

NEET : CHAPTER WISE TEST-12

SUBJECT :- BIOLOGY

CLASS :- 11th

CHAPTER :- RESPIRATION IN PLANT

DATE.....

NAME.....

SECTION.....

(SECTION-A)

1. Which of the following statement justifies the absence of respiratory organs in plants?
 (A) Each plant part takes care of its own gas-exchange needs
 (B) There is very little transport of gases from one plant part to another.
 (C) Roots, stem and leaves respire at rates far lower than animals do.
 (D) All of these.
2. Fastest energy can be obtained from oxidation of _____
 (A) Glucose (B) Fat
 (C) Protein (D) Organic acids
3. Read the following statements and state true (T) or false (F):
 A. All reactions in respiration are controlled by the specific enzymes.
 B. Proteins, fats and organic acids may be used as respiratory substrates in plants.
 C. Energy released by breakdown of respiratory substances is trapped as chemical energy in the form of ATP

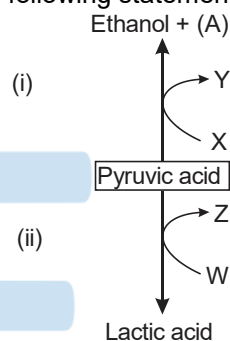
	A	B	C
(A)	T	T	T
(B)	T	F	T
(C)	T	F	F
(D)	F	F	T
4. Type of respiration where respiratory substrate is protein, called as
 (A) Cellular respiration
 (B) Protoplasmic respiration
 (C) Floating respiration
 (D) All except (A)
5. Respiration differs from burning in which of the following?
 (A) Involvement of enzymes
 (B) Energy released in slow stepwise reactions
 (C) Oxidation of respiratory substrate
 (D) More than one option is correct
6. Common source of energy for cellular activities
 (A) ATP (B) Protein
 (C) FAT (D) NAD
7. In Glycolysis, conversion of glyceraldehyde-3 phosphate to 1,3-bisphosphoglyceric acid is catalyzed by which of the following enzyme?
 (A) Phosphofructokinase
 (B) Phosphoglycerate kinase
 (C) Diphosphoglyceraldehyde dehydrogenase
 (D) Phosphoglyceromutase
8. Site of glycolysis in a prokaryotic cell is
 (A) Mesosome (B) Cytosol
 (C) Cell membrane (D) Nucleoid
9. Identify the reaction of glycolysis which involves substrate level phosphorylation:
 (A) Glucos-6-phosphate – Fructose-6-phosphate
 (B) 1,3-bisphosphoglyceric acid – 3-Phosphoglyceric
 (C) Triose-phosphate – Triose bisphosphate
 (D) 2-Phosphoglycerate - Phosphoenolpyruvate
10. Which metabolic pathway is common pathway in both anaerobic and aerobic respirations?
 (A) TCA cycle (B) ETS
 (C) EMP pathway (D) Kreb's cycle
11. Which is true for glycolysis?
 (A) ATP molecules are synthesized between fructose-6- phosphate and fructose-1,6-biphosphate.
 (B) Water molecules are released between PEP and pyruvate.
 (C) NAD is oxidized between PGAL and BPGA.
 (D) ATP molecules are synthesized in the conversion of BPGA into PGA.
12. Two redox equivalents are first removed in respiration in all organisms at _____ level.
 (A) Isocitrate (B) PGAL
 (C) Citrate (D) Pyruvate
13. Identify the true (T) or false (F) statements(s) w.r.t. EMP pathway:
 A. It involves partial breakdown of glucose into two molecules of pyruvate without yielding redox equivalents.
 B. ATP is utilized in two steps and ATP is formed in one step.
 C. No decarboxylation and oxidation occur during glycolysis.
 D. The enzymes involved in the chemical reaction of glycolysis are located in the cytoplasm

