

- Respiration is defined as – **(Pg. 227, E)**
  - Formation of C – C bonds of complex compound
  - Breaking of C – C bonds of complex compound
  - Breaking of C – N bonds of complex compound
  - All of the above
- Respiration results finally to a formation and release of which among the following? **(Pg. 227, E)**
  - NADPH
  - Glucose
  - ATP
  - Both A & C
- The C – C bond of complex compound is broken by which process in respiration? **(Pg. 227, E)**
  - Oxidation
  - Reduction
  - Hydrogenation
  - None of the above
- Assertion – ATP act as energy currency of cell.  
Reason – Energy released through respiration is trapped as bio-chemical energy in the form of ATP. **(Pg. 227, H)**
  - Only Assertion is correct
  - Only Reason is correct
  - Both Assertion and Reason is correct
  - Both Assertion and Reason is wrong
- Which among the following is wrong? **(Pg. 227, E)**
  - Only carbohydrates are oxidised to release energy in the process of respiration.
  - Energy produced in respiration is not released in a single step.
  - ATP can be broken down, as and when energy needs to be utilised.
  - Only ii
  - Only iii
  - Only i
  - None of the above
- ATP stands for? **(Pg. 227, E)**
  - Adenosine 3' – triphosphate
  - Adenosine – 3' – trio phosphite
  - Adenosine 5' – triphosphate
  - Adenosine 5' – triphosphite
- Compounds that are oxidised during the process of respiration is called? **(Pg. 227, E)**
  - Respiratory index
  - Reductory substrate
  - Respiratory quotient
  - Respiratory substrate
- Statement I – Only green plants and cyanobacteria can prepare their own food by photosynthesis.  
Statement II – Only green plants and cyanobacteria can prepare their own food by converting chemical energy to light energy  
Which of the statements is/are true? **(Pg. 227, M)**
  - Only I
  - Only II
  - Both of these
  - None of these
- “Ultimately all the food that is respired for life processes comes from photosynthesis.”  
The above statement is – **(Pg. 227, M)**
  - correct
  - incorrect
  - partially correct
  - can't be said as it is incomplete
- Which of the following cannot be used as respiratory substances in plants under any conditions? **(Pg. 227, E)**
  - fat
  - protein
  - carbohydrate
  - none of these

### 14.1 Do Plants Breathe?

- What are the byproducts of Respiration process? **(Pg. 227, E)**
  - Oxygen
  - Water
  - Carbon dioxide
  - Both B and C
- Respiration is a \_\_\_\_\_ process. **(Pg. 227, E)**
  - Anabolic
  - Catabolic
  - Both Anabolic as well as catabolic
  - None of the above
- Choose the correct equation- **(Pg. 228, E)**
  - $C_6H_{12}O_6 + 12O_2 \rightarrow 6H_2O + 6H_2O + \text{Energy}$
  - $C_6H_{12}O_6 + 3O_2 \rightarrow 2CO_2 + 3H_2O + \text{Energy}$

- C)  $C_6H_{12}O_6 + 6CO_2 + 6H_2O + \text{Energy}$   
 D)  $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + \text{Energy}$   
 14. Respiration organs for plants are-

(Pg. 228, E)

- A) Lenticels  
 B) Stomata  
 C) Woody Bark  
 D) Both of the above A and B  
 15. Which among the following is wrong?  
 (Pg. 228, M)  
 A) Roots, Leaves and Stem respire a for lower than animal do  
 B) For plants to respire, availability of  $O_2$  is a problem as  $O_2$  is not released within the cell during photosynthesis  
 C) There is very little transport of gases from one plant part to another  
 D) None of the above

