# Carbohydrates MCQ

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Biochemistry

# Introduction

Welcome to **Carbohydrates MCQ**, a comprehensive question bank designed to enhance your understanding of microbiology. This ebook contains over 800 multiple-choice questions (MCQs) covering a wide array of topics within the field of carbohydrates and metabolism.

Whether you're a medical student preparing for exams, a postgraduate aspirant aiming for success in competitive entrance tests, or a healthcare professional looking to refine your expertise, this book will serve as an invaluable resource in your learning journey. The questions in this ebook are structured to reflect the patterns seen in major medical entrance exams such as NEET PG, USMLE, AIIMS, and others, making it a perfect tool for self-assessment and revision.

**Purpose**

The primary goal of this ebook is to provide a reliable and extensive resource that students and professionals can use to test their knowledge, improve their diagnostic skills, and solidify key microbiological concepts. With the included detailed answers and explanations, this book goes beyond just helping you answer questions — it enables you to understand the reasoning behind each answer, facilitating deeper learning.

**How This Ebook Can Help You**

- **For Students**: The MCQs in this book are designed to match the rigor and format of real exam questions. By practicing regularly, you'll not only enhance your knowledge but also gain confidence in approaching exam challenges.
- **For Professionals**: This ebook helps professionals stay updated with the latest developments in carbohydrates in medical science and refresh critical concepts required in day-to-day practice.
- **For Educators**: Teachers and educators can use this collection to formulate quizzes, exams, or as supplementary teaching material for their students.

**Compilation and Sources**

This ebook is a compilation of publicly available online content. Each question has been carefully selected and curated to ensure relevance and accuracy. While this material is sourced from multiple platforms, it has been reorganized and edited to provide a streamlined learning experience.

We hope this book becomes an essential part of your academic and professional toolkit, helping you achieve your goals in Biochemistry.

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# Questions

1-: Arrange the following 4 enzymes of gluconeogenesis in sequence: A. Pyruvate carboxylase B. Glucose - 6 - phosphatase C. Phosphoenol pyruvate carboxy kinase D. Fructose 1,6 Bisphosphatase

1: D-C-A-B

2: A-C-D-B

3: B-A-D-C

4: C-D-B-A

2-: Main source of energy derived from

1: Fat

2: Glycogen

3: Lactate

4: Ketone

3-: Von Gierke&;s occurs due to deficiency of

1: Glucose-6-phosphatase

2: Liver Phosphorylase

3: Muscle phosphorylase

4: Debranching enzyme

4-: Complex polysaccharides are converted to glucose and absorbed by the help of:

1: Na+k+ATPase

2: Sucrase

3: Enterokinase

4: Carboxypeptidase

5-: After overnight fasting, levels of glucose transpoers reduced in

1: Brain cells

2: RBCs

3: Adipocytes

4: Hepatocytes

6-: Polysaccharides are

1: Polymers

2: Acids

3: Proteins

4: Oils

7-: A genetic disorder renders fructose 1,6 -- bisphosphates in liver less sensitive to regulation by fructose 2,6 -- bi-phosphate. All of the following metabolic changes are observed in this disorder except:

1: Level of fructose 1,6--biphosphate is higher than normal

2: Level of fructose 1,6 -- biphosphate is lower than normal

3: Less pyruvate is formed

4: Less ATP is formed

8-: Which of the following enzyme of TCA cycle is analogous to Pyruvate dehydrogenase complex?

1: Isocitrate dehydrogenase

2: Alpha ketoglutarate dehydrogenase

3: Malate dehydrogenase

4: Succinate dehydrogenase

9-: A 6-month-old male baby comes with vomiting, lethargy and severe jaundice when weaning was staed with fruit juice. Which of the following enzymes is defective?

1: Fructokinase

2: Aldolase A

3: Aldolase B

4: Sucrase

10-: An eight-month-old female infant presented with recurrent episodes of hypoglycemia, especially if time interval of feeding is increased. Dicarboxylic acid is present in the urine. Urine ketone bodies is negative. The child responded well to IV Glucose, less fat and more carbohydrate diet, frequent feeding. The child was diagnosed to be MCAD deficiency. What is the reason for hypoglycemia?

1: Increased dicarboxylic acid inhibit glycogenolysis

2: Lack of ATP to support gluconeogenesis

3: Lack of acetyl-CoA to favour glycogenolysis

4: Glycogen stores are inadequate in infants

11-: Biosynthesis of glucuronic acid requires the

1: Oxidation of UDP glucose

2: Oxidation of glucose 6-phosphate

3: Oxidation of 6-phophoguconate

4: Oxidanation of glucose

12-: NAD acts as a cofactor for

1: Citrate synthetase

2: Isocitrate dehyrogenase

3: a ketoglutarate dehyrogenase

4: Malate dehydrogenase

13-: True statement regarding insulin:

1: Produced by alpha cells of pancreas

2: Two polypeptide chains are bound by disulfide linkages

3: Shifts potassium outside the cell

4: S.c insulin tl/2 is 60 mins

14-: Which helps in the production of more glucose?

1: Pyruvate kinase

2: Pyruvate carboxylase

3: PDH

4: Pyruvate decarboxylase

15-: True about Type 1 diabetes mellitus

1: Decreased hepatic Glucose output

2: Increase glucose uptake

3: Increased lipolysis

4: Decreased protein catabolism

16-: All of the following are Glycoproteinoses, EXCEPT

1: Fucosidosis

2: Sanfilippo A syndrome

3: Sialidosis

4: a-mannosidosis

17-: Glucose detection can be done by the all except

1: Glucose oxidase

2: Ferric Chloride test

3: Dextrostix

4: Follin and Wu method

18-: After overnight fasting, levels of glucose transporters reduced in:

1: Brain cells

2: RBCs

3: Adipocyte

4: Hepatocyte

19-: One of the following molecules acts as a mobile electron carrier in the respiratory chain

1: Ubiquinone

2: FADH2

3: FeS

4: Cytochrome b

20-: Forbe&;s disease is due to deficiency of

1: Branching enzyme

2: Debranching enzyme

3: Myophosphorylase

4: Hepatic phosphorylase

21-: Classic Galactosemia is due to deficiency of:

1: Hexosaminidase

2: Glucocerebroside

3: Sphingomyelinase

4: Galactose-1-Phosphate-Uridyl-Transferase

22-: Patients with diabetes frequently report changing visual acuities when their glucose levels are chronically high. Which of the following could explain the fluctuating acuity with high blood glucose levels?

1: Increased sorbitol in the lens

2: Decreased fructose in the lens

3: Increased oxidative phosphorylation in the lens

4: Macular degeneration

23-: All take place in mitochondria except

1: Fatty acid oxidation

2: EMP pathway

3: Electron transport chain

4: Citric acid cycle

24-: Not gluconeogenic-

1: Acetyl CoA

2: Lactate

3: Glycerol

4: Alanine

25-: Which of the following enzyme does not catalyse the irreversible step in glycolysis

1: Hexokinase

2: Phosphoglycero kinase

3: Pyruvate kinase

4: Phosphofructokinase

26-: Per TCA with 3 NADH and 1 FADH2, generates how many ATP-

1: 6

2: 9

3: 12

4: 15

27-: Renal threshold for glycosuria

1: 100 mg/dl

2: 180 mg/dl

3: 300 mg/dl

4: 350 mg/dl

28-: NADPH used in which pathway-

1: Fatty acid synthesis

2: Gluconeogenesis

3: Beta oxidation

4: Glycogenolysis

29-: Enzyme deficiency in Hurler syndrome?

1: Iduronate sulfatase

2: a-l-Iduronidase

3: b-Galactosidase

4: Galactosamine 6-sulfatase

30-: All of the following metabolic pathways occur in both Cytoplasm and Mitochondria, except:

1: Glycolysis

2: Gluconeogenesis

3: Heme Synthesis

4: Urea cycle

31-: Which of the following enzyme leads to release of free glucose from glycogen during glycogenolysis in muscle?

1: Glycogen phosphorylase

2: Glucose-1-phosphatase

3: Glucose-6-phosphatase

4: Debranching enzyme

32-: Which is not a substrate for gluconeogenesis?

1: Alanine

2: Fatty acid

3: Pyruvate

4: Lactate

33-: Epimers of glucose

1: Mannose

2: Glyceraldehyde

3: Fructose

4: None

34-: Enzyme defect in galactosemia

1: Uridyl transferase

2: Galactokinase

3: Epimerase

4: All of the above

35-: Pentosuria is due to defect in which pathway?

1: Glycolysis

2: Polyol pathway

3: Uronic acid pathway

4: Kreb's cycel

36-: Fluoroacetate blocks the Krebs cycle by inhibiting the following enzyme

1: Citrate synthase

2: Aconitase

3: a-KG dehydrogenase

4: Succinate dehydrogenase

37-: Niemann-Pick disease is due to deficiency of

1: Hexosaminidase

2: Sphingomyelinase

3: Galactokinase

4: Glucosidase

38-: Glucose is reabsorbed in which pa ?

1: Early PCT

2: Henle loop

3: Collecting duct

4: Distal convoluted tubule

39-: ATP yield in Beta oxidation of palmitic acid ?

1: 106 ATP

2: 102 ATP

3: 120 ATP

4: 110 ATP

40-: Glycolytic enzymes(s) inhibited by Fluoride:

1: Hexokinase

2: Aldolase

3: Enolase

4: Pyruvate kinase

41-: Enzymes not used in glycogen metabolism

1: Glycogen phosphorylase B

2: Glycogen synthase I

3: Glycogen synthase C

4: Glycogen synthase D

42-: Which of the following is the FAD-linked dehydrogenase of TCA cycle?

1: Isocitrate dehydrogenase

2: Malate dehydrogenase

3: Succinate dehydrogenase

4: a ketoglutarate dehydrogenase

43-: Essential pentosuria is due to deficiency of

1: Gulonolactone oxidase

2: Phosphoglucomutase

3: Xylulose reductase

4: Fructokinase

44-: GLUT 4 is present in -

1: Endothelium

2: Liver

3: Cardiac muscle

4: Lens

45-: Gluconeogenesis enzyme stimulated in starvation

1: Carboxylase

2: Pyruvate dehydrogenase

3: Pyruvate kinase

4: Glucokinase

46-: Major carbohydrate store in body is:

1: Hepatic glycogen

2: Blood glucose

3: Glycogen in adipose tissue

4: None of the above

47-: Which of the following is a debranching enzyme:

1: Glycogen synthetase

2: Glucose-6-phosphatase

3: Amylo alpha-1,6-glucosidase

4: Amylo (1,4)-(1,6) trans glycosylase

48-: Glucose transporters present in the Beta cells of the Islets of Langerhans is:

1: GLUT1

2: GLUT2

3: GLUT3

4: GLUT4

49-: Tautomerization

1: Shift of hydrogen

2: Shift of carbon

3: Shift of both

4: None of these

50-: Naf inhibits

1: Enolase

2: Glucokinase

3: Hexokinase

4: G-6 PD

51-: 6-PhosphoGluconate dehydrogenase need

1: NAD

2: NADPH

3: FAD

4: FMN

52-: Enzyme deficiency in McArdle's syndrome?

