) Amino acid containing sulphur is \_\_\_\_\_.

- (i) Tryptophan                      (ii) Methionine  
(iii) Tyrosine                      (iv) Threonine.

2. Answer the following questions :  $2 \times 5 = 10$

(a) Mention the products formed during photosynthesis in higher plants.

(b) How is the activity of the enzyme effected by the concentration of the substrate and temperature ?

(c) Why photorespiration is considered 'necessary evil' phenomenon ?

(d) Explain D and L-notation of carbohydrates.

(e) Differentiate between polar and non-polar solvents. Give one example for each.  $1 + 1 = 2$

3. Answer any *two* of the following questions :

$10 \times 2 = 20$

(a) Give an account on the various mechanisms by which enzymes are regulated within a cell.

(b) Explain the role played by various microbes on  $N_2$  assimilation.

(c) Write explanatory notes on Cytokinin signaling pathways.

4. Write notes on any *six* of the following :  $5 \times 6 = 30$

(a) Post translational modification of proteins

(b) Structural and functional aspects of tRNA

(c) Ethylene

(d) Osmosis and diffusion

(e) Chloroplast movement

(f) Biological nitrogen fixation

(g) Phytochrome

(h) Amino acids.

5. Answer any *one* of the following questions :

$14 \times 1 = 14$

(a) Discuss the synthesis of protein in prokaryotic organism.

Or

(b) What are photoassimilates ? Discuss the mechanism for its loading and unloading in plants.  $2 + 12 = 14$