CHAPTER – 11

Respiration in Plant

1. The primary purpose of respiration in plants is to:
   a) Produce glucose
   b) Absorb water
   c) Release energy
   d) Synthesize proteins

2. In which part of the plant cell does glycolysisoccur?
   a) Mitochondria
   b) Cytoplasm
   c) Nucleus
   d) Chloroplast

3. The final electron acceptor in the electron transportchain of cellular respiration is:
   a) Carbon dioxide
   b) Water
   c) Oxygen
   d) NADH

4. Which stage of respiration occurs in themitochondria?
   a) Glycolysis
   b) Krebs cycle
   c) Fermentation
   d) Calvin cycle

5. The net gain of ATP from glycolysis is:
   a) 1 ATP
   b) 2 ATP
4 ATP
   d) 36 ATP

6. Which of the following is NOT a product of theKrebs cycle?

a) ATP

b) NADH

c) FADH2

d) Glucose

7. The process of converting pyruvate intoacetyl-CoA occurs in:

a) Cytoplasm

b) Mitochondria

c) Chloroplast

d) Nucleus

8. During aerobic respiration, the majority of ATP isproduced during:

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

9. Fermentation occurs in the absence of:

a) Carbon dioxide

b) Oxygen

c) Glucose

d) Water

10. The primary byproduct of alcoholic fermentationis:

a) Lactic acid

b) Ethanol

c) Carbon dioxide

d) Oxygen

11. Which process is used by plants to generate ATPin the absence of oxygen?

a) Aerobic respiration

b) Anaerobic respiration

c) Photosynthesis

d) Calvin cycle

12. Which molecule acts as an energy carrier incellular respiration?

a) Glucose

b) ATP

c) NADPH

d) Ribulose bisphosphate

13. The conversion of glucose to pyruvate is knownas:

a) Krebs cycle

b) Glycolysis

c) Calvin cycle

d) Electron transport chain

14. The main function of the electron transport chainis to:

a) Produce ATP

b) Break down glucose

c) Convert pyruvate into acetyl-CoA

d) Fix carbon dioxide

15. The process by which pyruvate is converted tolactic acid occurs in:

a) Mitochondria

b) Cytoplasm

c) Chloroplast

d) Nucleus

16. In cellular respiration, the production of wateroccurs during:

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

17. Which of the following is a product of theanaerobic respiration in plants?

a) Ethanol

b) Lactic acid

c) Oxygen

d) Glucose

18. In the mitochondria, the ATP synthase enzyme islocated in the:

a) Inner membrane

b) Outer membrane

c) Matrix

d) Intermembrane space

19. The energy required to convert ADP to ATP isobtained from:

a) Glucose

b) Electrons

c) Oxygen

d) Proton gradient

20. Which of the following processes occurs in thecytoplasm of plant cells?

a) Krebs cycle

b) Electron transport chain

c) Glycolysis

d) Citric acid cycle

21. The conversion of NADH to NAD+ takes placeduring:

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

22. Which enzyme is responsible for the synthesis ofATP from ADP and inorganic phosphate?

a) ATP synthase

b) RuBisCO

c) Hexokinase

d) Pyruvate dehydrogenase

23. Which molecule is produced during the Krebscycle and used in the electron transport chain?

a) NADH

b) ATP

c) Glucose

d) Oxygen

24. In the absence of oxygen, plant cells may perform:

a) Aerobic respiration

b) Lactic acid fermentation

c) Alcoholic fermentation

d) Photosynthesis

25. The primary role of oxygen in cellular respirationis to:

a) Provide electrons

b) Act as the final electron acceptor

c) Synthesize glucose

d) Produce ATP

26. Which part of the plant cell produces the mostATP during respiration?

a) Cytoplasm

b) Nucleus

c) Mitochondria

d) Chloroplast

27. The Krebs cycle is also known as the:

a) Calvin cycle

b) Citric acid cycle

c) Electron transport chain

d) Glycolysis

28. Which process directly generates the most ATP incellular respiration?

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

29. Which of the following substances is NOTinvolved in cellular respiration?

a) Glucose

b) Oxygen

c) Carbon dioxide

d) Starch

30. The accumulation of which substance causesmuscle fatigue during anaerobic respiration?

a) Ethanol

b) Carbon dioxide

c) Lactic acid

d) Glucose

31. The process of cellular respiration that occurs inthe mitochondria is called:

a) Glycolysis

b) Krebs cycle

c) Calvin cycle

d) Photosynthesis

32. Which of the following is true about the electrontransport chain?

a) It occurs in the cytoplasm
b) It produces carbon dioxide

c) It creates a proton gradient across the innermitochondrial membrane

d) It produces glucose

33. Which stage of respiration involves the generationof a proton gradient?

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

34. The end product of aerobic respiration is:

a) Glucose

b) Oxygen

c) Water

d) Ethanol

35. The role of the mitochondria in plant cells is:

a) Photosynthesis

b) Cellular respiration

c) Protein synthesis

d) Cell division

36. Which process is responsible for the production ofethanol in plant cells?

a) Lactic acid fermentation

b) Alcoholic fermentation

c) Glycolysis

d) Krebs cycle

37. The citric acid cycle is another name for the:

a) Calvin cycle

b) Krebs cycle

c) Electron transport chain

d) Glycolysis

38. Which of the following processes is common toboth aerobic and anaerobic respiration?

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Calvin cycle

39. The ATP yield from one glucose molecule duringaerobic respiration is approximately:

a) 2 ATP

b) 4 ATP

c) 36 ATP

d) 50 ATP

40. Which of the following does NOT occur inmitochondria?

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) ATP synthesis

41. The process of breaking down glucose to produceenergy is known as:

a) Photosynthesis

b) Cellular respiration

c) Protein synthesis

d) Glycolysis

42. The primary site of ATP synthesis in themitochondria is the:

a) Matrix

b) Outer membrane

c) Inner membrane

d) Intermembrane space

43. Which of the following is NOT a product of theKrebs cycle?

a) Carbon dioxide

b) ATP

c) NADH

d) Glucose

44. The role of NAD+ in cellular respiration is to:

a) Store glucose

b) Accept electrons

c) Provide energy

d) Fix carbon dioxide

45. Which metabolic pathway produces the mostATP?

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

46. Which of the following is a byproduct ofanaerobic respiration in plants?

a) Ethanol

b) Oxygen

c) Water

d) ATP

47. During respiration, the electron transport chainoccurs in the:

a) Cytoplasm

b) Mitochondrial matrix

c) Inner mitochondrial membrane

d) Chloroplast

48. Which process is used to regenerate NAD+ fromNADH in the absence

of oxygen?

a) Alcoholic fermentation

b) Lactic acid fermentation

c) Krebs cycle

d) Calvin cycle

49. The majority of ATP during aerobic respiration isproduced in the:

a) Glycolysis

b) Krebs cycle

c) Electron transport chain

d) Fermentation

50. The primary source of energy for cellularrespiration is:

a) Oxygen

b) Glucose

c) ATP

d) Carbon dioxide

Answer Key for Chapter 11 (Respiration in Plants)

1	2	3	4	5
C	B	C	B	B
6	7	8	9	10
D	B	C	B	B
11	12	13	14	15
B	B	B	A	B
16	17	18	19	20
C	A	A	D	C
21	22	23	24	25
C	A	A	C	B
26	27	28	29	30
C	B	C	D	C
31	32	33	34	35

B	C	C	C	B
36	37	38	39	40
B	B	A	C	A
41	42	43	44	45
B	C	D	B	C
46	47	48	49	50
A	C	B	C	B