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| **Neha Malhotra**  **R.L. Institute M: 9416974837**  **Class : XI**  **“RESPIRATION IN PLANTS”** |

**Max Time : 1 hr Worksheet – 1 Max Marks = 100**

**(Except ETS and Oxidative Phosphorylation)**

1. The main purpose of respiration is to
2. convert potential energy to kinetic energy
3. convert kinetic energy to potential energy
4. create energy in the cell
5. catabolize the glucose molecule in such a way that most of the liberated energy can be coupled for ATP synthesis
6. Which of the following steps in Kreb’s cycle indicates substrate level phosphorylation?
7. Conversion of succinyl acid to -ketoglutrate acid
8. Conversion of succinic acid to malic acid
9. Conversion of succinyl Co-A to succinyl acid
10. Conversion of malic acid to oxaloacetate
11. In which of the following, reduction of NAD does not occur?

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| a) Isocitric acid to -ketoglutrate acid | b) Malic acid to Oxaloacetate |
| c) Pyruvic Acid to Acetyl Co-A | d) Succinic acid to Fumaric acid |

1. Glycolysis is also known as

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| a) EMP pathway | b) PME pathway | c) CMT pathway | d) TMC pathway |

1. During Kreb’s cycle \_\_\_A\_\_\_ NADH , \_\_\_\_B\_\_\_\_ ATP is produced through ETS in mitochondria. Choose the correct pair from the option given below.

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| a) A – 2 ; B – 4 | b) A – 4 ; B – 2 | c) A – 6 ; B – 18 | d) A – 2 ; B – 8 |

1. Conversion of glucose to glucose-6-phosphate, the first irreversible reaction of glycolysis, is catalyzed by

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| a) hexokinase | b) enolase | c) phosphofructokinase | d) aldolase |

1. In animal cells, like muscle, during exercise when O2 is inadequate for cellular respiration, pyruvic acid is reduced into lactic acid by

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| a) O2 | b) carboxylation |
| c) lactate dehydrogenase | d) none of the above |

1. Glucose-6-phosphate Fructose-6-phosphate. Identify the enzyme used in the above reaction from the options given below

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| a) Aldolase | b) phosphofructokinase | c) Hexokinase | d) Isomerase |

1. RQ for anaerobic respiration is :

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| a) 0.7 | b) 0.9 | c) unity | d) infinity |

1. In glycolysis, NADH + H+ is formed from NAD, when
2. 3-phosphoglyceraldehyde (PGAL) is converted to 1, 3-bisphosphoglycerate(BPGA)
3. triose phosphate is converted to 2-phosphoglycerate
4. 2-phosphoglycerate is converted to 2-phosphopyruvate
5. 2-phosphopyruvate is converted to 2-pyruvic acid
6. In which of the following conversions ATP synthesis occurs during glycolysis
7. Glucose Glucose-6-phosphate
8. Fructose-6-phosphate Fructose-1, 6-bisphosphate
9. 1,3-bisphosphoglyceric acid (BPGA) 3-phosphoglyceric acid (PGA)
10. All of the above
11. 2NADH (H+) produced during aerobic glycolysis yield

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| a) 6 ATP molecules | b) 4 ATP molecules |
| c) 8 ATP molecules | d) None of these |

1. The Respiratory Quotient (RQ) or respiratory capacity is :

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| a) RQ = | b) RQ = |
| c) RQ = | d) RQ = |

1. In the production of ethanol, pyruvic acid is first converted to acetalhyde by the enzyme

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| a) alcohol dehydrogenase | b) alcohol oxidase |
| c) pyruvate dehydrogenase | d) pyruvate decarboxylase |

1. In succulent plants like Opuntia, the RQ value will be :

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| a) less than one | b) zero | c) more than one | d) infinity |

1. In oxidative decarboxylation, only a carbon molecule of pyruvic acid gets oxidized, other two carbon molecules go to form:

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| a) Acetyl Co-A | b) CO2 | c) citric acid | d) Both (a) and (b) |

1. The enzyme \_\_\_\_\_\_\_ used to catalyze condensation of acetyl group with oxaloacetate acid to yield citric acid :

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| a) Citrate permeate | b) Citrate synthetase | c) Citrate berate | d) Citrate malilate |

1. -ketoglutrate acid, an intermediary compound of Kreb’s cycle is a :

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| a) 5 carbon compound | b) 6 carbon compound |
| c) 4 carbon compound | d) 3 carbon compound |

1. Kreb’s cycle is completed with the formation of :

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| a) Citric acid | b) Oxaloacetate | c) Succinic acid | d) Malic acid |

1. When 2 molecules of Acetyl-CoA enter the TCA cycle, net gain at the end of this cycle is :

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| a) 2 NADH2 + 2 FADH2 + 1 GTP | b) 3 NADH2 + 2 FADH2 + 2 GTP |
| c) 6 NADH2 + 2 FADH2 + 2 GTP | d) 3 NADH2 + 1 FADH2 + 4 GTP |

1. What is the RQ for glucose?

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| a) 1 | b) less than one | c) more than one | d) infinite |

1. Net gain of ATP from one molecule of glucose in glycolysis is

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| a) 2 | b) 4 | c) 5 | d) 2 |

1. Pyruvate Ethyl Alcohol + CO2

The above reaction needs two enzymes which are

1. Pyruvate decarboxylase and alcohol dehydrogenase
2. pyruvate decarboxylase and enolase
3. pyruvate decarboxylase and pyruvate kinase
4. pyruvate carboxylase and aldolase
5. In yeast during anaerobic respiration, how many glucose molecules are required for the production of 38 ATP molecules?

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| a) 1 | b) 2 | c) 19 | d) 38 |

1. Refer to the given equation : the value of RQ is :

2(C51 H98 O6) + 145 O2 102 CO2 + 98 H2O

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| a) 1 | b) 0.7 | c) 1.45 | d) 1.62 |