1: Acid maltase

2: Muscle phosphorylase

3: Liver debranching enzyme

4: Branching enzyme

53-: The rate limiting step in glycolysis is catalyzed by-

1: Pyruvate kinase

2: Enolase

3: Glucokinase

4: Phosphofructokinase

54-: Fructose 2-6 biphosphate is

1: Intermediate of glycosis

2: Positive allosteric regulation of PFK1 (Phospho-fructokinase 1)

3: Ne gative allosteric regulation of PFK1

4: Positive allosteric regulation of PFK2

55-: Enzyme deficiency in glycogen storage disease type 5 is:

1: Glucose 6 phosphatase

2: Acid maltase

3: De branching enzyme

4: Myophpsphorylase deficiency

56-: NAD+ reduced by all of the following enzymes except:

1: Alpha ketoglutarate dehydrogenase

2: Iso-citrate dehydrogenase

3: Malate dehydrogenase

4: Succinyl dehydrogenase

57-: Enzyme deficiency in Tarui disease is

1: Glucose-6-phosphatase

2: Muscle and erythrocyte phosphofructokinase 1

3: Lysosomal a1 - 4 and a1 - 6 glucosidase

4: Liver phosphorylase kinase

58-: Which of the following has highest glycemic index:

1: Glucose

2: Sucrose

3: Fructose

4: Sorbitol

59-: Pyruvate can be a substrate of all except

1: Fatty acid synthesis

2: TCA cycle

3: Cholesterol synthesis

4: Haemoglobin synthesis

60-: Which of the following glycolytic enzyme does not catalyze irreversible step -

1: Hexokinase

2: Phosphoglycerate kinase

3: Phosphofructokinase

4: Pyruvate kinase

61-: Phosphorylation of phosphofructokinase and fructose-1,6-bisphosphate by fructose-2,6-bisphosphate regulation is seen in

1: Brain

2: Liver

3: Adrenal Coex

4: RBC

62-: Glucose is conveed to sorbitol by

1: Aldolase B

2: Aldose reductase

3: Sorbitol Dehydrogenase

4: UDP galactose 4 epimerase

63-: Which of the following is a step in the gluconeogenic pathway?

1: Pyruvate to Acetyl co A

2: Glucose 6 phosphate to fructose 6 phosphate

3: oxaloacetate to citrate

4: oxaloacetate to phosphoenol pyruvate

64-: The oxidation of Galactose with strong oxidizing agent produces:

1: Mucic Acid

2: Gluconic Acid

3: Galacturonic acid

4: Saccharic Acid

65-: Enzyme deficient in Galactose, most commonly

1: Galactokinase

2: Epimerase

3: Uridyl transferase

4: None

66-: Which of the following enzymes is deficient in Niemann- Pick disease?

1: Aryl sulfatase

2: Glucose-6-phosphatase

3: Sphingomyelinase

4: Beta glucosidase

67-: Branching enzyme deficiency is seen in

1: Andersen disease

2: McArdle's syndrome

3: Cori disease

4: Von Gierke disease

68-: Which of the following alcoholic metabolite, after metabolizing in liver causes flushing in Asian population and native Americans

1: Acetone

2: Acetaldehyde

3: Methanol

4: Formaldehyde

69-: In a well fed state, the activity of CPT-I in outer mitochondrial membrane is inhibited by:

1: Glucose

2: Pyruvate

3: Acetyl CoA

4: Malonyl CoA

70-: Which of the following DOES NOT depend on insulin for glucose uptake :

1: Brain

2: Cardiac muscles

3: Skeletal muscles

4: Adipose tissue

71-: Which of the following does not contribute to glucose by gluconeogenesis?

1: Lactate

2: Acetyl CoA

3: Pyruvate

4: Oxaloacetate

72-: During starvation, brain utilizes -

1: Glycogen

2: Fattey acids

3: Ketone bodies

4: None

73-: True about anaerobic glycolysis is

1: 2 ATP from 1 glucose

2: 32 ATP from 1 glucose

3: 26 ATP from 1 glucose

4: 28 ATP from 1 glucose

74-: During starvation, Brian utilizes

1: Glycogen

2: Fattey acids

3: Ketone bodies

4: None

75-: Which of the following occurs in both cytoplasm and mitochondria:

1: Glycolysis

2: Gluconeogenesis

3: Glycogenolysis

4: Glycogenesis

76-: The enzymes involved in Phosphorylation of glucose to glucose 6- phosphate are:

1: Hexokinase

2: Glucokinase

3: Phosphofructokinase

4: Both A. and B.

77-: Which GLUT transporter facilitates Fructose absorption along the apical side of enterocyte?

1: GLUT 1

2: GLUT 2

3: GLUT 4

4: GLUT 5

78-: Which disaccharides are not broken down in git?

1: Lactulose

2: Maltose

3: Sucrose

4: Lactose

79-: All of the following steps act as sources of energy in citric acid cycle except -

1: Citrate synthase

2: Isocitrate dehydrogenase

3: Succinyl thiokinase

4: Succinate dehydrogenase

80-: Most common glycogen storage disease presenting with hypoglycemia and normal glycogen structure -

1: Von Gierke disease

2: Pompe's disease

3: Me Ardle's disease

4: Forbe's disease

81-: Choose the major fuel that is being used by the chest muscles used during weightlifting.

1: Ketone bodies

2: Blood glucose

3: Fatty acids

4: Glycogen

82-: The blood levels of glucose, galactose, and fructose were measured in normal persons and in persons with enzyme deficiencies soon after they drank a milk shake made with milk and sugar. Which option below would be Lower in the blood of a person with a lactase deficiency than in a normal person.

1: Glucose

2: Galactose

3: Fructose

4: Glucose and galactose

83-: Which of the following is an amphibolic pathway?

1: Glycolysis

2: Citric acid cycle

3: Gluconeogenesis

4: Glycogenolysis

84-: Enzyme deficiency in Cori disease is

1: Liver phosphorylase

2: Branching enzyme

3: Liver and muscle debranching enzyme

4: Muscle phosphorylase

85-: Essential pentosuria is due to deficiency of:

1: Fructokinase

2: Phosphoglucomutase

3: Xylulose reductase

4: Gluonolactone oxidase

86-: Allosteric activator of PFK

1: Fructose 1-6 biphosphate

2: Fructose 2-6 biphosphate

3: Phosphoenolpyruvate

4: Pyruvate

87-: Acetyl CoA cannot be conveed to:

1: Fatty Acids

2: Glucose

3: Ketone Bodies

4: Cholesterol

88-: Number of ATP molecules and NADH formed in each cycle of glycolysis

1: 4,2

2: 2,2

3: 4,4

4: 2,4

89-: Glycosaminoglycans located in CNS is

1: Hyaluronic acid

2: Chondroitin sulfate

3: Keratan sulfate 2

4: Heparan sulfate

90-: Inhibition of anaerobic glycolysis by increase supply of O2 is called:

1: Carbtree effect

2: Pasteur effect

3: Lewis effect

4: None

91-: Which of the following is not a ketose?

1: Ribose

2: Erythrulose

3: Fructose

4: Ribulose

92-: Another name for glucose

1: Dextrin

2: Dextrose

3: Sucrose

4: Saccharin

93-: Which of the following glycosaminoglycan contains iduronic acid?

1: Hyaluronic acid

2: Keratan sulfate I

3: Keratan sulfate II

4: Heparin

94-: Pasteur effect is:

1: Inhibition of glycolysis

2: Oxygen is involved

3: Inhibition of enzyme phosphofructokinase

4: All of these

95-: Arrange the enzymes used to conve propionyl CoA to glucose in sequence: A. Methyl malonyl CoA racemase B. Succinate Thiokinase C. Methyl malonyl CoA mutase D. Propionyl CoA carboxylase

1: D- B- C-A

2: D- A- C-B

3: A- D- B-C

4: B- A- D-C

96-: All the following organs produce lactate as the end product of glycolysis in normal conditions except

1: Brain

2: Retina

3: Skin

4: Liver

97-: Benedict test is for-

1: Bile salts in urine

2: Bile pigment in urine

3: Reducing sugar in urine

4: Ketone bodies in urine

98-: Which of the following is not a reducing sugar?

1: Fructose

2: Galactose

3: Sucrose

4: Maltose

99-: Total number of dehydrogenases in Krebs cycle

1: 3

2: 2

3: 4

4: 5

100-: In Citric acid cycle, which enzyme is inhibited by arsenite-

1: Isocitrate Dehydrogenase

2: a ketoglutarate Dehydrogenase

3: Succinate Dehydrogenase

4: Aconitase

101-: Heparin is a:

1: Glycosamino glycan

2: Polysaccharide

3: Proteoglycan

4: Carbohydrate

102-: Why is Glucose-6-phosphate is not acted upon by Glucose-6-phosphatase enzyme in cytoplasm, even if glycogen synthesis and breakdown takes place in the same cell, having an enzymes present in cytoplasm.

1: Stearic inhibition of phosphatase by albumin

2: Glucose-6-phosphatase is present in endoplasmic reticulum while glycogen metabolism occurs in the cytoplasm

3: It is thermodynamically ble only when gluconeogenesis is occurring

4: Require protein kinase for its activation

103-: NADPH is produced by -

1: Glycolysis

2: Citric acid cycle

3: Hexose monophosphate shunt

4: Glycogenesis

104-: Hereditary fructose intolerance is due to deficiency of:

1: Aldolase B

2: Aldolase A

3: Fructokinase

4: Sucrase

105-: One of the following is considered to be the key regulatory enzyme of glycolysis

1: Hexokinase

2: Phosphofructokinase

3: Phosphoglycerate kinase

4: Pyruvate kinase

106-: GLUT 3 transpoer is located in

1: Placenta

2: Small intestine

3: Liver

4: Hea

107-: Enzyme of Pathway common to Glu- coneogenesis

1: Pyruvate kinase

2: PFK

3: Hexokinase

4: Phosphoglycerate kinase

108-: Essential pentosuria can occur due to deficiency in metabolic pathway of

1: Uronic acid

2: Hexose-mono-phosphate

3: Glycogen

4: Fructose

109-: A young man finds that every time he eats dairy products he feels very uncomfoable. His stomach becomes distended. He develops gas and diarrhoea frequently. These symptoms do not appear when he eats food other than dairy products. Which of the following is most likely enzyme in which this young man is deficient:

1: Alpha amylase

2: Beta galactosidase

3: Alpha glucosidase

4: Sucrase

110-: Storage form of free energy in the cell is:

1: NADH

2: ATP

3: G-6-Phosphate

4: Creatine phosphate

111-: Key enzyme in glycogenolysis -

1: Branching enzyme

2: Glycogen synthase

3: Debranching enzyme

4: Glycogen phosphorylase

112-: All are true about GIP (Glucose dependent insulinotropic Polypeptide) except:

1: GIP stimulates glucagon release

2: GIP is inhibited by insulin

3: GIP inhibits GLP-1

4: GIP in T2DM worsens post prandial hyperglycemia

113-: All occur in mitochondria except -

1: ECT

2: TCA cycle

3: Ketogenesis

4: Glycolysis

114-: Which test is given positive by Glyceraldehyde?

1: Benedicts test

2: Molisch's test

3: Seliwanoff's test

4: Gerhard's test

115-: Muscles cannot contribute to raising blood glucose by glycogenolysis due to lack of -

1: Glucokinase

2: Phosphoglucomutase

3: G-6-phosphatase

4: Musclephosphorylae

116-: Pyridoxal phosphate is required for

1: Gluconeogenesis

2: Glycogenolysis

3: Glycolysis

4: Fatty acid oxidation

117-: A 45-year-old male presents to the Emergency Room with hematemesis and melena, which is actively managed. He has been previously diagnosed with liver cirrhosis. An esophago-gastro- duodenoscopy has been planned and patient has been asked to observe an overnight fast in esophagogastroduodenoscopy preparation of endoscopy. Patient had dinner at 7 pm and endoscopy was performed at 1 pm the next day. At the time of endoscopy, some pathways were generating glucose to maintain serum glucose levels. Which of the following enzymes catalyze the irreversible biochemical reaction of this process?

1: Enolase

2: Glycogen phosphorylase

3: Fructose-1,6-bisphosphatase

4: Glucose 6P dehydrogenase

118-: Compound that joints glycolysis with glycogenesis and glycogenolysis is

1: Glucose 1, 6 biphosphate

2: Glucose 1 phosphate

3: Glucose 6 phosphate

4: Fructose 1, 6 biphosphate

119-: Which of the following pathway occurs paly in mitochondria and paly in cytosol?

1: Glycolysis

2: Kreb's cycle

3: Ketogenesis

4: Urea cycle

120-: GLUT responsible for secretion of insulin from beta cells of pancreas:

1: GLUT-4

2: GLUT-2

3: GLUT-3

4: GLUT-1

121-: Number of ATP formed per turn of citric acid cycle is

1: 5

2: 7

3: 10

4: 15

122-: Starch is a

1: Polysaccharide

2: Protein

3: Disaccharide

4: None of these

123-: Phosphofructokinase-I is activated by all except:

1: 5'AMP

2: Fructose 2,6 Bisphosphate

3: Fructose 6 Phosphate

4: Citrate

124-: In TCA cycle, citrate is conveed into cis-aconitate by which mechanism?