## 14.2 'Glycolysis'

16. Glycolysis is originated from- (Pg. 228, E)  
 A) Latin word B) French word  
 C) Italian word D) Greek word  
 17. Meaning of glycolysis is-  
 A) Splitting of water  
 B) Splitting of sugar  
 C) Splitting of fat  
 D) Splitting of protein  
 18. Glycolysis is also known as \_\_\_\_\_ pathway.  
 A) ETS B) EMP  
 C) ENP D) ELP  
 19. The scheme of glycolysis was given by-  
 A) Gustav Embden B) Otto Meyerhof  
 C) J. Parnas D) All of the above  
 20. The scheme of glycolysis was given by-  
 A) Gustav Embden B) Alto Meyerhof  
 C) J. Parnas D) All of the above  
 21. Glycolysis occurs in which among the following?  
 A) Aerobic organism  
 B) Anaerobic organism  
 C) Eukaryotes  
 D) All of the above  
 22. Sucrose is converted to \_\_\_\_(i)\_\_\_\_ and \_\_\_\_(ii)\_\_\_\_ using enzyme \_\_\_\_(iii)\_\_\_\_

	(i)	(ii)	(iii)
A)	Glucose	Glucose	Hexokinase
B)	Glucose	Fructose	Hexokinase
C)	Glucose	Glucose	Invertase
D)	Glucose	Fructose	Invertase

23. What is the isomerised produce of glucose - 6 - phosphate in the steps of glycolysis?  
 (Pg 229, E)  
 A) Fructose 1, 6 - bisphosphate  
 B) Fructose -6 - phosphate  
 C) Fructose -1, 3, 6 - triphosphate  
 D) Fructose -3 - phosphate  
 24. Glycolysis is a how many steps of process?  
 (Pg 229, E)  
 A) Ten B) Eight  
 C) Eleven D) Five  
 25. End product of glycolysis is? (Pg 229, E)  
 A) Pyruvate  
 B) Phenol  
 C) Prusic acid  
 D) Phosphoenolpyruvate  
 26. ATP is utilised in which steps of glycolysis.  
 (Pg 229, E)  
 i) Conversion of BPGA to PGA  
 ii) Conversion of glucose into glucose - 6- phosphate  
 iii) Conversion fructose 6 - phosphate to fructose 1, 6 - bisphosphate  
 iv) Conversion of PEP to pyruvate  
 A) Only i B) Only iii  
 C) Both ii and iii D) Only ii, iii, iv  
 27. One molecule of glucose is converted into how many molecules of pyruvic acid?  
 (Pg 229, E)  
 A) 1 B) 2  
 C) 3 D) 4  
 28. When PGAL is converted into BPGA in process of respiration there is formation of?  
 (Pg 229, E)  
 A) 1 molecule of ATP  
 B) 1 molecule of  $H_2O$   
 C) 1 molecule of  $NADH + H^+$   
 D) 1 molecule of ADP

29. PGAL get \_\_\_\_\_ and get converted to BPGA? **(Pg 229, E)**  
 A) reduced B) hydrolysed  
 C) oxidized D) all of these
30. Conversion of 2-phosphoglycerate to phosphoenolpyruvate leads to formation of? **(Pg 229, E)**  
 A) ATP B) NADH<sub>2</sub>  
 C) H<sub>2</sub>O D) ADP
31. What does PGAL stands for? **(Pg 229, E)**  
 A) 3 – Phosphoglyceraldehyde  
 B) 5 – Phosphoglyceraldehyde  
 C) 3 – Phosphoglyceric acid  
 D) 5 – Phosphoglyceric acid
32. What is the full form of PEP? **(Pg 229, E)**  
 A) Pyroenol pyruvate  
 B) Pyruvic pyruvate  
 C) Phosphoenolpyruvate  
 D) None of the above
33. Pyruvic acid is composed of how many carbon atom? **(Pg 229, E)**  
 A) Two B) Three  
 C) Four D) Five
34. Which among the following step in glycolysis yields energy? **(Pg 229, E)**  
 i) Conversion of BPGA to PGA  
 ii) Conversion of fructose – 6 – phosphate to fructose 1, 6 – bisphosphate  
 iii) Conversion of PEP to pyruvic acid  
 iv) Conversion of glucose – 6 – phosphate to fructose – 6 – phosphate  
 A) Both ii and iv B) i, ii, iii  
 C) Both i and iii D) All of the above
35. In glycolysis, fructose 1, 6 – bisphosphate get split into which of the following? **(Pg 229, E)**  
 A) PGAL and BPGA  
 B) Glyceraldehyde – 3 – phosphate and 3 – phosphoglyceric acid  
 C) Glyceraldehyde – 3 – phosphate and Dihydroxy acetone phosphate  
 D) None of the above
36. What is the net gain of ATP from one molecule of glucose in one complete glycolysis? **(Pg 229, M)**  
 A) 4 B) 3  
 C) 5 D) 2
37. How many ATP are utilized in complete process of glycolysis of one glucose molecule? **(Pg 229, M)**  
 A) 2 B) 1  
 C) 3 D) 4
38. How many molecules of NADH are produced in one complete process of glycolysis of one glucose molecule? **(Pg 229, M)**  
 A) 1 B) 2  
 C) 3 D) 4
39. How many molecules of ATP are directly produced in one complete glycolysis of one glucose molecule? **(Pg 229, E)**  
 A) 1 B) 2  
 C) 3 D) 4
40. Which among the following are correct about Glycolysis? **(Pg 229, E)**  
 i) It is the only process that occurs in anaerobes for oxidation of glucose.  
 ii) Glucose undergoes complete oxidation to form pyruvic acid.  
 iii) At the end, there is a net gain of 4 ATP and 2 NADH.  
 A) Only ii B) Both ii and iii  
 C) Only i D) all of the above
41. For further complete oxidation of glucose, pyruvic acid enters to which among the following? **(Pg 229, E)**  
 A) ETS B) Kreb's cycle  
 C) EMP pathway D) None of the above

