

**Topic :- Respiration in Plants**

- 1 **(c)**  
During Krebs' cycle as a result of formation of 6NADH, 18 ATP are produced through ETS in mitochondria
- 2 **(c)**  
In glycolysis, one molecule of glucose changes into two molecules of pyruvic acid. Glycolysis takes place in cytoplasm.
- 3 **(a)**  
Electron transport system occurs in inner mitochondrial membrane. Electron from NADH produced in the mitochondrial matrix during citric acid cycle are oxidised by an NADH dehydrogenase (complex) and electrons are then transferred to ubiquinone located within the inner membrane
- 4 **(b)**  
Krebs' cycle is also known as citric acid cycle (first compound of Krebs' cycle) or Tricarboxylic acid cycle (TCA). This cycle takes place in the matrix of mitochondria because all necessary enzymes are found in the matrix of mitochondria.
- 5 **(c)**  
Ratio of the volume of carbon dioxide liberated to the volume of oxygen absorbed during respiration is called Respiratory Quotient (RQ)  
Carbohydrate - One  
Fat, protein - Less than one  
Organic acid - More than one  
Succulents - Zero
- 6 **(d)**  
Calorie is the unit of heat
- 7 **(c)**  
*Aspergillus* is used to prepare the Roquefort cheese.
- 8 **(c)**  
Cellular respiration is the process, in which energy stored in a glucose molecule is released by oxidation. Hydrogen atoms are lost by glucose and gained by oxygen.
- 9 **(a)**  
The term 'glycolysis' has originated from the greek words, glycos for sugar and lysis for splitting
- 10 **(d)**  
Mitochondria are called power house of cell, as the food material is gradually oxidised and

energy generated is stored in the form of ATP. The enzymes for Krebs' cycle (aerobic respiration) and fatty acid oxidation are found in the matrix of mitochondria.

- 11 **(b)**  
Incomplete breakdown of sugar in anaerobic respiration forms alcohol and dioxide.
- 12 **(c)**  
The total energy trapped per gm mole of glucose is 1292 kJ or 309.7 kcal with an efficiency of 45%
- 13 **(b)**  
Glycolysis is an essential and first path of respiration. It is common in both aerobic and anaerobic respiration and occurs in the cytosol of all living cells of prokaryotes as well as eukaryotes.
- 14 **(b)**  
Synthesis is anabolism
- 15 **(b)**  
Oxalosuccinic acid -6 C-compound  
Malate -4 C-compound  
 $\alpha$ -ketoglutarate -5 C-compound  
Pyruvic acid -3 C-compound
- 16 **(d)**  
Respiratory chain for oxidative phosphorylation is located in the inner membrane of mitochondrial envelope.
- 17 **(d)**  
In both lactic acid and alcohol fermentation 7% of the energy in glucose is released and all of it is trapped as high energy bonds of ATP
- 18 **(d)**  
There is a sequential, orderly pathway functioning, with one substrate forming the next and with glycolysis TCA cycle and ETS pathway following one after another
- 19 **(a)**  
Sucrose is converted into glucose and fructose by the enzyme invertase and these two monosaccharide readily enter the glycolytic pathway
- 20 **(b)**  
Triolein is unsaturated glyceride, whereas tripalmitin is a saturated glyceride. The required number of oxygen molecule for oxidation of unsaturated glyceride is always more than for saturated glyceride.

<b>ANSWER-KEY</b>										
<b>Q.</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>A.</b>	<b>C</b>	<b>C</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>A</b>	<b>D</b>
<b>Q.</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>A.</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>D</b>	<b>D</b>	<b>D</b>	<b>A</b>	<b>B</b>

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