1: Loss of H+

2: Loss of phosphate

3: Loss of H2O molecule

4: Loss of carbon dioxide molecule

125-: Tyrosine enters gluconeogenesis by forming which substrate -

1: Succinyl CoA

2: a-ketoglutarate

3: Fumarate

4: Citrate

126-: Essential pentosuria occurs due to defect in the metabolic pathway of

1: Uronic acid

2: Hexose-monophosphate

3: Glycogen

4: Fructose

127-: Chitin contains

1: Alpha 1-4 bond

2: b-1-6 bond

3: Alfa 1-6 bond

4: b-1-4 bond

128-: Epimer of glucose is

1: Fructose

2: Galactose

3: Glyceraldehyde

4: None

129-: All of the following are cofactors for the enzymes of the TCA cycle, except

1: Niacin

2: Pantothenic acid

3: Biotin

4: Riboflavin

130-: Von Geirke's occurs due to deficiency of -

1: Glucose-6-phosphatase

2: Liver Phosphoryiase

3: Muscle phosphoryiase

4: Debranching enzyme

131-: A10-year-old boy rapidly develops hypoglycemia after moderate activity. Blood examination reveals raised ketone bodies, lactic acid, and triglycerides. On examination, the liver & kidneys were enlarged. Histopathology of the liver shows deposits of glycogen in excess amount. What is the diagnosis?

1: Von Gierke disease

2: Pompe's disease

3: Mc Ardle's disease

4: Forbe's disease

132-: Fructose intolerance is due to deficiency of?

1: Aldolase B

2: Fructokinase

3: Triokinase

4: Aldolase A

133-: Rothera's test is used for the detection of-

1: Reducing sugar

2: Blood

3: Ketone body

4: Protein

134-: Major amino acid released from muscle during starvation

1: Arginine

2: Alanine

3: Hitidine

4: Glutamate

135-: Which of the following is a non-reducing sugar -

1: Glucose

2: Lactose

3: Maltose

4: Sucrose

136-: Which of the following metabolic pathways does not generate ATP?

1: Glycolysis

2: TCA cycle

3: Fatty acid oxidation

4: HMP pathway

137-: The compound that regulates both glycolysis and gluconeogenesis is:

1: Fructose-1,6-bisphosphate

2: Fructose-2,6-bisphosphate

3: Citrate

4: Glucose-6-phosphate

138-: All are used in glu coneogenesis except -

1: Oleate

2: Succinate

3: Glutamate

4: Aspartate

139-: A 3-week-old neonate who began vomiting 2 days after birth, usually within 30 minutes after breastfeeding. He also has abdominal distension with enlargement of liver,

with jaundice. The consulting doctor did two urine dipstick test, one specific for glucose was negative, second test specific for reducing sugar was positive. What is the diagnosis?

1: Hereditary fructose intolerance

2: Classic galactosemia

3: Essential fructosuria

4: Essential pentosuria

140-: Reducing equivalants produced in glycolysis are transported from cytosol to mitochondria by -

1: Carnitine

2: Creatine

3: Malate shuttle

4: Glutamate shuttle

141-: Which of the following is not an intermediate of citric cycle?

1: Acetyl-CoA

2: Succinyl-CoA

3: a-ketoglutarate

4: Citrate

142-: Von Geirke's disease occurs due to deficiency of

1: Glucose-6-Phosphatase

2: Liver Phosphorylase

3: Muscle Phosphorylase

4: Debranching enzyme

143-: Pyruvate is conveed to which substance to sta gluconeogenesis?

1: Oxaloacetate

2: Phosphenol pyruvate

3: Cis-aconitate

4: Succinate

144-: Entropy is a measure of the:

1: Reversibility of reaction

2: Randomness in a system

3: Exothermicity

4: Free energy for an enzymatic reaction

145-: Acetyl CoA can be directly conveed to all except

1: Glucose

2: Fatty acids

3: Cholesterol

4: Ketone bodies

146-: A common intermediate in the conversion of glycerol and lactate to glucose is which one of the following?

1: Pyruvate

2: Oxaloacetate

3: Malate

4: Glucose-6-phosphate

147-: Molisch&;s test is positive in all except

1: Mucoproteins

2: Glycoproteins

3: Sucrose

4: Phospholipids

148-: Which enzyme is deficient in Mc Ardle's disease?

1: Liver phosphorylase deficiency

2: Muscle phosphorylase deficiency

3: Lysosomal alpha-1, 4 glucosidase deficiency

4: G6PD deficiency

149-: Which of the following kinase reaction is reversible?

1: Hexokinase

2: Phosphofructo Kinase

3: Phosphoglycerate Kinase

4: Pyruvate kinase

150-: Malonate competitively inhibits

1: Fumarate dehydrogenase

2: Succinate dehydrogenase

3: Aconitase

4: Succinate thiokinase

151-: A 10-year-old boy rapidly develops hypoglycemia after moderate activity. Blood examination reveals raised levels of ketone bodies, lactic acid and triglyceides. On examination, liver and kidney were enlarged. Histopathology of liver shows deposits of glycogen in excess amount. Diagnosis?

1: Von Gierke's disease

2: Cori's disease

3: Mcardle's disease

4: Pompe's disease

152-: Substrate level phosphorylation in glycolysis is catalyzed by

1: Glyceraldehyde 3 phosphate dehydrogenase

2: Pyruvate kinase

3: Phosphofructokinase

4: Enolase

153-: Substrate level phosphorylation is catalysed by which enzyme?

1: Succinate dehydrogenase

2: Alpha keto glutarate dehydrogenase

3: Succinate thiokinase

4: Malate dehydrogenase

154-: Fructose is transpoed by

1: GLUT 5

2: GLUT 4

3: GLUT 3

4: GLUT 7

155-: A child presents with hepatomegaly and bilateral lenticular opacities. Deficiency of which of the following enzyme will NOT cause such features:

1: UDP-galactose-4-epimerase

2: Galactokinase

3: Glucokinase

4: Gal-1-P uridyl transferase

156-: Dextrose is:

1: D (+) glucose

2: D (-) glucose

3: L (+) glucose

4: L (-) glucose

157-: Polyol pathway is responsible for formation of

1: Fructose from glucose

2: Galactose From Fructose

3: Galactose From Glucose

4: Glucose From Fructose

158-: A pregnant woman who has a lactase deficiency and cannot tolerate milk in her diet is concerned that she will not be able to produce milk of sufficient caloric value to nourish her baby. The best advice to her is which one of the following?

1: She must consume pure galactose in order to produce the galactose moiety of lactose.

2: She will not be able to breastfeed her baby because she cannot produce lactose.

3: The production of lactose by the mammary gland does not require the ingestion of milk or milk products.

4: She can produce lactose directly by degrading a-lactalbumin.

159-: Enzyme deficiency in McArdle syndrome

1: Muscle phosphorylase

2: Liver phosphorylase

3: Liver debranching enzyme

4: Glycogen synthase

160-: A 2-week-old neonate with complete hypotonia, convulsions, failure to thrive and metabolic acidosis. The baby has small of burnt sugar in urine. The test called DNPH test is positive. What is the enzyme deficiency in this metabolic disorder?

1: Isovaleryl CoA dehydrogenase

2: Dihydrolipoamide dehydrogenase

3: Branched chain keto acid dehydrogenase

4: Transacylase

161-: Skeletal muscle is deficient in

1: Glucose -6 phosphatase

2: Hexokinase

3: Isomerase

4: Phosphofructokinase

162-: Co-factor for phosphofructokinase is

1: Mg +2

2: Mn +2

3: Fe +2

4: Zn

163-: In which of the following tissues, is glycogen incapable of contributing directly to blood glucose?

1: Liver

2: Muscle

3: Both

4: None

164-: Coenzyme A in TCA contains which of the following?

1: Thiamine

2: Riboflavin

3: Panthothenic acid

4: Nicotinic acid

165-: Cancer cells derive nutrition from:

1: Anaerobic glycolysis

2: Oxidative phosphorylation

3: Increase in mitochondria

4: Aerobic Glycolysis

166-: Most impoant amino acid transpoed from muscle to liver for gluconeogenesis:

1: Methionine

2: Tryptophan

3: Alanine

4: Arginine

167-: A bodybuilder starts eating raw egg for protein. He used develop fatigue on moderate exercise. The doctor prescribes a vitamin. Which enzyme is deficient in him?

1: Glucose 6 Phosphatase

2: Pyruvate Carboxylase

3: PEPCK

4: Glycogen Phosphorylase

168-: Which of the following is the products formed from alcohol but not the intermediates of TCA cycle/ glycolysis: (PGI Dec 2006)

1: Acetaldehyde

2: Pyruvate

3: Lactate

4: Oxalate

169-: In the krebs cycle, CO2 is released from a step catalyzed by which of the following enzyme?

1: Isocitrate dehydrogenase

2: succinate dehydrogenase

3: Aconitase

4: Succinate thiokinase

170-: Non-reducing disaccharide is

1: Sucrose

2: Fructose

3: Trehalose

4: Lactose

171-: NAD+ linked dehydrogenase is

1: PDH

2: G6PD

3: FAD

4: FMN

172-: Choose the major fuel that is being used by the brain after 1 day of fasting.

1: Ketone bodies

2: Blood glucose

3: Fatty acids

4: Glycogen

173-: Which mucopolysaccharides does not contain uronic acid?

1: Hyaluronic acid

2: Chondroitin sulfate

3: Dermatan sulfate

4: Keratan sulfate

174-: What is not given in fructose intolerance patient?

1: Glucose + Fructose

2: Fructose + Sucrose

3: Fructose + Galactose

4: Fructose + Maltose

175-: True about gluconeogenesis

1: Occurs mainly in muscle

2: It is reverse of glycolysis

3: Alanine & lactate both can serve as substrate

4: Glycerol is not a substrate

176-: Muscles are not involved in which glycogen storage disease?

1: I

2: II

3: III

4: IV

177-: Lactic acidosis in thiamine deficiency is due to which enzyme dysfunction?

1: Phosphoenol pyruvate carboxykinase

2: Pyruvate dehydrogenase

3: Pyruvate carboxylase

4: Aldolase

178-: By which of the following anticoagulants used in estimating blood glucose, glycolysis is prevented

1: EDTA

2: Heparin

3: Sodium fluoride

4: Sodium citrate

179-: All are used in gluconeogenesis except

1: Oleate

2: Succinate

3: Glutamate

4: Aspaate

180-: Glycogen phosphorylase requires -

1: Thiamine pyrophosphate

2: Pyridoxal phosphate

3: Citrate

4: FAD

181-: Patient's blood glucose levels were normal by GOD - POD method. But urine shows positive Benedict's test. The reason for disparity in results is :

1: False positive

2: Fructosemia

3: Galactosemia

4: Glucose intolerance

182-: b-glucosidase deficiency causes -

1: Gaucher's disease

2: Niemann Pick disease

3: Krabbe's disease

4: Tay-Sach disease

183-: which requires thiamine pyrophosphate as the cofactor in HMP pathway?

1: Phosphogluconate dehydrogenase

2: Glucose 6 PO4 dehydrogenase

3: Transaldolase

4: Transketolase

184-: Metabolic change seen in starvation are all except

1: Increased gluconeogenesis

2: Increased glycolysis

3: Ketogenesis

4: Protein degradation

185-: Baby has hypoglycaemia, specially early morning hypoglycaemia. Glucagon given. It raises blood glucose if given after meals But does not raises blood glucose if given during fasting. Liver biopsy shows increased glycogen deposits. Enzyme defect is ?

1: Muscle phosphorylase

2: Glucose-6-phosphatase

3: Branching enzyme

4: Debranching enzyme

186-: Inulin is a:

1: Glucosan

2: Fructosan

3: Galactosan

4: Mannosan

187-: Fructose intolerance is due to:

1: Fructose only

2: Fructose and Glucose

3: Maltose

4: Sucrose

188-: True statements about Glucokinase is/are

1: Km value is higher than normal blood sugar

2: Not Found in liver

3: G-6P inhibit it

4: Has both glucose 6 phosphatase and kitase activity

189-: Which of the enzyme of glycolysis is a pa of gluconeogenesis?