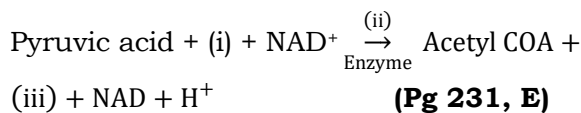
### **14.3 FERMENTATION**

42. Fermentation occurs when there is **(Pg 230, E)**  
 A) Complete supply of oxygen  
 B) No supply of oxygen  
 C) Complete supply of water  
 D) No supply of water
43. In alcoholic fermentation, pyruvate is converted to which among the following? **(Pg 230, E)**  
 A) Ethanol, CO<sub>2</sub>, NADH  
 B) CO<sub>2</sub> and Methanol  
 C) CO<sub>2</sub> and Ethanol only  
 D) CO<sub>2</sub> and Carboxylic acid
44. Which enzyme is responsible for alcoholic fermentation? **(Pg 230, E)**  
 A) Pyruvic acid decarboxylase

- B) Lactate dehydrogenase  
C) Alcohol dehydrogenase  
D) More than one option is correct
45. Which enzyme is involved in lactic acid fermentation? **(Pg 230, E)**  
A) Pyruvic acid decarboxylase  
B) Lactate dehydrogenase  
C) Alcohol dehydrogenase  
D) More than one option is correct
46. Choose the correct option **(Pg 230, M)**  
In the fermentation process:-  
i) Oxidation of ADP to ATP takes place  
ii) Reduction of ATP to ADP takes place  
iii) Reducing agent NADH + H<sup>+</sup> is reoxidised to NAD<sup>+</sup>  
iv) Formation of NADH + H<sup>+</sup> takes place by oxidation  
A) ii and iv                      B) ii and iii  
C) Both i and iii                D) Only iii
47. How many statements are correct about fermentation? **(Pg 230, M)**  
i) Very low amount of energy is released, < 7% of energy in glucose is released in fermentation  
ii) In animal cells, when oxygen is inadequate acetic acid is formed during respiration  
iii) It is dangerous process as it leads to acid and alcohol formation.  
A) 0                                  B) 1  
C) 2                                  D) 3
48. The range beyond which yeasts poison themselves to death in alcohol fermentation when the concentration of alcohol reaches to? **(Pg 230, E)**  
A) 13%                              B) 15%  
C) 12%                              D) 17%
49. Which among the following is the processes steps in, complete cellular respiration which don't need oxygen molecule (O<sub>2</sub>)? **(Pg 231, E)**  
A) Glycolysis  
B) Tricarboxylic acid cycle  
C) ETC  
D) Both A and B

