

2021

Time : 3 hours

Full Marks : 60

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer any four questions in which

Q. No. 1 is compulsory.

1. Choose the correct answer from the given alternatives : $1\frac{1}{2} \times 10 = 15$

(a) Cyclic Electron Transport in Photophosphorylation involves :

- (i) PS-I
- (ii) PS-II
- (iii) Both (i) and (ii)
- (iv) None of these

2

(b) The efficiency of aerobic respiration is about :

- (i) 38%
- (ii) 48%
- (iii) 50%
- (iv) None of these

(c) In C_4 plants the first stable intermediate product is :

- (i) Phosphoglyceric Acid
- (ii) Maleic Acid
- (iii) Oxalo Acetic Acid
- (iv) All of these

(d) The primary acceptor of CO_2 in tropic grasses is :

- (i) PGA
- (ii) PEP
- (iii) Maleic Acid
- (iv) RUBP

(e) Which one of the following is the connecting link between Glycolysis and Kreb's cycle ?

- (i) Citric Acid
- (ii) Maleic Acid
- (iii) Acetyl Co-A
- (iv) Pyruvic Acid

(f) Dimorphic Chloroplasts are found in the leaves of :

- (i) C_3 Plants

(ii) C₄ Plants

(iii) C₂ Plants

(iv) All of these

(g) The total no. of ATP produced as a result of complete oxidation of one molecule of Glucose in Eukaryotes is :

(i) 2 ATP

(ii) 36 ATP

(iii) 38 ATP

(iv) 4 ATP

(h) The purple colour of juvenile leaves is due to : <https://www.bbmkuonline.com>

(i) Chlorophyll A

(ii) Chlorophyll B

(iii) Anthocyanin

(iv) All of these

(i) The nitrogen fixing bacterium found in the root nodules of legumes is :

(i) Rhizobium

(ii) Nitrosomonas

(iii) Mycobacterium

(iv) All of these

(j) Photosynthesis is :

(i) Catabolic reaction

(ii) Amphibolic reaction

(iii) Anabolic reaction

(iv) None of these

2. Write short notes on any two of the of following :

$7\frac{1}{2} \times 2 = 15$

(a) ATP

(b) Respiratory Quotient

(c) Substrate level Phosphorylation

(d) Structure of saturated fatty acid

3. Describe Calvin cycle of photosynthesis with reactions and enzymes. 15

4. What is Glycolysis ? Describe Glycolytic pathway of respiration. 15

5. Give an account of β -oxidation and mention its efficiency. 15

6. Describe the mechanism of symbiotic Nitrogen fixation in legumes. 15

7. Describe TCA (Kreb's Cycle). 15

8. Describe reductive amination and transamination. 15