1: Pyruvate kinase

2: PFK

3: Hexokinase

4: Phosphoglycerate kinase

190-: G-6-PD deficiency causes -

1: Leukemia

2: Hemolytic anemia

3: Hemophilia

4: None

191-: Composition of Hyaluronic acid

1: N-acetyl glucosamine + b glucosamine acid

2: N-acetyl glucosamine + b-glucoraunic acid

3: N-acetyl glucosamine + sulfated glucosamine acid

4: N-acetyl glucosamine + iduranic acid

192-: All of the following are regulating enzymes of glycolysis, except -

1: Hexokinase

2: Glucokinase

3: Enolase

4: PhosphofructokinaseI

193-: The activities of all the following enzymes are increased in starvation except

1: Pyruvate kinase

2: Pyruvate carboxylase

3: Phosphoenolpyruvate carboxykinase

4: Glucose 6-phosphatese

194-: Which enzyme is not present in muscles?

1: Phosphorylase b

2: Hexokinase

3: Glucose-6-phosphatase

4: Glycogen synthase

195-: Acetyl co-A can he directly converted to all except:

1: Glucose

2: Fatty acids

3: Cholesterol

4: Ketone bodies

196-: All are substrates for gluconeogenesis except -

1: Lactate

2: Propionate

3: Alanine

4: Acetyl-CoA

197-: Branched-chain ketoaciduria is due to deficiency of

1: Carboxylase

2: a-ketoacid dehydrogenase

3: Methyl-malonyl CoA mutase

4: Fumaryacetoacetate hydrolase

198-: In the fasting state, glucose is obtained from

1: Liver glycogen

2: Myuscle glycogen

3: Both

4: None

199-: During prolonged fasting, rate of gluconeogenesis is determined by:

1: Essential fatty acid in liver

2: Alanine in liver

3: Decreased cGMP

4: ADP in liver

200-: Insulin does not facilitate glucose uptake in the following except

1: Liver

2: RBC

3: Hea

4: Kidney

201-: Which of the following is not rate-limiting enzyme?

1: ALA synthase

2: Phosphofructokinase

3: Acetyl CoA carboxylase

4: Malonate dehydrogenase

202-: Fumarase is an example of -

1: Lyase

2: Hydrolase

3: Ligase

4: None

203-: Insulin-mediated uptake of glucose into muscle is through

1: GLUT-2

2: GLUT-4

3: GLUT-1

4: GLUT-5

204-: Which is required in Anabolic reactions:

1: NAD

2: NADP

3: FAD

4: FADP

205-: Pyruvate dehydrogenase complex contains all except

1: Biotin

2: NAD

3: FAD

4: CoA

206-: The energy for glycogenesis is provided by

1: GTP

2: GDP

3: UTP

4: AMP

207-: Mainly in which form, carbohydrates are absorbed from gut:

1: Sucrose

2: Disaccharide

3: Glucose

4: Polysaccharide

208-: MPS without corneal clouding is?

1: Hurler's disease

2: Hunter's disease

3: sly syndrome

4: Maroteaux Lamy syndrome

209-: Maximum number of energy rich phosphate is formed from which of the following pathways?

1: Glycolysis

2: Gluconeogenesis

3: HMP shunt

4: Citric acid cycle

210-: In hereditary fructose intolerance there is defect in:

1: Phosphofructokinase

2: Fructose 2, 6-biphosphatase

3: Fructokinase

4: Aldolase B

211-: Pentose pathway produces -

1: ATP

2: NADPH

3: ADP

4: AcetylCoA

212-: Xanthoproteic test is used for

1: Reducing sugars

2: Bile salts

3: Amino acids

4: Ketone bodies

213-: Glycolytic enzymes(s) inhibited by Fluoride : (PGI Dec 2008)

1: Hexokinase

2: Aldolase

3: Enolase

4: Pyruvate Kinase

214-: A child suffered from a viral illness for which he took aspirin. 3 days later the child presented to the emergency with altered sensorium and icterus. What is the underlying biochemical defect -

1: Beta oxidation of fatty acids

2: Glucose-6-phosphatase deficiency

3: Pyruvate dehydrogenase deficiency

4: Urea cycle defect

215-: Inhibition of glycolysis by increased supply of O2 is called

1: Crabtree effect

2: Pasteur effect

3: Lewis effect

4: None

216-: Sodium fluoride is a good in-vitro preservative of glucose in blood samples because it inhibits:

1: Enolase

2: Hexokinase

3: Phosphofructokinase

4: Pyruvate dehydrogenase

217-: Final product in anaerobic glycolysis -

1: Pyruvate

2: Acetyl CoA

3: Lactate

4: Oxaloacetate

218-: Severe thiamine deficiency is associated with:

1: Decreased RBC transketolase activity

2: Increased clotting time

3: Decreased RBC transaminase activity

4: Increased xanthic acid excretion

219-: Hydrogen ions are not formed by which complex or which is not a proton pump?

1: Complex I

2: Complex II

3: Complex III

4: Complex IV

220-: A newborn baby refuses breast milk since the 2nd day of bih but accepts glucose-water, develops vomiting and severe jaundice by the 5th day. Benedict's test was positive for urine and blood glucose was low. The most likely cause is due to the deficiency of

1: Galactokinase

2: Aldose reductase

3: UDP galactose 4 epimerase

4: Galactose 1 phosphate uridyl transferase

221-: Galactosemia is due to deficiency of the following enzymes

1: Galactose-1-phosphate uridyl transferase

2: HGPRT

3: Galactokinase

4: Epimerase

222-: Fluoride ions act by inhibiting

1: Enolase

2: Hexokinase

3: Cytochrome oxidase

4: Carbonic anhydrase

223-: Coenzyme required for transketolase reaction is

1: Ca2+

2: Mg2+

3: H+

4: PO4-

224-: Mechanism by which pyruvate cytosol is transpoed to mitochondria is

1: Chloride antipo

2: Proton sympo

3: ATP dependent antipo

4: Facilitated unipo

225-: Parent alcohol in carbohydrates is :

1: Glycerol

2: Ethanol

3: Methanol

4: Cholesterol

226-: Gluconeogenesis is inhibited by:

1: Insulin

2: Glucagon

3: Glucocorticoids

4: GnRH

227-: High energy phosphates are produced in the following pathways except

1: HMP shunt

2: Oxidative pathway

3: Glycolysis

4: TCA cycle

228-: Pyruvate dehydrogenase is inhibited allosterically by

1: AMP

2: Pyruvate

3: NADH

4: Insulin

229-: When glucose concentration in blood increases, there is linear increase in?

1: Insulin

2: Glucagon

3: Growth Hormone

4: Cortisol

230-: After strenuous exercise, alkaline pH of skeletal muscle is in which glycogen storage disease:-

1: Mc Ardle's disease

2: Von - Gierke's disease

3: Her's disease

4: Pompe's disease

231-: Number of -OH groups in ribose:

1: 4

2: 5

3: 6

4: 2

232-: Which of the following anticoagulant used in estimating blood glucose prevents glycolysis?

1: Oxalate

2: Citrate

3: Sodium fluoride

4: Heparin

233-: All of the following are true regarding proteoglycans, EXCEPT:-

1: Chondroitin sulfate is a glycosaminoglycan

2: They hold less amount of water

3: They are made up of sugar and aminoacids

4: They carry negative charge

234-: Which is true for glucuronidation:

1: Water solubility is decreased

2: Phase II reaction

3: Phase I reaction

4: Done by CYP enzyme

235-: Not gluconeogenic

1: Acetyl CoA

2: Lactate

3: Glycerol

4: Alaline

236-: The immediate degradation of glycogen under normal conditions gives rise to which one of the following?

1: More glucose than glucose-1-phosphate

2: More glucose-1-phosphate than glucose

3: Equal amounts of glucose and glucose-1-phosphate

4: Neither glucose nor glucose-1-phosphate

237-: Non-ketotic hypoglycemia is seen in all except

1: Galactosemia

2: Hereditary fructose intolerance

3: Hyperinsulinism

4: Glycogen storage disorders

238-: Gluconeogenesis occurs in ail except -

1: Liver

2: Kidney

3: Gut

4: Muscle

239-: Gluconeogenesis from lactate needs all except

1: Transpo of lactate from muscle to liver

2: Conversion of lactate to pyruvate

3: Transamination of pyruvate to alanine

4: None of the above

240-: Glucose transporter in myocyte stimulated by insulin is:

1: GLUT-1

2: GLUT-2

3: GLUT-3

4: GLUT-4

241-: Enzymes in glycogen metabolism

1: Phosphorylase a

2: Phosphorylase b

3: Glycogen Synthase II

4: Glycogen Synthase C

242-: The activity of pyruvate carboxylase is dependent upon the positive allosteric effector

1: Succinate

2: AMP

3: Isocitrate

4: Acetyl Co A

243-: THEME AND FOCUS: METABOLISM OF CARBOHYDRATES Case Study: A 3 year old boy was brought to the emergency depament after several episodes of vomiting and lethargy. He was also found to have hypoglycemia. His pediatrician was concerned about possible hepatic failure along with recurrent episodes of vomiting and lethargy. After a careful history, it was observed that these episodes occur after ingestion of sweets or fruits. Lead Question: What is the most likely diagnosis?

1: Hereditary Fructose Intolerance

2: Glucose Homeostasis

3: Glycogen storage disease type III

4: Galactosemia

244-: On exercise testing, a patient with McArdle disease exhibit:

1: Exercise endurance

2: | blood glucose in the blood drawn from the exercising forearm vein

3: | blood lactate in the blood drawn from the exercising forearm vein

4: Relatively | blood lactate in the blood drawn from the exercising forearm vein

245-: A five-year-old boy with coarse facial features, mental retardation, dysostosis multiplex. Corneal clouding was not present. What is the diagnosis:

1: MPS Type IV

2: Hurler disease

3: Hunter disease

4: Gaucher's disease

246-: D-Xylose test is used in diagnosis of:

1: Zinc deficiency

2: Malabsorption syndrome

3: Vitamin B12 deficiency

4: Bacterial undergrowth syndrome

247-: Essential fructosuria is due to deficiency of

1: b-galactosidase

2: Aldolase-B

3: Fructokinase

4: Aldose reductase

248-: The primary purpose of carbohydrate loading practiced by endurance athletes is:

1: To form glycogen with fewer branch points than normal

2: To form glycogen with more branch points than normal

3: To conve glucose to proteins

4: To maintain optimal blood glucose concentration

249-: Lactate is formed in all except -

1: RBCs

2: Lens

3: Brain

4: Testis

250-: In TCA cycle, NADH is produced at all sites except

1: Isocitrate dehydrogenase

2: Succinate dehydrogenase

3: Malate dehydrogenase

4: Pyruvate dehydrogenase

251-: All of the following are enzymes of TCA cycle, EXCEPT

1: Aconitase

2: Fumarase

3: Malic enzyme

4: Citrate synthase

252-: Final products of HMP are :

1: 6 NADPH

2: 2 NADPH

3: 3 NADPH

4: Variable

253-: The syndrome associated with deficiency of Dermatan sulfate, heparan sulfate, chondroitin 4-sulfate and chondroitin 6-sulfate is

1: Hunter syndrome

2: Morquio syndrome B

3: Sly syndrome

4: Hurler syndrome

254-: Splenomegaly seen in A/E: (PGI Dec 2006)

1: Neimann pick's disease

2: Krabbe's disease

3: GM2, gangliosidosis

4: Gaucher's disease

255-: Accumulation of glycogen in lysosomes is characteristic in the deficiency of

1: Glycogen synthase

2: Liver debranching enzyme

3: Acid maltase

4: Muscle phosphorylase

256-: Which of the following to stimulate glucose utilization:

1: Insulin

2: Growth hormones

3: Corticosteroids

4: Glucagon

257-: Lactate is formed in all except

1: RBC

2: Lens

3: Brain

4: Testis

258-: ATP is an allosteric regulator of:

1: Hexokinase and PFK 1

2: PFK 1 and PFK 2

3: PFK 1 and Pyruvate kinase

4: Glyceraldehyde 3 phosphate dehydrogenase and PFK 1

259-: Post prandial utilization of glucose is done by which enzyme:

1: Fructokinase

2: Glucokinase

3: Hexokinase

4: All of above

260-: Cytochrome Oxidase is a

1: Hemoprotein

2: Flavin mononucleotide

3: Flavin adenine dinucleotide

4: flavin adenine trinucleotide

261-: What is the cycle shown below called? (See Figure)

1: Embden Meyerhof pathway

2: Pentose phosphate pathway

3: Cori cycle

4: Pyruvate decarboxylation

262-: Which of the following is not seen in human body?

