

INDIAN SCHOOL NIZWA
Class XI. Biology Photosynthesis MCQs

1. **The reaction centre in the light-harvesting complex is formed by _____**
 - a) Chlorophyll b
 - b) Grana
 - c) Chlorophyll e
 - d) A single chlorophyll a molecule
2. **Which of the following is not related to the light reaction?**
 - a) Also called Photochemical phase
 - b) Light absorption
 - c) Electron transport
 - d) Water splitting
3. **Which pigment is absent in each photosystem?**
 - a) One molecule of chlorophyll a
 - b) Two molecules of chlorophyll b
 - c) One molecule of chlorophyll b
 - d) One molecule of xanthophyll
4. **PS I is the photosystem present only in _____ photosynthesis.**
 - a) Amoeba
 - b) Bacterial
 - c) Fungal
 - d) Plant
5. **Which among the following are raw materials required for the light reaction?**
 - a) NADPH_2 and H_2O
 - b) ADP and OH_2
 - c) ATP only
 - d) ADP, H_2O , and NADP
6. **Which of the following is most sensitive to higher wavelengths of sunlight?**
 - a) Photolysis
 - b) Chlorophyll
 - c) PS I
 - d) PS II
7. **How many electrons and protons are produced during the photolysis of water?**
 - a) 4 electrons and 3 protons
 - b) 1 electron and 2 protons
 - c) 3 electrons and protons
 - d) 4 electrons and 4 protons
8. **Which of the following is the molecule that carries energy in the form of electrons during photosynthesis?**
 - A) Chlorophyll
 - B) ATP
 - C) NADPH
 - D) Glucose
9. **What is required to synthesize one glucose molecule during the Calvin cycle?**
 - (a) 12 molecules of ATP and 18 molecules of NADPH_2
 - (b) 6 molecules of ATP and 12 molecules of NADPH_2
 - (c) 18 molecules of ATP and 12 molecules of NADPH_2
 - (d) 12 molecules each of NADPH_2
10. **In photorespiration, what is the first reaction?**
 - (a) Carboxylation
 - (b) Decarboxylation
 - (c) Oxygenation
 - (d) Phosphorylation

11. **What statement about the C4 pathway is false?**
 - (a) It requires more energy than the C3 pathway for the production of glucose
 - (b) It overcomes loss due to photorespiration
 - (c) The CO₂ acceptor is a C3 compound
 - (d) It is inhibited by high CO₂ concentration
12. **What is the relation between incident light and CO₂ fixation rates at low light intensities?**
 - (a) sigmoid
 - (b) linear
 - (c) parabola
 - (d) hyperbola
13. **What happens during photophosphorylation?**
 - (a) CO₂ and O₂ unite
 - (b) Phosphoglyceric acid is produced
 - (c) Aspartic acid is formed
 - (d) Light energy is converted into chemical energy by the production of ATP
14. **Photorespiration involves oxidation of**
 - (a) PGA
 - (b) RuBP
 - (c) Chlorophyll a
 - (d) Both a and b
15. **In Calvin cycle, 1 molecule of glucose is formed from**
 - (a) 6CO₂ + 30ATP + 12NADPH
 - (b) 6CO₂ + 12ATP
 - (c) 6CO₂ + 18ATP + 12NADPH
 - (d) 6CO₂ + 18ATP + 30NADPH
16. **Maximum photosynthesis occurs in**
 - (a) Blue light
 - (b) Red light
 - (c) White light
 - (d) Green light
17. **The first product of C4 pathway is**
 - (a) PGA (b) DHA (c) Oxaloacetate (d) Phosphoenolpyruvate
18. **H₂ donor during photosynthesis is**
 - (a) ATP
 - (b) NADP
 - (c) NADPH
 - (d) NADH
19. **C3 and C4 plants differ with respect to**
 - (a) Number of ATP molecules consumed
 - (b) First product
 - (c) The substrate which accepts carbon dioxide
 - (d) All
20. **When CO₂ is added to PEP, the first stable product synthesised is:**
 - a. Pyruvate
 - b. Glyceraldehyde-3-phosphate
 - c. Phosphoglycerate
 - d. Oxaloacetate