1. Which of the following enzymes are not involved in galactose metabolism?

(a) Galactokinase

(b) Glucokinase

(c) Galactose-1-Phosphate Uridyltransferase

(d) UDP-Galactose 4- epimerase

Sol. (b) Glucokinase.

2. Which of the following enzymes leads to a glycogen storage disease known as Tarui's disease?

(a) Glucokinase

(b) Pyruvate Kinase

(c) Phosphofructokinase

(d) Phosphoglucomutase

Sol. (c) Phosphofructokinase.

3. Which of the following enzymes is defective in galactosemia- a fatal genetic disorder in infants?

(a) Glucokinase

(b) Galactokinase

(c) UDP-Galactose 4- epimerase

(d) Galactose-1-Phosphate Uridyltransferase

Sol. (d) Galactose-1-Phosphate Uridyltransferase.

4. Which of the following enzyme deficiency leads to hemolytic anaemia?

(a) Glucokinase

(b) Pyruvate Kinase

(c) Phosphoglucomutase

(d) Phosphofructokinase

Sol. (b) Pyruvate Kinase.

5. Which of the following glucose transporters are important in fructose transport in the intestine?

(a) GLUT5

(b) GLUT3

(c) GLUT4

(d) GLUT7

Sol. (a) GLUT5.

6. Which of the following is a tricarboxylic acid?

(a) Acetic acid

(b) Succinic acid

(c) Oxaloacetic acid

(d) Citric acid

Sol.(d) Citric acid.

7. Which of the following enzymes plays an important role in tumour metabolism?

(a) Glucokinase

(b) Pyruvate Kinase M2

(c) Phosphoglucomutase

(d) Phosphofructokinase

Sol. (b) Pyruvate Kinase M2.

8. Which of the following metabolites negatively regulates pyruvate kinase?

1.

(a) Citrate

(b) Alanine

(c) Acetyl CoA

(d) Fructose-1,6-Bisphosphate

Sol. (b) Alanine

9. The glycerol phosphate shuttle functions in_____.

(a) Lipid catabolism

(b) Triglyceride synthesis

(c) Anaerobic glycolysis for the regeneration of NAD

(d) Aerobic glycolysis to transport NADH equivalents resulting from glycolysis into mitochondria.

Sol. (d) Aerobic glycolysis to transport NADH equivalents resulting from glycolysis into mitochondria.

10. In muscles, the pyruvate is converted into lactate. Find the correct statement

(a) During lactate formation, NADH is reconverted into NAD

(b) During the product of lactate two ATP are produced

(c) Lactate is the substrate from the downstream pathway

(d) Lactate acts as the substrate for the formation of amino acid

Sol. (a) During lactate formation, NADH is reconverted into NAD.

11. Which of the following glycolytic enzyme is inhibited by an accumulation of long-chain fatty acid in the liver?

(a) Glucokinase

(b) Hexokinase

(a) Pyruvate kinase

(d) Phosphofructokinase

Sol. (a) Glucokinase.

12. Which of the following statements is known as the rate-limiting step in glycolysis?

(a) Enolase

(b) Phosphofructokinase

(c) Phosphohexose isomerase

(d) Glyceraldehyde-3-phosphate dehydrogenase

Sol. (b) Phosphofructokinase.

13. Which of the following hormones decreases blood glucose and increases the uptake of glucose in various tissues like skeletal muscle, adipose tissues?

(a) Insulin

(b) Cortisol

(a) Glucagon

(d) Epinephrine

Sol. (a) Insulin.

14. What is the net gain of ATP during the conversion of glucose to pyruvate?

(a) 2 ATP

(b) 4 ATP

(c) 6 ATP

(d) 1 ATP +1 GTP

Sol. (a) 2 ATP.

15. Which of the following hormones is responsible for increasing gluconeogenesis in the liver during prolonged starvation?

(a) TSH

(b) Insulin

(c) Thyroxine

(d) Glucagon

Sol. (d) Glucagon.