## **14.4 Aerobic Respiration**

50. Complete the following reaction-



- A) (i) O<sub>2</sub> (ii) Mg<sup>2+</sup> (iii) CO<sub>2</sub>  
B) (i) O<sub>2</sub> (ii) Na<sup>+</sup> (iii) H<sub>2</sub>O  
C) (i) CoA (ii) Na<sup>+</sup> (iii) CO<sub>2</sub>  
D) (i) CoA (ii) Mg<sup>2+</sup> (iii) CO<sub>2</sub>
51. Pyruvate enters to the mitochondrial matrix and undergoes. **(Pg 231, E)**  
A) Reductive decarboxylation  
B) Oxidative carboxylation  
C) Reductive carboxylation  
D) Oxidative decarboxylation
52. Which enzyme catalyse the reaction going on in mitochondrial matrix in respiration? **(Pg 231, E)**  
A) Pyruvate carboxylase  
B) Lactate dehydrogenase  
C) Alcohol dehydrogenase  
D) Pyruvate dehydrogenase
53. Who elucidated Tricarboxylic Acid cycle? **(Pg 231, E)**  
A) Johns Elen                      B) Hans Krebs  
C) Meyerhoff                        D) Elena Parker
54. Formation of Acetyl coenzyme A from Pyruvate in mitochondrial matrix yields which among the following? **(Pg 231, E)**  
A) CO<sub>2</sub>                                B) H<sub>2</sub>O  
C) NADPH + H<sup>+</sup>                    D) Both A and C
55. How many molecules of NADH + H<sup>+</sup> are produced when pyruvate converts to Acetyl CoA in TCA cycle? **(Pg 231, E)**  
A) 0                                    B) 1  
C) 2                                    D) 3

### **14.4.1 'Tricarboxylic Acid Cycle'**

56. Where does TCA cycle occurs? **(Pg 231, E)**  
A) Cytoplasm  
B) Mitochondria cell wall  
C) Mitochondrial matrix  
D) Chloroplast
57. What is the first product of TCA cycle? **(Pg 231, E)**  
A) Acetyl CoA                      B) Citric acid  
C) Isocitric acid                    D) OAA
58. What is the 1<sup>st</sup> step of TCA cycle? **(Pg 231, E)**  
A) Formation of citrate from isocitrate

- B) Formation of citrate from the acetyl coenzyme A  
 C) Formation of citrate from decarboxylation of succinic acid  
 D) None of the above
59. Which enzyme catalyses the first step of TCA cycle? **(Pg 231, E)**  
 A) Citrate Synthase  
 B) Citrate Reductase  
 C) Citrate Oxidase  
 D) None of the above
60. What is the first member of TCA cycle that accepts Acetyl CoA? **(Pg 231, E)**  
 A) Citrate  
 B) CoA  
 C) Oxaloacetic acid  
 D) Both A and C
61. Which among the following is synthesised during the conversion of succinyl – CoA to succinic acid in TCA cycle? **(Pg 232, E)**  
 A)  $\text{FADH}_2$                       B) GTP  
 C)  $\text{NADH}_2$                       D) ATP
62. How many total  $\text{CO}_2$  molecule are released from Pyruvate to completion of TCA cycle? **(Pg 232, E)**  
 A) 0                                  B) 1  
 C) 2                                  D) 3
63. How many total  $\text{NADH}_2$  are produced from pyruvate to completion of TCA cycle? **(Pg 232, E)**  
 A) 2                                  B) 3  
 C) 4                                  D) 5
64. How many  $\text{FADH}_2$  are produced in TCA cycle? **(Pg 232, E)**  
 A) 1                                  B) 2  
 C) 3                                  D) 4
65. One molecule of glucose synthesizes how many molecules of  $\text{NADH} + \text{H}^+$  at the end of TCA cycle? **(Pg 232, E)**  
 A) 6                                  B) 7  
 C) 8                                  D) 10
66. How many molecules of  $\text{FADH}_2$  are yielded from one glucose molecule at the end of TCA cycle? **(Pg 232, E)**  
 A) 1                                  B) 2  
 C) 3                                  D) 4

67. How many net ATP molecules are directly yielded from complete oxidation of one glucose (including ATP of TCA)?

**(Pg 232, E)**

- A) 4                                  B) 2  
 C) 3                                  D) 8

68. Which among the following is wrong?

**(Pg 232, E)**

- (i) Glycolysis occurs in all living organism.  
 (ii) TCA cycle and ETS only occurs in aerobes.  
 (iii) Complete oxidation of pyruvate occurs by removal of all hydrogen atom in TCA cycle.