	A	B	C	D
(A)	F	F	F	T
(B)	T	T	F	F
(C)	T	F	F	T
(D)	F	T	T	T

14. What occurs in glycolysis?
 (A) Carboxylation
 (B) Decarboxylation
 (C) Reduction
 (D) Oxidation
15. Which enzyme of glycolysis is also called as pack maker enzyme?
 (A) Hexokinase
 (B) Aldolase
 (C) Phosphofructokinase
 (D) Pyruvate kinase
16. During glycolysis
 (i) Fructose-6-phosphate is changed to fructose-1,6- diphosphate by A.
 (ii) Fructose-1,6-diphosphate splits into two triose phosphate by enzyme B.
 A B
 (A) Phosphofructokinase Aldolase
 (B) Aldolase Phosphofructokinase
 (C) Aldolase Enolase
 (D) Phosphofructokinase Enolase
17. Isomerization step takes place in
 (A) Kreb's cycle
 (B) TCA cycle
 (C) EMP pathway
 (D) Terminal oxidation
18. Fermentation involves
 (A) $\text{Glucose} \xrightarrow{2\text{NAD}^+} \text{Pyruvic acid} + 2\text{ATP} \xrightarrow{2\text{NADH}_2} \text{Ethanol} + \text{CO}_2$
 (B) $\text{Pyruvic acid} \xrightarrow{2\text{NADH}_2} \text{Ethanol} + \text{CO}_2 \xrightarrow{2\text{NAD}^+} \text{Lactic acid}$
 (C) $\text{Pyruvic acid} \xrightarrow{2\text{NADH}_2} \text{Lactic acid} \xrightarrow{2\text{NAD}^+} \text{Ethanol} + \text{CO}_2$
 (A) Only (B) and (C) (B) Only (B)
 (C) (A) and (B) only (D) (A), (B) and (C)
19. Alcoholic Fermentation differs from lactic acid fermentation in
 (A) Oxidation of NADH to NAD⁺
 (B) Net gain of 2ATP molecules
 (C) Involving decarboxylase activity
 (D) More than one option is correct
20. Which of the following enzyme is not required during fermentation in microbes?
 (A) Alcohol dehydrogenase
 (B) Pyruvate dehydrogenase
 (C) Lactic acid dehydrogenase
 (D) Pyruvate decarboxylase
21. Final electron acceptors in alcoholic and lactic acid fermentation are
 (A) Ethanol, lactic acid
 (B) Pyruvic acid, pyruvic acid
 (C) Pyruvic acid, acetaldehyde
 (D) Acetaldehyde, pyruvic acid

22. What is the maximum concentration of alcohol of which yeast cells poison themselves to death?
 (A) 6% (B) 13%
 (C) 18% (D) 21%
23. During the process of anaerobic respiration
 (A) A large quantity of CO₂ is evolved always
 (B) Net gain is 8 ATP molecules from one glucose molecule
 (C) NADH is oxidized to NAD⁺ very vigorously
 (D) At least one of the end products is organic

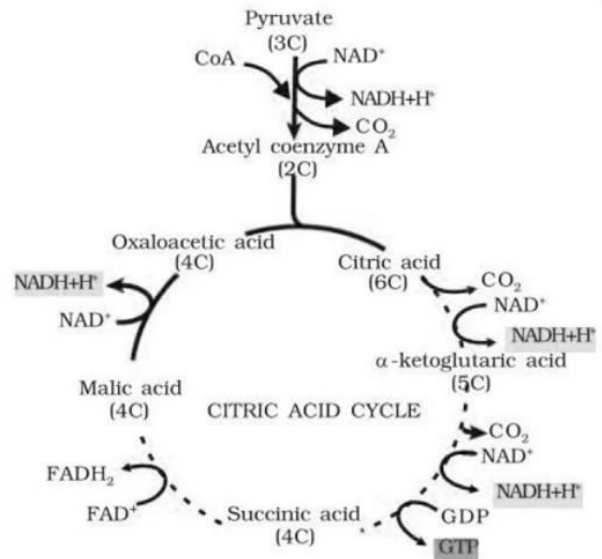
24. With respect to the figure which of the following statement is incorrect?



- (A) The figure shows the fate of pyruvic acid in both ethanol as well as lactic acid fermentation.
 (B) A (CO₂) is produced as a byproduct during the process.
 (C) (ii) —Lactic acid fermentation is carried out by a unicellular eukaryote.
 (D) X to Y or W to Z both represent reoxidation of NADH to NAD⁺
25. Ratio of CO₂ produced in aerobic and anaerobic respiration is
 (A) 3:1 (B) 2:1
 (C) 4:1 (D) 1:1
26. Which of the following statements is not associated with the breakdown of respiratory substrate under aerobic condition?
 (A) The complete oxidation of pyruvate by the stepwise removal of all the hydrogen atoms, leaving three molecules of CO₂
 (B) Pyruvic acid undergoes oxidative decarboxylation.
 (C) Reduction of pyruvic acid in muscles cells.
 (D) Occurs inside the mitochondria.

27. The continued oxidation of acetyl-CoA via Krebs's cycle requires the replenishment of
 (A) α -Ketoglutaric acid
 (B) Succinic acid
 (C) Malic acid
 (D) Oxaloacetic acid
28. First decarboxylation in the Krebs's cycle occurs at the level of
 (A) α -Ketoglutarate
 (B) OAA
 (C) Oxalosuccinate
 (D) Succinyl-CoA
29. Conversion of citrate into isocitrate in Krebs's cycle occurs with the help of enzyme_____and cofactor_____ respectively
 (A) Aconitase, Fe^{++}
 (B) Aconitase Mn^{++}
 (C) Isocitrate dehydrogenase, Fe^{++}
 (D) Citrate synthase Mg^{++}
30. Select incorrectly matched pair:
 (A) Link reaction – Oxidative decarboxylation
 (B) Substrate level phosphorylation – Only cytoplasm of eukaryotes
 (C) Krebs's cycle - Mitochondrial matrix
 (D) Chemiosmotic hypothesis – Proton motive force
31. Syntheses of ATP is inhibited when proton movement from outer space to matrix of mitochondria through complex V does not occur due to
 (A) Cyanide (B) Antimycin A
 (C) Oligomycin (D) Rotenone
32. The five-carbon intermediate compound formed between conversion of isocitrate to succinyl CoA
 (A) α -Ketoglutaric acid
 (B) Malic acid
 (C) Succinic acid
 (D) Oxalosuccinate
33. In which of the following steps of Krebs's cycle decarboxylation occurs?
 (i) Pyruvate \rightarrow Acetyl-CoA
 (II) Oxalosuccinate \rightarrow α -Ketoglutaric acid
 (III) α -Ketoglutaric acid \rightarrow Succinic acid
 (IV) Succinyl-CoA \rightarrow Succinic acid
 Select the correct answer using the codes given below.
 (A) (II) and (III) (B) (I), (II) and (III)
 (C) (II), (III) and (IV) (D) (II) and (IV)

