

20. The ultimate gain of light reaction is :
- (a) ATP & NADPH₂ (b) NADPH₂
 (c) Only ATP (d) Only O₂
21. Cyclic and non-cyclic flow of e⁻ is used in plants to
- (a) meet the ATP demands of Calvin-cycle.
 (b) avoid producing excess NADPH + H⁺.
 (c) balance ATP and NADPH + H⁺ ratio in chloroplasts.
 (d) All of the above
22. Which one does not differ between a C₃ and a C₄ plant?
- I. Initial CO₂ acceptor.
 II. Extent of photorespiration.
 III. Enzyme catalyzing reaction that fixes CO₂.
 IV. Presence of Calvin cycle.
 V. Leaf anatomy.
- (a) I and V (b) IV
 (c) II and III (d) II
23. Photophosphorylation is the process in which
- (a) CO₂ and O₂ unite
 (b) Phosphoglyceric acid is produced
 (c) Aspartic acid is formed
 (d) Light energy is converted into chemical energy by production of ATP
24. Which occurs during the light reaction of photosynthesis?
- (a) Chlorophyll is produced
 (b) Water splits to form 2H⁺ & O₂
 (c) CO₂ is given off as a waste
 (d) Sugar is formed from CO₂ and water
25. In photosynthesis, hydrogen is transferred from the light reactions to dark reactions by –
- (a) DPN (b) DNA
 (c) ATP (d) NADP
26. Hatch and Slack pathway (HSK pathway) is otherwise known as C₄-cycle because
- (a) the first stable product is oxaloacetic acid / OAA which is a C₄-compound.
 (b) the primary CO₂ acceptor is OAA, a C₄-compounds.
 (c) all intermediate metabolites are C₄-compound.
 (d) at one time 4CO₂ molecules take part in carboxylation pathway.
27. Which of the following element is a component of ferredoxin?
- (a) Copper (b) Manganese
 (c) Zinc (d) Iron
28. During photochemical reaction of photosynthesis –
- (a) Liberation of O₂ takes place
 (b) Formation of ATP and NADPH₂ take place
 (c) Liberation of O₂, formation of ATP, and NADPH₂ takes place
 (d) Assimilation of CO₂ takes place

- y 29. Splitting of water in photosynthesis is called :
 (a) Dark reaction (b) Photolysis
 (c) Electron transfer (d) Phototropism
30. The enzyme rubisco is found in
 (a) chloroplast (b) mitochondria
 (c) cytoplasm (d) nucleus
31. What is the first stable intermediate product of photosynthesis?
 (a) Glucose (b) Formaldehyde
 (c) Phosphoglyceric acid (d) Phosphoglyceraldehyde
32. Which of the following is likely to be the first substance that a green plant makes in photosynthesis?
 (a) A simple sugar (b) Starch
 (c) Fats (d) Proteins
33. The first acceptor of electrons from an excited chlorophyll molecule of photosystem II is –
 (a) Quinone (b) Cytochrome
 (c) Iron-sulphur protein (d) Ferredoxin
34. Which is not correct for cyclic photophosphorylation ?
 (a) No O_2 given off
 (b) No water consumed
 (c) No $NADPH_2$ synthesized
 (d) PS-I and PS-II are involved
35. The protons that make up the proton gradient used during the light reactions of photosynthesis come from
 (a) glucose (b) ATP
 (c) H_2O (d) $NADPH$
- y 36. Ferredoxin is a constituent of
 (a) PS I (b) PS II
 (c) Hill reaction (d) P_{680}
37. Plants give off oxygen because
 (a) oxygen results from the incorporation of carbon dioxide into sugars.
 (b) plants do not respire since they photosynthesize.
 t (c) water is the initial proton donor, leaving oxygen as a photosynthetic by-product.
 (d) All of the above
38. Assimilatory power refers to
 1 (a) Generation of ATP and $NADPH_2$
 (b) Reduction of CO_2
 s (c) Splitting of water
 (d) Disintegration of plastids
39. Manganese is required in
 (a) Nucleic acid synthesis
 (b) Plant cell wall formation
 1 (c) Photolysis of water during photosynthesis
 (d) Chlorophyll synthesis
- ? 40. Ferredoxin is a component of
 (a) Hill reaction (b) Photosystem-I
 (c) P_{680} (d) Photosystem-II
41. 'Z-scheme' show the transfer of electrons involving
 (a) Bundle sheath cell (b) PS I
 (c) PS II (d) Both (b) and (c)
- s 42. How many turns of Calvin cycle yield one molecule of glucose?
 (a) Eight (b) Two
 (c) Six (d) Four