UNIT-1

1. Light reaction accomplishes:

a) Photolysis of water
b) Evolution of oxygen
c) Production of energy rich compounds
d) All the above events

2. Evolution of oxygen takes place in:

a) Light reaction
b) Dark reaction
c) Both light reaction and dark reaction
d) Electron transport chain between PS I and PS II.

3. Splitting of water is associated with:

a) Pigment system I (P 700)
b) Pigment system II (P 680)
c) Pigment system I (P 890)
d) All the above

4. Electrons are transported from water to PS II reaction centre through water oxidizing complex is a theory of:

a) Kok *et al*
b) Hill and Benda
c) Arnon
d) Mitchell

5. Ruben, Hassid and Kamen (1941) confirmed using isotopic technique that in photosynthesis:

a) Oxygen comes from carbon – dioxide
b) Oxygen comes from water
c) Oxygen comes from carbon – dioxide and water both.
d) Oxygen comes from nitrogen peroxide

6. 'Z' scheme of photosynthetic electron transport was discovered by:

a) Robert Hill
b) Kok *et al*
c) Hill and Bendall
d) Van – Niel

7. Chemiosmotic coupling theory of phosphorylation was proposed by:

a) P. Mitchell b) Huber et al

c) R. Emerson d) Lewis

8. Chlorophyll a differs from chlorophyll b in having:

a) Methyl group at tetraphyrrole ring I

b) Aldehyde group at tetraphyrrole ring I

c) Methyl group at tetrapyrrole ring II

d) Aldehtde group at tetraphyrrole ring II

9. Solarization is a phenomenon of:

a) Absorption of light be etiolated leaves

b) Absorption of light by green leaves

c) Oxidation of reaction centre of PS II by high intensity of light

d) Oxidation of antenna molecules of PS II by high intensity of light

10. Light dependent step of chlorophyll synthesis is conversion of:

a) Protochlorophyllide to chlorophyllide a

b) Protoprophyrigogen to protoporphyrin

c) Chlorophyllide a to chlorophyll a

d) Uroporphyrinogen to coproporphyrinogen

11. Thylakoids are not stacked in granum in:

a) Algae b) Bryophytes

c) Angiosperms d) Conifers

12. A quantasome comprises of:

a) Pigment system I only

b) Pigment system II only

c) Pigment system I and pigment II both

d) Two photosynthetic units

13. Each photosystem comprises of:

a) Antenna molecules

b) Antenna chlorophylls

c) Antenna molecules

d) Antenna chlorophylls and reaction centre

14. In green light maximum photosynthesis in:

a) Red algae

b) Blue green algae

c) Green algae

d) Antenna chlorophylls and reaction centre

15. "Soret band" is shown by chlorophyll molecules in:

a) Violet blue region

b) Red region

c) Yellow – orange region

d) Indigo – green region

16. Which one of the following is synthesized in the dark reaction?

a) PGA b) ATP

c) NADPH + H^+ d) O_2

17. RuBisCO is made up of:

a) 14 sub – units b) 15 sub – unit

c) 16 sub – units d) 18 sub – unit

18. Photosynthesis is maximum in:

a) Red light as both pigment systems lie in this region

b) Blue light as it has more energy

c) Green light as it is absorbed by red pigments

d) White light as it comprises of all colours

19. Which of the following is called 'assimilatory power':

a) NADPH + H^+ b) NADH + H^+

c) NADPH + H^+ + ATP d) NADH + H^+ +ATP

20. Dichlorophenyl dimethyl urea (DCMU) inhibits flow of electrons:

a) In non – cyclic electron transport system

b) In cyclic electron transport system

c) Both cyclic and non – cyclic electron transport system

d) In none of the electron transport system

21. Photophosphorylation takes place in:

a) Mitochondria b) Chloroplast

` c) Cytoplasm d) All the above

22. First stable product of Calvin cycle is a:

a) 3 – carbon compound b) 2 – carbon compound

c) 4 – carbon compound d) 6 – carbon compound

23. C_4 cycle occurs in:

a) Temperate plants

b) Tropical plants

c) Shade loving plants

d) Both temperate and tropical plants

24. Which of the following enzyme has dual role:

a) PEP carboxylase b) RUBISCO

c) Phosphorylase d) Aldolase

25. Photorespiration does not occur in:

a) C_4 plants b) CAM plants

c) C_3 plants d) Temperate plants

26. Product synthesis is phase comprises o:

a) Formation of fructose b) Formation of RuDP

c) Formation of starch d) All the above

27. 'Kranz type' of anatomy is shown by:

a) C_3 plants leaves b) C_4 plants leaves

c) CAM plants d) CAM plants and C_4 plants both

28. Which of the following is not shown by C4 plants:

a) Low CO_2 compensation point

b) High CO_2 compensation point

c) Kranz type of anatomy of leaves

d) Primary carbon acceptor is C_3 compound

29. Peroxisome is associated with:

a) Photorespiration
b) Dark respiration
c) Glyoxylate cycle
d) Pentose phosphate pathway

30. Asymmetrical distribution of radio – carbon in glucose – 6 – phosphate is called:

a) Pasteur effect
b) Gibbs effect
c) Lang effect
d) Crab – tree effect

31. Non – cyclic photophosphorylation in photosynthetic bacteria comprises of:

a) Pigment system I (P 700) and pigment system II (p 680)
b) Pigment system I (P 890)
c) Pigment system I (P 890) and pigment system II (P 680)
d) Pigment system I (P 700) and (P 890)

32. During dark reaction of photosynthesis:

a) Water is split
b) CO_2 is reduced to carbohydrate
c) Glucose is broken to CO_2 and water
d) ATP is synthesized

33. About 90% of the world photosynthesis is carried out by:

a) Algae
b) Bryophytes
c) Conifers
d) Angiosperms

34. Primary process of light reaction is:

a) Splitting of water
b) Excitation of chlorophyll a molecules
c) Syntheses of ATP
d) Production of reducing power

35. If atmospheric CO_2 concentration raises to 500 ppm, the possible result will be:

a) There will be no effects on photosynthetic yield
b) Photosynthesis will be enhanced
c) Photosynthesis will be decreased
d) First it will decrease then increase