34. Identify X, Y and Z.



X	Y	Z
(A) GTP	NADH	CO_2
(B) FADH	$NADH_2$	GTP
(C) $NADH_2$	$FADH_2$	GTP
(D) CO_2	$NADH_2$	ADP

35. Which of the following is not a part of Krebs's cycle?
 (A) Dehydrogenation
 (B) Decarboxylation
 (C) Substrate level phosphorylation
 (D) Oxidative phosphorylation

(SECTION-B)

36. How many molecules of ATP are produced by substrate level phosphorylation for 1 molecule of glucose?
 (A) 2 (B) 6 (C) 10 (D) 8
37. Intermediate common to fatty acid and carbohydrate oxidation is_____.
 (A) Pyruvate (B) Acetyl-CoA
 (C) Succinate (D) Oxaloacetate
38. Correlate the following with respect to number of ATP produced:
 NADH: 3ATP: : FADH:_____.
 (A) 4 ATP (B) 2 ATP
 (C) 5 ATP (D) 0 ATP
39. Which energy is utilized for production of ATP during oxidative phosphorylation?
 (A) Light energy
 (B) Kinetic energy
 (C) Potential energy
 (D) Energy of oxidation-reduction reaction

40. Which intermediate of Krebs's cycle is withdrawn for synthesis of chlorophyll?
 (A) Succinyl-CoA
 (B) Acetyl-CoA
 (C) a-Ketoglutaric acid
 (D) Oxalosuccinate
41. RQ (respiratory quotient)
 A. Is the ratio of the volume of CO₂ taken in and volume of oxygen evolved in respiration.
 B. Depends upon the type of respiratory substrate used during respiration.
 (A) Only (A) is correct
 (B) Only (B) is correct
 (C) (A) and (B) both are correct
 (D) (A) and (B) both are incorrect
42. Select incorrectly matched pair:
 (A) Glycolysis—EMP pathway
 (B) Pasteur effect — Shifting from aerobic to anaerobic respiration
 (C) RQ of anaerobic respiration — Infinite
 (D) Chemiosmotic hypothesis — Mitchell
43. RQ of germinating fatty acid is
 (A) Unity
 (B) Less than unity
 (C) More than unity
 (D) Infinity
44. $2C_{51}H_{98}O_6 + 145 O_2 \rightarrow 102 CO_2 + 98 H_2O + \text{Energy}$ The RQ of the above reaction is
 (A) 1 (B) 0.7
 (C) 1.45 (D) 1.62
45. Which of the following respiratory substrate has RQ value more than one?
 (A) Tripalmitin (B) Malic acid
 (C) Oxalic acid (D) Both (B) and (C)
46. The volume of oxygen used is more than the volume of CO₂ evolved for which of the following respiratory substrate?
 (A) Glucose
 (B) Protein
 (C) Tripalmitin
 (D) More than one option is correct
47. In some succulent plants like Opuntia, the RQ is zero because
 (A) CO₂ is released without any absorption of O₂
 (B) Oxygen is absorbed but CO₂ is not released
 (C) Rate of photosynthesis is equal to rate of respiration
 (D) More than one option is correct
48. Which intermediate compound of Krebs's cycle is involved in the synthesis of amino acid?
 (A) Malic acid
 (B) Citric acid
 (C) a-Ketoglutaric acid
 (D) Succinic acid
49. Efficiency of aerobic respiration is
 (A) <7% (B) 45%
 (C) About 40% (D) About 50%
50. Given below are two statements : One is labelled as **Assertion A** and the other is labelled as **Reason R** :
Assertion A : ATP is used at two steps in glycolysis.
Reason R : First ATP is used in converting glucose into glucose-6-phosphate and second ATP is used in conversion of fructose-6-phosphate into fructose-1, 6-diphosphate.
 In the light of the above statements, choose the **correct** answer from the options given below :
 (A) Both **A** and **R** are true and **R** is the correct explanation of **A**.
 (B) Both **A** and **R** are true but **R** is NOT the correct explanation of **A**.
 (C) **A** is true but **R** is false.
 (D) **A** is false but **R** is true.