- A) (i)                                  B) (ii)  
 C) (iii)                              D) None of the above

### **14.4.2 Electron Transport System (ETS) and Oxidative Phosphorylation**

69. ETS occurs in which place? **(Pg 232, E)**

- A) Outer membrane of mitochondria  
 B) Cytoplasm  
 C) Inner membrane of mitochondria  
 D) Matrix of mitochondria

70. Energy stored in  $\text{NADH} + \text{H}^+$   $\text{FADH}_2$  are released in ETS through \_\_\_\_\_.

**(Pg 232, E)**

- A) Reduction of these molecules  
 B) Oxidation of these molecules  
 C) Hydrolysis of these molecules  
 D) Both A & B

71. ETS stands for **(Pg 232, E)**

- A) Electrical Transport System  
 B) Electron Transmission System  
 C) Electron Transport System  
 D) None of the above

72. When the electrons are passed onto  $\text{O}_2$  in ETS it leads to formation of what?

**(Pg 232, E)**

- A)  $\text{CO}_2$                               B) ATP  
 C)  $\text{H}_2\text{O}$                               D)  $\text{NADH} + \text{H}^+$

73. Ubiquinone is located at \_\_\_\_\_.

**(Pg 233, E)**

- A) inner membrane of mitochondria  
 B) outer membrane of mitochondria  
 C) inner membrane of nucleus

- D) outer membrane of nucleus
74. Ubiquinone receives electrons from which of the following? **(Pg 233, E)**
- From NADH produced in mitochondrial matrix during TCA.
  - From  $\text{FADH}_2$  produced during oxidation of succinate in TCA.
- A) Only i                      B) Only ii  
C) Both i and ii              D) None of the above
75. Electrons from NADH produced during TCA are oxidised by which enzyme? **(Pg 233, E)**
- A)  $\text{NAD}^+$  hydrogenase  
B) NADH dehydrogenase  
C)  $\text{NAD}^+$  hydroxylase  
D) NADH dehydroxylase
76. The reduced ubiquinone are also called what? **(Pg 233, E)**
- A) Ubiquinate                  B) Ubiquinase  
C) Ubiquinal                  D) Ubiquinol
77. Cytochrome c is \_\_\_\_\_? **(Pg 233, E)**
- A) Lipid                          B) Carbohydrate  
C) Protein                        D) Fat
78. What is the function of cytochrome c? **(Pg 233, E)**
- A) Act as donor of electron  
B) Passage for movement of  $e^-$   
C) Act as a receptor of  $e^-$  between complex II and III  
D) Act as a mobile carrier for  $e^-$  transfer between complex III and IV
79. What does cytochrome c oxidase complex contains? **(Pg 233, E)**
- A) Cytochrome a  
B) Cytochrome  $a_3$   
C) Two copper centres  
D) All of the above
80. When  $e^-$  passes from complex I to IV in ETS they are coupled to \_\_\_\_\_ for ATP production from ADP. **(Pg 233, E)**
- A) Cytochrome c              B) Cytochrome bc1  
C) ATP synthase              D) Both A and B
81. Oxidation of one molecule of  $\text{NADH}_2$  produces how many molecules of ATP? **(Pg 233, E)**
- A) 1                                  B) 2  
C) 3                                  D) 4
82. Oxidation of 2 molecule of  $\text{FADH}_2$  produces how many molecules of ATP? **(Pg 233, E)**
- A) 1                                  B) 2  
C) 3                                  D) 4
83. Which among the following is the role of  $\text{O}_2$  in whole respiration process? **(Pg 233, M)**
- Act as hydrogen removal from the system.
  - Act as final hydrogen acceptor.
  - It bond with C atom and released  $\text{CO}_2$ , one of the byproduct of respiration.
- A) ii and iii                      B) iii only  
C) Both i and ii                  D) All of the above
84. ETS of respiration process is called **(Pg 233, E)**
- A) Reductive phosphorylation  
B) Oxidative phosphorylation  
C) Oxidative photophosphorylation  
D) Both B and C
85. Which among the following is wrong about ATP synthase? **(Pg 234, E)**
- It is also called complex V.
  - This is used to synthesis ATP by utilising the energy released during ETS.
  - It works on the basis of proton gradient.
  - It consist of two major components,  $\text{F}_1$  and  $\text{F}_0$ .
- A) Only ii                          B) Both i and iii  
C) i and iv                        D) None of the above
86. What is  $\text{F}_1$  in ATP synthase? **(Pg 234, E)**
- A) It contain a site for protein synthesis.  
B) It contain a site for ADP synthesis from ATP.  
C) It contain a site for ATP production from ADP.  
D) It act as a channel through which proton cross the inner membrane.
87. What is the role of  $\text{F}_0$  in ATP synthase? **(Pg 234, E)**
- It act as a channel through which  $e^-$  crosses the inner membrane.
  - It act as a channel through which proton crosses the inner membrane.
  - It act as a mobile protein carrier of electron across the inner membrane.
  - Acts as site for ATP synthesis