1: L-fucose

2: L-fructose

3: D-Glucose

4: D- Fructose

263-: Which of the following is the rate-limiting enzyme of gluconeogenesis?

1: Phosphofructokinase-1

2: Pyruvate kinase

3: Glycerol kinase

4: Fructose 1,6 bisphosphatase

264-: Isocitrate dehydrogenase is linked to

1: NAD

2: FAD

3: NADP

4: FMN

265-: Which of the following enzymes is coded by X-chromosome?

1: alpha-L-Iduronidase

2: Iduronate sulfatase

3: b-Galactosidase

4: Hyaluronidase

266-: Enzyme deficient is Tay-Sach disease -

1: Hexosaminidase-A

2: Sphingomyelinase

3: Ceramidase

4: a-galactosidase

267-: Which disaccharide is NOT broken down in GIT when ingested:

1: Lactulose

2: Maltose

3: Sucrose

4: Lactose

268-: Fluoride released from fluoroacetate inhibits which metabolic pathway?

1: ETC

2: TCA Cycle

3: Oxidative phosphorylation

4: Glycolytic pathway

269-: Amino acid cannot used for glycogen synthesis

1: Muscle

2: RBCs

3: Brain

4: Kidney

270-: All are functions of Glycosaminoglycans EXCEPT-

1: Anticoagulant

2: Wound healing

3: Lubrication

4: Transpo of lipids

271-: Enzyme activated by covalent phosphorylation is

1: Glycogen phosphorylase

2: Acetyl CoA carboxylase

3: HMG CoA reductase

4: Pyruvate carboxylase

272-: The molecule, which is the initiator of cataract formation in the eye lens and whose 1-phosphate derivative is responsible for liver failure, is

1: Sorbitol

2: Mannitol

3: Inositol

4: Galactitol

273-: Cori&;s cycle is concerned with transpo of

1: Alanine

2: Glutamate

3: Lactate

4: None

274-: Fructose intolerance is due to deficiency of:

1: Fructokinase

2: Aldolase-B

3: Fructose 1,6 bisphosphatase

4: Fructose synthase

275-: Which of the following has no asymmetric carbon?

1: Glucose

2: Glyceraldehyde

3: Dihydroxyacetone

4: Fructose

276-: In conversion of lactic acid to glucose, three reactions of glycolytic pathway are circumvented, which of the following enzymes do not participate?

1: Pyruvate carboxylase

2: Phosphoenol pyruvate carboxy kinase

3: Pyruvate kinase

4: Glucose-6-phosphatase

277-: THEME AND FOCUS: CHEMISTRY OF CARBOHYDRATES Case: A 54 year old women who was bed bound in a nursing home began to develop swelling of her left leg. She was diagnosed with Venous Doppler ultrasound and was found to have a deep vein thrombosis.

Lead Question: She should be treated with which chemical so as to prevent the clot from enlarging.

1: Digitalis

2: Ouabain

3: Heparin

4: Heparan sulfate

278-: What is Atkin's diet:

1: Low calorie diet

2: Low carbohydrate diet

3: Low fat diet

4: Low calorie, low carbohydrate diet

279-: The general test for detection of carbohydrates is

1: Iodine test

2: Molisch test

3: Barfoed test

4: Osazone test

280-: Pyruvate dehydrogenase complex requires all the following coenzymes, Except

1: FAD

2: NAD+

3: THF

4: TPP

281-: Excess of which of following can result in cataract

1: Sugar alcohol

2: Glucose

3: Sugar amines

4: Galactose

282-: Pyruvate dehydrogenase enzyme complex contains the following cofactors except

1: Thiamine pyrophosphate

2: Coenzyme A

3: Flavin adenine dinucleotide (FAD)

4: Nicotinamide adenine dinucleotide phosphate NADP

283-: Hepatic glycogen storage depletes in how much time during starvation -

1: 18hrs

2: 36 hrs

3: 72hrs

4: 48 hrs

284-: What is not given in fructose intolerance patient:

1: Glucose

2: Galactose

3: Fructose

4: Maltose

285-: Dehydrogenase in HMP shunt acts on oxidative phase to Generate_____.

1: NADP+

2: NADPH

3: FAD+

4: FADH

286-: In well fed state which of the following inhibit CPT1 on outer membrane of mitochondria:

1: Malonyl CoA

2: Acetyl CoA

3: ADP

4: Glucose

287-: Glucose can be synthesised from all except:

1: Amino acids

2: Glycerol

3: Acetoacetate

4: Lactic acid

288-: Muscle cannot make use of glycogen for energy because of deficiency of

1: Glucokinase

2: Phosphoglucomutase

3: G-6-phosphatase

4: Muscle phosphorylae

289-: Glucagon receptors are NOT found in which organ:

1: Cornea

2: Kidney

3: Stomach

4: Adrenal gland

290-: Dehydrogenases of HMP shunt are specific for:

1: TPP

2: NADP+

3: FMN

4: FAD

291-: In Gaucher&;s diseases, there is deficiency of

1: Glucocerebrosidase

2: Glucokinase

3: Sphingomyelinase

4: G-6PD

292-: Gluconeogenesis in fasting state is stimulated by:

1: Pyruvate kinase stimulated by citrate

2: Activation of pyruvate carboxylase by acetyl Co-A

3: Activation of pyruvate kinase by fructose 1, 6-bisphosphate

4: Stimulation of phosphofructokinase-1 by fructose 2, 6-bisphosphate

293-: Pyruvate can be conveed directly into all of the following EXCEPT:

1: Phosphoenol Pyruvate

2: Alanine

3: Acetyl CoA

4: Lactate

294-: Not an aldose sugar

1: Erythrose

2: Glucose

3: Fructose

4: Galactose

295-: Severe hypoglycemia, increased uric acid and renal failure are seen in?

1: Carbohydrate metabolic disorder

2: Glycogen storage disorder

3: Lipoprotein deficiency disorder

4: Protein folding disorder

296-: Beta-glucosidase is defective in which disease?

1: Gaucher's disease

2: Tay-Sachs disease

3: Galactosaemia

4: DM

297-: Glycolytic enzyme(s) inhibited by fluoride

1: Hexokinase

2: Aldolase

3: Enolase

4: Pyruvate kinase

298-: Fluoride inhibits which enzyme -

1: Enolase

2: Pyruvate dehydrogenase

3: Phosphofructokinase

4: Glucokinase

299-: Which of the following enzyme is absent in muscle?

1: Glucose-1-phosphatase

2: Glucose 6 phosphatase

3: Glycogen phosphorylase

4: Thiophorase

300-: Products of HMP shunt are all except:

1: Glyceraldehyde 3-P

2: Glycerol-3-P

3: 3CO2

4: 6NADPH

301-: Oxaloacetate is formed from

1: Glutamate

2: Histidine

3: Aspaate

4: Alanine

302-: G-6-PD deficiency causes

1: Leukemia

2: Hemolytic anemia

3: Hemophilia

4: None

303-: Major contribution towards gluconeogenesis

1: Ketones

2: Alanine

3: Lactate

4: Glycine

304-: A baby is hypotonic and shows increased ratio of Pyruvate to Acetyl CoA. Pyruvate cannot form Acetyl CoA in fibroblast. He also shows features of lactic acidosis. Which of the following can revert the situation?

1: Biotin

2: Pyridoxine

3: Free fatty acid

4: Thiamin

305-: Which of the following is reversible enzyme:

1: Pyruvate kinase

2: Pyruvate dehydrogenase

3: Lactate dehydrogenase

4: Hexokinase

306-: G6PD stands for

1: Glucose 6 phosphatase dehydratase

2: Glucose 6 phosphate dehydrogenase

3: Glucose 6 phosphodiesterase

4: Glucose 6 phosphate decarboxylase

307-: All of the following are true about fructose-1-6-bisphosphatase, EXCEPT:-

1: Key gluconeogenic enzyme

2: Fructose-2,6, bisphosphate is an allosteric activator of this enzyme

3: Catalyses the hydrolysis reaction

4: Requires magnesium for the catalysis

308-: Gaucher&;s disease is caused by deficiency of

1: Ceramidase

2: Be ta galactosidase

3: Beta glucosidase

4: Spingomyelinase

309-: Glucose transporter in neuron is -

1: GLUT-1

2: GLUT-2

3: GLUT-3

4: GLUT-4

310-: Oxidation of lactate to pyruvate requires which vitamin -

1: Riboflavin

2: Niacin

3: Folic acid

4: Biotin

311-: Maximum number of enzymes of krebs cycle are found in -

1: Mitochondrial matrix

2: Intermembrane space

3: Cytosol

4: Ribosome

312-: Essential pentosuria is seen in defect of which pathway?

1: HMP shunt

2: Uronic acid pathway

3: TCA cycle

4: Gluconeogenesis

313-: In an embryo with a complete deficiency of pyruvate kinase, how many net moles of ATP are generated in the conversion of 1 mole of glucose through the glycolytic pathway?

1: 0

2: 1

3: 2

4: 3

314-: Substrate for gluconeogenesis -

1: Acetyl-CoA

2: Fatty acid

3: Pyruvic acid (pyruvate)

4: All of the above

315-: Which color in benedict's test indicate that no sugar is present?

1: Blue

2: Green

3: Orange

4: Brick red

316-: Energy source of brain in later pa of starvation

1: Glucose

2: Fatty acids

3: Ketonis

4: Glycogen

317-: Rate limiting step of TCA :

1: Citrate synthase

2: Isocitrate dehydrogenase

3: Alpha-ketoglutarate dehydrogenase

4: All

318-: A chronic alcoholic has recently had trouble with their ability to balance, becomes easily confused, and displays nystagmus. An assay of which of the following enzymes can determine a biochemical reason for these symptoms?

1: Isocitrate dehydrogenase

2: Transaldolase

3: Glyceraldehyde-3-phosphate dehydrogenase

4: Transketolase

319-: A genetic disorder renders fructose 1,6 bisphosphatase in liver less sensitive to regulation by fructose 2,6- bisphosphate. All of the following metabolic changes occur EXCEPT:

1: Level of fructose 1,6 bisphosphate is higher than normal

2: Level of fructose 1,6 bisphosphate is lower than normal

3: Less Pyruvate formed

4: Less ATP formed

320-: AST/ALT > 2 is seen in deficiency of

1: G-6-phosphatase

2: Branching enzyme

3: Acid maltase

4: Liver phosphorylase

321-: TCA cycle depends on availability of :

1: Acetyl CoA

2: Oxaloacetate

3: Insulin

4: Glucagon

322-: Sandhoff's disease is d/t absence of which enzyme?

1: Beta-hexosaminidase

2: Beta-glucuronibase

3: Aryl sulphatase

4: Alpha galactosidase

323-: Cori's cycle is concerned with transport of -

1: Alanine

2: Glutamate

3: Lactate

4: None

324-: Final common pathway of metabolism of carbohydrates, lipids and protein metabolism is

1: TCA cycle

2: Glycogenesis

3: Gluconeogenesis

4: None of the above

325-: Main enzyme for glycogen metabolism

1: Glucose-6-phosphatase

2: Glycogen synthase

3: PFK-1

4: None of the above

326-: Gluconeogenesis takes place in

1: Liver

2: RBC

3: Adipocyte

4: Myocyte

327-: Fructose is transported by -

1: GLUT 5

2: GLUT 4

3: GLUT 3

4: GLUT 7

328-: In glycolysis, the first committed step is catalyzed by

1: 2,3 DPG

2: Hexokinase

3: Pyruvate kinase

4: Phosphofructokinase

329-: Which of the following enzymes does NOT take pa in the conversion of lactate to phosphoenolpyruvate?