88. For each ATP produced, \_\_\_\_\_ passes through  $F_0$  from intermembrane space to the matrix down the electrochemical proton gradient. **(Pg 234, E)**

- A)  $H^+$  B)  $2H^+$   
C)  $3H^+$  D)  $4H^+$

## 14.5 The Respiratory Balance Sheet

89. What is the net gain of ATP molecules during aerobic respiration of one glucose molecule? **(Pg 234, E)**

- A) 40 ATP B) 38 ATP  
C) 36 ATP D) 34 ATP

90. Match the following **(Pg 234, H)**

1	Glycolysis	i	Mitochondrial matrix
2	TCA	ii	Cytoplasm
3	ETC	iii	Inner membrane of mitochondria

- A) 1-i, 2-ii, 3-iii  
B) 1-ii, 2-i, 3-iii  
C) 1-iii, 2-ii, 3-i  
D) 1-ii, 2-iii, 3-i

91. The respiratory balance sheet is calculated on some assumptions.

Which of the following assumption is correct? **(Pg 234, M)**

- A) The pathway is sequential, with series of glycolysis, ETS and TCA cycle in the same order for a given molecule.  
B) NADH is transferred to chloroplast where oxidative phosphorylation occurs, leading to formation of 3 ATP  
C) Only glucose is the substrate and none other substrate or intermediate enters or leaves the pathway  
D) None of these

92. In the balance sheet of fermentation, net gain is – **(Pg 234, M)**

- A) 12 ATP molecules B) 38 ATP molecules  
C) 2 ATP molecules D) 8 ATP molecules

93. Oxidation of NADH to  $NAD^+$  is –

**(Pg 235, M)**

- A) Slower in fermentation than aerobic respiration

B) Faster in fermentation than aerobic respiration

C) Equal in fermentation and aerobic respiration

D) Cannot be compared

## 14.6 Amphibolic Pathway

94. Which among the following is wrong?

**Pg 235, M)**

- i) Other than glucose, no other substrates can be used in respiratory process.  
ii) Respiratory pathway is an amphibolic pathway.  
iii) Different substrates enters at different stage in respiratory pathway.

- A) Only i B) Only iii  
C) Only ii D) Both i and ii

95. Which among the following is wrong?

**Pg 235, M)**

- i) Other than glucose, no other substrates can be used in respiratory process.  
ii) Respiratory pathway is an amphibolic pathway.  
iii) Different substrates enters at different stage in respiratory pathway.

- A) Only i B) Only iii  
C) Only ii D) Both i and ii

96. Fats as a respiratory substrate converts to which compound first? **Pg 235, M)**

- A) Dihydroxy Aceton Phosphate  
B) Glycerol  
C) Fatty acid  
D) Both B and C

97. Match the following-

**Pg 235, H)**

1	Amino acids	i	Pyruvic acid
2	Fatty acid	ii	Dihydroxy Acetone Phosphate
3	Glycerol	iii	Acetyl CoA

- A) 1-i, 2-iii, 3-ii B) 1-ii, 2-i, 3-iii  
C) 1-iii, 2-i, 3-ii D) 1-ii, 2-iii, 3-i

98. Choose the correct according to the correct sequence (from substrate to end product)

(Pg 235, M)

- i) Glucose 6 – phosphate
  - ii) Pyruvic acid
  - iii) Carbohydrate
  - iv) Fructose–1, 6-bisphosphate
  - v) Glucose
  - vi) Dihydroxy Acetone Phosphate  $\rightleftharpoons$  Glyceraldehyde 3 – phosphate
- A) i, iii, iv, v, vi, ii      B) iii, iv, v, ii, i, vi  
C) iii, v, i, ii, iv, vi      D) iii, v, i, iv, vi, ii

### 14.7 Respiratory Quotient

99. Which statement is true about RQ?

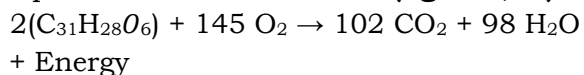
(Pg 236, M)

- i) It is also called respiratory ratio.
  - ii) It is the volume of O<sub>2</sub> released over the volume of CO<sub>2</sub> evolved during respiration.
  - iii) RQ of diff. substrate is different.
- A) Only i                      B) Only iii  
C) Both i and iii          D) All of the above

100. Choose the correct. (Pg 236, M)

- A) RQ = volume of CO<sub>2</sub> evolved/volume of O<sub>2</sub> consumed  
B) RQ = volume of O<sub>2</sub> consumed/volume of CO<sub>2</sub> evolved  
C) RQ = volume of O<sub>2</sub> evolved/volume of CO<sub>2</sub> consumed  
D) None of the above

101. What will be the RQ for the following equation (Pg 236, M)



- A) 0.9                      B) 1  
C) 0.8                      D) 0.7

102. What is RQ if proteins are used as a respiratory substrate? (Pg 236, E)

- A) 1                          B) 0.8  
C) 0.9                      D) 0.7

103. What is RQ if carbohydrates are used as a respiratory substrate? (Pg 236, E)

- A) 1                          B) 0.8  
C) 0.7                      D) 0.9

104. Match the following- (Pg 236, E)

1	NADH + H <sup>+</sup>	i	1 ATP
2	FADH <sub>2</sub>	ii	2 ATP
3	GTP	iii	3 ATP

- A) 1-i, 2-ii, 3-iii          B) 1-i, 2-iii, 3-ii  
C) 1-iii, 2-ii, 3-i          D) 1-ii, 2-i, 3-iii

105. In ETS O<sub>2</sub> accept the electrons and get reduced to which of the following?

(Pg 236, E)

- A) Water                      B) Carbon dioxide  
C) Palmitic acid              D) None of the above

106. What is the final end product of TCA cycle? (Pg 236, E)

- A) 3 NADH + H<sup>+</sup>          B) 1 ATP  
C) 1 FADH<sub>2</sub>                  D) All of the above

107. How many ATPs are produced through ETS only from 1 molecule of 3-phosphoglycerate in aerobic respiration

(Pg 236, E)

- A) 12                          B) 14  
C) 16                          D) 15



## ANSWER KEY RESPIRATION IN PLANTS

Q	01	02	03	04	05	06	07	08	09	10
Ans	B	C	A	C	C	C	D	A	A	D
Q	11	12	13	14	15	16	17	18	19	20
Ans	D	C	D	D	B	D	B	B	D	D
Q	21	22	23	24	25	26	27	28	29	30
Ans	D	D	B	A	A	C	B	C	C	C
Q	31	32	33	34	35	36	37	38	39	40
Ans	A	C	B	C	C	D	A	D	D	C
Q	41	42	43	44	45	46	47	48	49	50
Ans	B	B	C	D	C	D	C	A	D	D
Q	51	52	53	54	55	56	57	58	59	60
Ans	D	D	B	A	B	C	B	B	A	C
Q	61	62	63	64	65	66	67	68	69	70
Ans	B	D	C	A	C	B	A	D	C	B
	71	72	73	74	75	76	77	78	79	80
Ans	C	C	A	C	B	D	C	D	D	C
Q	81	82	83	84	85	86	87	88	89	90
Ans	C	D	C	B	D	C	B	B	C	B
Q	91	92	93	94	95	96	97	98	99	100
Ans	C	C	A	A	B	D	A	D	C	A
Q	101	102	103	104	105	106	107			
Ans	D	C	A	C	D	D	B			