1: Lactate dehydrogenase

2: Pyruvate kinase

3: Pyruvate kinase

4: Pyruvate carboxylase

330-: All are reducing sugars except

1: Sucrose

2: Lactose

3: Glucose

4: Fructose

331-: Which of the following pathway is the major energy providing pathway for fast-twitch muscle?

1: Glycolysis

2: b oxidation of fatty acids

3: Utilisation of ketone bodies

4: Amino acid breakdown

332-: Gluconeogenesis occurs in all except

1: Liver

2: Kidney

3: Gut

4: Muscle

333-: Immediate metabolic products after breakdown of Fructose 1-6 bisphosphate in glycolysis:

1: 3-phosphoglycerate and 1,3 bisphosglycerate

2: Glyceraldehyde -3-phosphate and 1,3-bisphosphoglycerate

3: Dihydroxyacetone phosphate and dihydroxyacetone phosphate

4: Glyceraldehyde-3-phosphate and dihydroxyacetone phosphate

334-: The conversion of propionyl CoA to succinyl CoA requires the following vitamins/coenzymes

1: Thiamine pyrophosphate

2: FAD and NAD+

3: Coenzyme A

4: Biotin and B12

335-: Not an example of substrate level phosphorylation

1: Phosphofructokinase

2: Succinyl thiokinase

3: Pyruvate kinase

4: Phosphoglyccerate kinase

336-: An enzyme involved in fructose metabolism is:

1: Glucokinase

2: Glyceraldehyde-3-P Dehydrogenase

3: Aldolase A

4: PFK-1

337-: Another name for glucose -

1: Dextrin

2: Dextrose

3: Sucrose

4: Saccharin

338-: Structure of triglyceride is -

1: 2 molecules of FA + Glycerol

2: 3 molecules of FA + Glycerol

3: 2 molecules of FA + 2, 3 DPG

4: 3 molecules of FA + 2, 3 DPG

339-: Mutarotation refers to change in

1: pH

2: Optical rotation

3: Conductance

4: Chemical propeies

340-: Site of glycolysis -

1: Cytoplasm

2: Mitochondria

3: Nucleus

4: Endoplasmic reticulum

341-: Which of the following is not a glycogen storage disorder -

1: Lesch Nyhan syndrome

2: Me Ardle's disease

3: Pompe's disease

4: Von-Gierke's disease

342-: All are substrates for gluconeogenesis except

1: Lactate

2: Propionate

3: Alanine

4: Acetyl-CoA

343-: Rate limiting enzyme in glycolysis

1: Phosphofructokinase

2: Glucose 6 dehydrogenase

3: Pyruvate kinase

4: Pyruvate carboxylase

344-: Which of the following statement is true-

1: Glucose is a ketose

2: Glucose is a C2 epimer of fructose

3: Glucose is a C4 epimer of galactose

4: Ribose and Fructose are epimers

345-: The metabolite that is regarded as the dead end in glycolysis

1: Pyruvate

2: Lactate

3: 2,3-bisphosphoglycerate

4: 3-phosphoglycerate

346-: Most common enzyme deficiency causing hemolytic anemia?

1: Pyruvate kinase

2: Hexokinase

3: Glucose-6-phosphate dehydrogenase

4: Gucosephosphate isomerase

347-: Debranching enzyme in glycogenolysis hydrolyzes which one of the following bonds to release free glucose?

1: a (1-4)

2: a (1-6)

3: p (1-4)

4: 3 (1-6)

348-: Second messengers, DAG and IP3 are formed from

1: Phosphatidyl choline

2: Phosphatidyl ethanolamine

3: Phosphatidyl serine

4: Phosphatidyl inositol

349-: Which of the following is a component of Chitin polysaccharide -:

1: Ascorbic acid

2: Glucosamine

3: Synovium

4: Glucuronic acid

350-: McArdles disease is due to the deficiency of:

1: Glucose 1 phosphatase

2: Glucose 1, 6 diphosphatase

3: Glucose 6 phosphatase

4: Myophosphorylase

351-: Fatty acid is not utilized by:

1: RBC

2: Skeletal muscle

3: Liver

4: Heart

352-: Reverse folding of proteins is carried out by which enzyme -

1: Valine

2: Threonine

3: Chaperone

4: Aspartate

353-: Collagen has which amino acid?

1: Tryptophan

2: Glycine

3: Theonine

4: Tyrosine

354-: Which of the following condition causes hyperuricemia due to both increased production and decreased excretion?

1: PRPP Synthetase over activity

2: Glucose-6-phosphatase Deficiency

3: HGP deficiency

4: Renal failure

355-: Not an intermediate product of citric acid cycle is:

1: Acyl Co-A

2: Succiny1 Co-A

3: Citrate

4: a-ketoglutarate

356-: Inhibition of glycogenolysis and gluconeogenesis is caused by -

1: Insulin

2: Glucogon

3: Glucocorticoid

4: Epinephrine

357-: All the following are features of Von Gierke disease except

1: Hypoglycemia

2: Lactic acidosis

3: Hyperlipidemia

4: Muscle hypotonia

358-: Which of the following is a homopolysaccharide?

1: Heparin

2: Chitin

3: Chondroitin sulphate

4: Hyaluronic acid

359-: n humans carbohydrates are stored as:

1: Glucose

2: Glycogen

3: Starch

4: Cellulose

360-: Transketolase requires

1: FAD

2: TPP

3: PLP

4: FMN

361-: Which of the following is action of insulin -

1: Gluconeogenesis

2: Increased glucose uptake in muscle

3: Glycogenolysis

4: Increased glucose uptake in endothelium

362-: Which molecule is regarded as carrier of TCA cycle ?

1: Acetyl CoA

2: Oxaloacetate

3: Citrate

4: ATP

363-: Cyclic AMP increase the rate of glycogenolysis by

1: Promoting the formation of phosphorylase

2: Acting as a cofactor for glycogen phosphorylase

3: Furnishing phosphate for the phosphorylysis of glycogen

4: Acting as a precursor of 5' AMP which is a cofactor for glycogen phosphorylase

364-: Starch is a:

1: Polysaccharide

2: Disaccharide

3: Protein

4: None of these

365-: All of the following TCA cycle enzymes are located in the mitochondrial matrix, EXCEPT

1: Alpha-ketoglutarate dehydrogenase

2: Isocitrate dehydrogenase

3: Succinate dehydrogenase

4: Malate dehydrogenase

366-: THEME AND FOCUS: GLYCOLYSIS Case Study: A 42-year-old man presented with symptoms of weakness, fatigue, shoness of breath, and dizziness. His hemoglobin level was less than 7 g/dl (normal for a male being greater than 13.5 g/dl). Red blood cells of the patient showed abnormally low level of lactate production. Heinz bodies were not found in PBF. Lead Question: Deficiency of which one of the following enzymes would be the most likely cause of this patient's anemia?

1: Phosphoglucose isomerase

2: G6PD

3: Pyruvate kinase

4: Hexokinase

367-: This pathway is occurring in which cell of the body:

1: RBCs

2: Liver

3: Muscles

4: Brain

368-: True about glycolysis are all except

1: Provide nutrition to cancer cells

2: Substrate level phosphorylation at pyruvate kinase

3: Two carbon end product is formed

4: NADPH is formed by glyceraldhyde-3-phosphate dehydrogenase

369-: End product of glycolysis in RBC is

1: Pyruvate

2: Lactic acid

3: Acetyl CoA

4: Oxaloacetate

370-: Which of the following is a homopolysaccharide

1: Heparin

2: Chitin

3: Chondroitin sulphate

4: Hyaluronic acid

371-: Giucose-6-phosphatase is absent or deficient in:

1: Von Gierke's disease

2: Pompe's disease

3: Cori's disease

4: McArdle's disease

372-: PFK-1 is inhibited by:

1: Insulin

2: Citrate

3: Glucose-6-phosphate

4: AMP

373-: All of the following take pa in oxidative phosphorylation except

1: NADH

2: FADH2

3: NADPH

4: ATP

374-: Co-factor for phosphofructokinase is -

1: Mg+2

2: Mn+2

3: Fe+2

4: Zn

375-: Which of the following is required to bring about gluconeogenesis from pyruvate?

1: Pyruvate dehydrogenase

2: Biotin

3: Alpha ketoglutarate dehydrogenase

4: Fructose-6 phosphate

376-: Coris disease is due to defect in

1: Branching enzyme

2: Debranching enzyme

3: Myophosphorylase

4: Hepatic phosphorylase

377-: A middle aged woman on oral contraceptives for many years, developed neurological symptoms such as depression, irritability, nervousness and mental confusion. Her hemoglobin level was 8g/dl. Biochemical investigations revealed that she was excreting highly elevated concentrations of xanthurenic acid in urine. She also showed high levels of triglycerides and cholesterol in serum. All of the above findings are most probably related to vitamin B6 deficiency caused by prolonged oral contraceptive use except :

1: Increased urinary xanthurenic acid excretion

2: Neurological symptoms by decreased synthesis of biogenic amines

3: Decreased hemoglobin level

4: Increased triglyceride and cholesterol level

378-: All of the following enzymes catalyze irreversible steps in glycolysis EXCEPT:

1: Hexokinase

2: PFK-I

3: Enolase

4: Pyruvate kinase

379-: In glycogen metabolism, a metabolically active impoant enzyme found in liver is conveed from it's inactive dephosphorylated state to it's active phosphorylated state. Which of the following is true about this enzyme:

1: Phosphorylation sometimes activates the enzyme

2: Catecholamines directly stimulate it

3: More commonly seen in fasting state than in fed state

4: Always activated by cAMP dependent protein kinase

380-: GAG affected in Sanfilippo syndromes is

1: Dermatan sulfate

2: Heparan sulfate

3: Keratan sulfate

4: Chondroitin sulfate

381-: Enolase is inhibited by -

1: Fluoride

2: Fumarate

3: lodoacetaie

4: Arsenite

382-: After an overnight fasting , GLUTs are reduced in:

1: Brain

2: RBC

3: Kidney

4: Adipose tissues

383-: Seliwanoff's test is positive in:

1: Glucose

2: Fructose

3: Galactose

4: Mannose

384-: Anaerobic glycolysis occurs in all except

1: RBCs

2: Lens

3: Brain

4: Testis

385-: Rate limiting enzyme in glycolysis?

1: Glucokinase

2: Phosphofructokinase-1

3: Phosphoglycerate kinase

4: Enolase

386-: Inhibition of glycolysis by increased supply of O2 is

1: Crabtree effect

2: Pasteur effect

3: Lewis effect

4: Warburg effect

387-: Galactosemia is due to the deficiency of:

1: Galactose-1-Phosphatase

2: Glucose-1-Phosphatase

3: Galcatose-1-Phosphate uridyl transferase

4: Glucose-6-Phosphatase

388-: Gluconeogenesis in Fasting state is indicated by

1: Citrate activation by acetyl co-a carboxylase

2: Pyruvate Carboxylase activation by Acetyl CoA

3: Fructose 1,6 bisphosphate activates Pyruvate Kinase

4: Fructose 2,6 bisphosphate activates PFK-1

389-: Pentose pathway is essential for the production of

1: NAD

2: FAD

3: NADPH

4: NADH

390-: First substrate of Kreb's cycle is:

1: Pyruvate

2: Glycine

3: Citrate

4: Acetyl CoA

391-: A patient with type 1 diabetes self-injected insulin prior to their evening meal, but then was distracted and forgot to eat. A few hours later, the individual fainted, and after the paramedics arrived, they did a STAT blood glucose level and found it to be 45 mg/dL. The blood glucose level was so low because which one of the following tissues assimilated most of it under these conditions?

1: Brain

2: Liver

3: Red blood cells

4: Adipose tissue

392-: Which of the following carbohydrate metabolism is used for liver function assessment?

1: Galactose intolerance test

2: Sucrose intolerance test

3: Glucose intolerance test

4: Lactose intolerance test

393-: Mucopolysaccharide hyaluronic acid is present in

1: Vitreous humor

2: Cornea

3: Blood vessels

4: Lens

394-: Von Gierke&;s disease is due to the deficiency of

1: Gluc-6 phosphatase

2: Glue-1 phosphatase

3: Branching enzyme

4: Mycophosphorylase

395-: Pair of organs involved in cahill cycle?

1: Liver and muscle

2: liver and kidney

3: liver and brain

4: muscle and kidney

396-: Gluconeogenesis occurs in -

1: Muscle

2: Neurons

3: Spleen

4: Liver

397-: Which dissacharies are not broken down in git -

1: Lactulose

2: Maltose

3: Sucrose

4: Lactose

398-: A four-year-old child with exercise intolerance. On investigation Blood pH 7.3, FBS 60 mg%, hypertriglyceridemia, ketosis and lactic acidosis. The child had hepatomegaly and renomegaly. Biopsy of liver and kidney showed increased glycogen content. What is the diagnosis?

1: McCardle's disease

2: Cori's disease

3: Von Gierke's disease

4: Pompe's disease

399-: Which enzyme is active when Insulin: Glucagon ratio is low?

1: Glucokinase

2: Hexokinase

3: Glucose-6-phosphatase

4: Pyruvate carboxylase

400-: Coris disease is due to defect in -

1: Branching enzyme

2: Debranching enzyme

3: Myophosphorylase

4: Hepatic phosphorylase

401-: Major metabolic pathway in Erythrocytes?

1: b-Oxidation

2: Citric acid cycle

3: Gluconeogenesis

4: Pentose phosphate pathway

402-: Which one of the following metabolites is used by all cells for glycolysis, glycogen synthesis, and the hexose monophosphate shunt pathway?

1: Glucose-1-phosphate

2: Glucose-6-phosphate

3: UDP-glucose

4: Fructose-6-phosphate

403-: In glycogen, the linkage at branch points is

1: Alpha -1,4

2: Alpha-2,3

3: Alpha-1,6

4: ss-1,4

404-: Which of the following is defective in renal glycosuria:

1: GLUT- 1

2: GLUT- 2

3: SGLT- 1

4: SGLT- 2

405-: Hexosaminidase A deficiency causes

1: Tay-sach disease

2: Niemann pick disease

3: Gaucher's disease

4: Krabbe's disease

406-: Enzyme deficiency in Von Gierke disease is

1: Glycogen synthase

2: Glucose-6-phosphatase

3: Branching enzyme

4: Muscle phosphorylase

407-: Fluoride inhibits?

1: Enolase

2: Aldolase

3: Aromatase

4: None of these

408-: G-6- Phosphatase deficiency is seen in: (PGI Dec 2006)

1: Von Gierke's disease

2: Taysach's disease

3: Pompe's disease

4: Anderson's disease

409-: 1st carbon of pentose sugar of nucleic acid joins

1: N-9 of pyrimidine

2: N-1 of pyrimidine

3: N-1 of purine

4: N-8 of purine

410-: ATP produced substrate level phosphorylation in glycolysis is:

1: 5

2: 6

3: 4

4: 3

411-: Which of the following pathway produces the least number of ATPs?

1: Glycolysis

2: Glycogenolysis

3: TCA cycle

4: HMP shunt

412-: In muscles, how many ATPs are produced from the conversion of one glucose residue in the linear chain of glycogen to lactic acid i.e ,anaerobic glycolysis ?

1: 1

2: 2

3: 3

4: 4

413-: Enzyme deficiency in Pompe's disease?

1: Glycogen synthase

2: Liver debranching enzyme

3: Acid maltase

4: Muscle phosphorylase

414-: Lactose on hydrolysis yeilds -

1: 2 molecules of fructose

2: 2 molecules of glucose

3: One molecule of glocuse and one molecule of fructose

4: One molecule of glocuse and one molecule of galactose

415-: Reducing equivalents produced in glycolysis are transpoed from cytosol to mitochondria by

1: Carnitine

2: Creatine

3: Malate shuttle

4: Glutamate shuttle

416-: All the following enzymes catalyze physiologically irreversible reactions of glycolysis except

1: Hexokinase

2: Phosphofructokinase

3: Pyruvate kinase

4: Enolase

417-: Reverse folding of proteins is carried out by which enzyme?

1: Valine

2: Threonine

3: Chaperone

4: Aspaate

418-: Tricarboxylic acid cycle does not occur in

1: Myocyte

2: Red blood cell

3: Neuron

4: Hepatocyte

419-: Following are the test done for proteins, sugar & ketones. Which will be positive in starvation state in urine?

1: 1 & 2

2: Only 2

3: Only 3

4: 2 & 3

420-: The most important function of 23 DPG is

1: O2 release

2: O2 binding

3: Acid base balance

4: Water electrolyte balance

421-: Which of the following when absent would impair the rate-limiting step of glycogenolysis?

1: 1,4-Glucoronosyl troanterase

2: Glycogen synthetase

3: Glycogen phosphorylase

4: Phosphoglucomutase

422-: Cofactor for Glycogen phosphorylase in Glycogenolysis is

1: Thiamine pyrophospohate

2: Pyridoxal phosphate

3: Citrate

4: FAD

423-: The hallmarks of type Ia glycogen storage disease are all of the following except

1: Hypoglycemia

2: Metabolic alkalosis

3: Hyperuricemia

4: Hyperlipidemia

424-: Arrange the steps of glycogenolysis in sequence: A. Formation of limit dextrins B. Transfer of glucose residues from branched chain to neighbouring straight chain (Glucan Transferase) C. Break down alpha(1-4) bond from non reducing end D. Break down of alpha (1-6)bond

1: A - D - B- C

2: D - C - B- A

3: D - B - C- A

4: C - A - B- D

425-: Conversion of fat to glucose is

1: Glycolysis

2: Kreb's cycle

3: Gluconeogenesis

4: Saponification

426-: NAD+ is reduced to NADH + H+ by dehydrogenases of all the following substrates, Except

1: Pyruvate

2: Glyceraldehyde-3-phosphate

3: Malate

4: Succinate

427-: The following types of reaction occur in glycolysis, except

1: Hydration

2: Isomerisations

3: Phosphoryl transfer

4: Aldol cleavage

428-: Enzyme imiglucerase (Cerezyme) is used in the treatment of-

1: Gaucher's disease

2: Galactosemia

3: Niemann Pick disease

4: Trans-maxillary approach

429-: The net ATP yield when one molecule of pyruvate is completely oxidized to CO2 & H2O is:

1: 12.5

2: 15

3: 18

4: 30

430-: Insulin causes decrease in activity' of which enzyme-

1: PFK-1

2: Glucokinase

3: Pyruvate Carboxylase

4: Acetyl CoA Carboxylase

431-: Name the enzyme which catalyses substrate level phosphorylation in glycolysis -

1: Glyceraldehyde 3 phosphate dehydrogenase

2: Enolase

3: Pyruvate kinase

4: Phosphofuctokinase I

432-: Conversion of lactate to glucose requires all except

1: Pyruvate carboxylase

2: Phosphofructokinase

3: PEP carboxykinase

4: Glucose-6-phosphatase

433-: Which of the following is most effective for gluconeogenesis:

1: Fructose 2,6 bisphosphate inhibits fructose 1,6 Bisphosphatase

2: Acetyl CoA activates Pyruvate carboxylase

3: Acetyl CoA inhibits Pyruvate carboxylase

4: Citrate activates Acetyl CoA carboxylase

434-: Which of the enzyme of glycolysis is used in gluconeogenesis?

1: Glucokinase

2: PFK

3: Pyruvate kinase

4: Phosphohexose isomerase

435-: In anaerobic glycolysis, end product is -

1: 2 ATP + 2 NAD

2: 2 ATP

3: 2 ATP + 2 NADH

4: 4 ATP + 2 FADH2

436-: Which of the following do not generate ATP?

1: Citric Acid cycle

2: Kreb's cycle

3: Glycolysis

4: HMP shunt

437-: Arsenite inhibits

1: Enolase

2: G-6-PD

3: Alpha ketoglutarate dehydrogenase

4: Hexokinase

438-: Epimer combination (s) is/are

1: D-glucose & D-fructose

2: D-mannose & D-talose

3: D-glucose & D-mannose

4: D-glucose & D-gulose

439-: Lactate is formed in all EXCEPT:

1: Testis

2: Lens

3: Brain

4: RBCs

440-: Hyperammonemia impairs Citric acid cycle by depleting

1: Pyruvate

2: a-ketoglutarate

3: Oxaloacetate

4: Succinate

441-: Key enzyme of gluconeogenesis are all except

1: Pyruvate carboxylase

2: PEP carboxykinase

3: Pyruvate kinase

4: Glucose-6-phosphatase

442-: In the Krebs cycle, Malonate competitively inhibits

1: Isocitrate dehydrogenase

2: Succinate thiokinase

3: Succinate dehydrogenase

4: a-Ketoglutarate dehydrogenase

443-: Caffeine, a methyl xanthine, has been added to a variety of cell types. Which one of the following would be expected in various cell types treated with caffeine and epinephrine?

1: Decreased activity of liver PKA

2: Decreased activity of muscle PKA

3: Increased activity of liver pyruvate kinase

4: Decreased activity of liver glycogen synthase

444-: Importance of pyruvate to lactate formation in anaerobic glycolysis is production of:

1: FAD

2: NADHtoNAD

3: ATP

4: NAD to NADH

445-: Glycolysis occurs in

1: Cytosol

2: Mitochondria

3: Nucleus

4: Lysosome

446-: Amphibolic cycle is

1: Citric acid cycle

2: Glycolysis

3: Protein synthesis

4: Lipolysis

447-: Inhibition of glycolysis is increased supply of O2 is

1: Crabtree effect

2: Pasteur effect

3: Lewis effect

4: Krebs effect

448-: Test to differentiate monosaccharide from disaccharides?

1: Benedicts test

2: Selivinoff's test

3: Barfoed's test

4: Rapid furfural test

449-: Phosphofructokinase is the key enzyme of -

1: Glycogenolysis

2: Glvcogenesis

3: Glycolysis

4: TC A cycle

450-: In what form does the product of glycolysis enter the TCA cycle?

1: Acetyl-coA

2: Pyruvate

3: NADH

4: Glucose

451-: Anticoagulant used to estimate glucose from a sample sent from PHC is

1: EDTA

2: Calcium oxalate

3: Potassium oxalate + NaF

4: Sodium citrate

452-: Which of the following is insulin dependent for it's action?

1: GULT-1

2: GULT-2

3: GULT-3

4: GULT-4

453-: Lactose on hydrolysis yields

1: 2 molecules of fructose

2: 2 molecules of glucose

3: One molecule of glucose and one molecule of fructose

4: One molecule of glucose and one molecule of galactose

454-: A child with low blood glucose is unable to do glycogenolysis or gluconeogenesis. Which of the following enzyme is missing in the child?

1: Fructokinase

2: Glucokinase

3: Glucose 6 Phosphatase

4: Transketolase

455-: All of the following are true about von Gierke&;s disease except

1: G-6 Phosphatase deficiency

2: Hypoglycemia unresponsive to epinephrine but not glucagon

3: Glycogen accumulates in kidney and liver

4: Hyperglycemia

456-: After 50 gm of glucose of feed orally

1: Decrease ketone body production

2: Increased lactate production upon exercise

3: Decreased gluconeogenesis

4: Increased gluconeogenesis

457-: Inorganic phosphate is used in which enzyme of glycolysis?

1: Glucose-6-phosphatase

2: Phospho fructokinase

3: Phosphoglycerate kinase

4: Enolase

458-: Among the following food items, which one has the highest "Glycemic Index"?

1: Corn flakes

2: Brown rice

3: Ice-cream

4: Whole wheat bread

459-: Glycogen storage disorder due to muscle phosphorylase deficiency -

1: McArdle's disease

2: Pompe's disease

3: Andersen's disease

4: Tarui's disease

460-: Regarding HMP shunt all of the following are true except

1: Occurs in the cytosol

2: No ATP is produced in the cycle

3: It is active in Adipose tissue, Liver and Gonads

4: The oxidative phase generates NADPH and the Non oxidative phase generates pyruvate

461-: Which of the following statements about GLUT is false?

1: GLUT-2 is needed in brain

2: GLUT-3 is present in placenta

3: GLUT-4 is present in adipose tissue

4: GLUT-3 is present in both intestine and testis

462-: Fluoroacetate acts on ---- enzyme to inhibit the Citric acid cycle?

1: Citrate synthase

2: Aconitase

3: Succinate dehydrogenase

4: a-ketoglutarate

463-: In glycogen metabolism, amylo 1-6-glycosidase acts on glycogen to produce?

1: Glucose-l-phosphate

2: Glucose-6-phosphate

3: Maltose

4: Glucose

464-: A male patient came with pain in calf muscles in exercise. On biopsy glycogen present in the muscle. What is the enzyme eficiency?

1: Branching enzyme

2: Phosphofructokinase I

3: Debranching enzyme

4: Glucose 6 phosphatase

465-: Chitin held together by

1: a (1 - 4) glycosidic bond

2: a (1 - 6) glycosidic bonds

3: b (1 - 4) glycosidic bond

4: b (1 - 6) glycosidic bonds

466-: Which of the following substrates can't contribute to net gluconeogenesis in mammalian liver?

1: Alanine

2: Glutamate

3: Palmitate

4: Pyruvate

467-: All the following are increased in fasting except:

1: Lipolysis

2: Ketogenesis

3: Gluconeogenesis

4: Glycogenesis

468-: NADPH+, H+ is generated in the reaction catalyzed by

1: LDH

2: G-6-PD

3: G-3-PD

4: Alcohol dehydrogenase

469-: What is the precursor of proline in Krebs cycle?

1: Oxaloacetate

2: a-ketoglutarate

3: Succinyl CoA

4: Fumarate

470-: Tyrosine enters at which level in citric acid cycle-

1: Succinyl CoA

2: Fumarate

3: Pyruvate

4: a-ketoglutarate

471-: Glucose 6-phosphatase deficiency occurs in

1: Gaucher's disease

2: Von Gierke's disease

3: Pompe's disease

4: Hurler's disease

472-: All of the following vitamins play a key role in the Citric acid cycle except

1: Thiamin

2: Riboflavin

3: Niacin

4: Cobalamin

473-: Cellulose is not broken due to beta anomerism at:

1: C1

2: C2

3: C5

4: C6

474-: Number of ATP molecules and NADPH formed in each cycle of glycolysis In aerobic condition,

1: 4,2

2: 2,2

3: 4,4

4: 2,4

475-: Which of the following intermediates of TCA cycle is depleted in Type-I Diabetes mellitus to suppress TCA cycle?

1: Succinate

2: Malate

3: a-Ketoglutarate

4: Oxaloacetate

476-: Substrate level phosphorylation in citric acid cycle is catalysed by -

1: Pyruvate kinase

2: Phosphogly cerate kinase

3: Malate dehydrogenase

4: Succinate thiokinase

477-: Glucokinase:

1: Is widely distributed and occurs in most mammalian tissues

2: Has a high km for glucose and hence is important in the phosphorylation of glucose primarily after ingestion of a carbohydrate rich meal

3: Is widely distributed in Prokaryotes

4: None of these

478-: In Anaerobic glycolysis, there is gain of -

1: 2 ATP + 2 NAD

2: 2 ATP

3: 2 ATP + 2 NADH

4: 4 ATP + 2 FADH2

479-: In glycolysis which of the following is not involved?

1: Pyruvate dehydrogenase

2: Phosphofructokinase

3: Glucokinase

4: Pyruvate kinase

480-: Pentose pathway produces

1: ATP

2: NADPH

3: ADP

4: Acetyl CoA

481-: The number of ATPs produced by HMP shunt is

1: Zero

2: One

3: Two

4: Four

482-: The following vitamin acts as a cofactor for glycogen phosphorylase:

1: Thiamine pyrophosphate (B1)

2: Riboflavin (B2)

3: Pyridoxal phosphate (B6)

4: Methyl cobalamin (B12)

483-: Which deposition result in cataract?

1: Glucose

2: Galactose

3: Sugar amines

4: Sugar alcohols

484-: Glycogen phosphorylase is active in

1: Phosphorylated form

2: Dephosphorylated form

3: Both phosphorylated & dephosphorylated form

4: No rate of phosphorylation

485-: Branching enzyme in used in -

1: Glycogenesis

2: Glycogenolysis

3: Gluconeogenesis

4: Glycolysis

486-: Which of the following is a homopolysaccharide-

1: Heparin

2: Chitin

3: Hyaluronic acid

4: Chondroitin sulfate

487-: Gluconeogenesis is mainly seen in:

1: Kidney

2: Liver

3: Spleen

4: Heart

488-: Which of the following is a primer acting as an acceptor of glucose residues in glycogenesis?

1: Carbohydrate

2: Lipid

3: Protein

4: Nucleic acid

489-: Pompe's disease is due to deficiency of:

1: Acid maltase

2: Muscle phosphorylase

3: Branching enzyme

4: Debranching enzyme

490-: A 3-year-old boy was found to have reduced red blood cell (RBC) numbers yet exhibited very few signs of anemia. An analysis of labeled RBCs indicated a greatly reduced ATP yield as compared to someone without the anemia. In this child, which one of the following would be expected to increase in RBC?

1: The life span of the RBCs

2: The rate of fatty acid oxidation

3: ATP production

4: The levels of 2,3-bisphosphoglycerate

491-: Gaucher's disease is due to deficiency of enzyme -

1: Sphingomyelinase

2: b-Glucosidase

3: Hexosaminidase-A

4: b-Galactosidase

492-: Insulin Dependent glucose transport is through -

1: GLUT-2

2: GLUT-4

3: GLUT-5

4: SGLT-1

493-: Aldolase is an enzyme whose substrate is

1: Glucose -6-phosphate

2: Fructose-6-phosphate

3: Fructose

4: Fructose-1 biphosphate

494-: Most common enzyme deficiency responsible for Galactosemia is?

1: UDP galactose epimerase

2: Galaktokinase

3: Galactosidase

4: Galactose-l-phosphate uridyl transferase

495-: False regarding HMP shunt -

1: NADPH is produced

2: Ribulose 5 phosphate is produced

3: ATP is produced

4: Occurs in cytosol

496-: The enzyme phospho fructokinase 1 is strongly activated by:

1: Cyclic amp

2: Adenosine triphosphate

3: Citrate

4: Fructose 2,6 bisphosphate

497-: Branching enzyme is found in -

1: Glycogenesis

2: Glucogenesis

3: Glycogenolysis

4: Glycolysis

498-: Glycosphingolipid is made up of

1: Glucose

2: Glycerol

3: Sphingosine

4: Fatty acids

499-: Fluoroacetate inhibits

1: Citrate synthetase

2: Aconitase

3: Succinate dehydrogenase

4: Alphaketoglutarate dehydrogenase

500-: Site of Kreb's cycle -

1: Cytoplasm

2: Mitochondria

3: Smooth Endoplasmic reticulum

4: Nucleus

501-: The polysaccharide used in assessing the glomerular filtration rate (GFR) is:

1: Glycogen

2: Agar

3: Inulin

4: Hyaluronic acid

502-: Which of the following is Aldosugar?

1: Fructose

2: Erythrulose

3: Glucose

4: None

503-: Cataract in diabetes is caused by

1: Glucose

2: Sorbitol

3: Fructose

4: Sucrose

504-: Kreb's cycle and urea cycle are linked by-

1: Succinate

2: Malate

3: a ketoglutarate

4: Fumarate

505-: Within the RCBC, hypoxia stimulates glycolysis by which of the following regulating pathways?

1: Hypoxia Stimulates pyruvate dehydrogenase by increased 2, 3 BPG

2: Hypoxia inhibits hexokinase

3: Hypoxia stimulates release of all Glycolytic enzymes from Band 3 on RBC membrane

4: Activation of the regulatory enzymes by high PH

506-: Enzyme deficiency in galactosemia -

1: Glucokinase

2: Aloblase - B

3: Galactokinase

4: All of the above

507-: During lack of food in diet , how many hours are needed for depletion of glycogen:

1: 9

2: 18

3: 24

4: 48

508-: Mechanism by which pyruvate from cytosol is trans- ported to mitochondria is

1: Chloride antiport

2: Proton symport

3: ATP dependent antiport

4: Facilitated uniport

509-: Source of energy in Kreb cycle is

1: NAD

2: NADP

3: NADPH

4: NADH

510-: Flouride cause inhibition of

1: PDH

2: Enolase

3: G6PD

4: Pyruvate kinase

511-: Glycemic index is calculated with respect to -

1: Glucose

2: White Bread

3: Watermelon

4: Smashed Potato

512-: Rate limiting step in Gluconeogenesis is catalyzed by

1: Phyruvate Carboxylase

2: Glucokinase

3: Glycoral kinase

4: PDH

513-: Essential fructosuria is due to the deficiency of which enzyme?

1: Aldolase A

2: Aldolase B

3: Fructokinase

4: Glucokinase

514-: Substrate level phosphorylation in TCA cycle is in step?

1: Isocitrate dehydrogenase

2: Malate dehydrogenase

3: Aconitase

4: Succinate thiokinase

515-: The rate-limiting enzyme in glycolysis is

1: Glucose 6-dehydrogenase

2: Phosphofructokinase

3: Glucokinase

4: Pyruvate kinase

516-: All of the following are the features of glycoproteins, except :

1: Highly-branched oligosaccharide

2: Presence of amino sugar

3: Absence of glucuronic acid

4: Presence of disaccharide repeat unit

517-: The enzyme deficient in Von-Gierke&;s disease is

1: Glucose-6-phosphatase

2: Acid maltase

3: Muscle phosphorylase

4: Liver phosphorylase

518-: Phosphorylase b is maintained in an inactivated state by

1: ATP

2: cAMP

3: Calcium

4: Insulin

519-: A 3-month-old infant presents with hepatosplenomegaly and failure to thrive. A liver biopsy reveals glycogen with an abnormal, amylopectin like structure with long outer chains and missing branches. Which of the following enzymes would most likely be deficient:

1: Alpha amylase

2: Branching enzyme

3: Debranching enzyme

4: Glucose-6-phosphatase

520-: The molecule marked by blue question mark can be all of the following EXCEPT

1: Pyruvate

2: Lactate

3: Alanine

4: Glycerol

521-: In which of the following tissues, is glycogen incapable of contributing directly to blood glucose:

1: Liver

2: Muscle

3: Both

4: None

522-: Mc Ardles disease is due to deficiency of

1: Liver phosphorylase

2: Muscle phosphorylase

3: Glycogen phosphorylase

4: Galactase

523-: Which of the following fatty acids is produced by fermentation of dietary fiber by colonic flora?

1: Palmitate

2: Butyrate

3: Oleate

4: Linoleate

524-: Galactosemia enzyme defect:

1: Fructokinase

2: Glucokinase

3: Galactose 1 Phosphate Uridyl transferase

4: Glucose 6 Phosphatase

525-: NADPH in extramitochondrial site helps in the production of:

1: Ketone bodies

2: Steroids

3: Glycogen

4: None

526-: In fasted state gluconeogenesis is promoted by which enzyme?

1: Acetyl-CoA induced stimulation of Pyruvate Carboxylase

2: Citrate induced stimulation of Acetyl-CoA Decarboxylase

3: Fructose 2,6 bisphosphate induced stimulation of Phosphofructokinase-1

4: Stimulation of Pyruvate kinase by Fructose 1,6 Bisphosphate

527-: Which of the following metabolic disorders cause post-prandial hypoglycemia?

1: Glycogen storage disease type I

2: Glycogen storage disease type III

3: Fanconi-Bickel syndrome

4: Hereditary fructose intolerance

528-: Irreversible steps of Glycolysis are catalysed by:

1: Hexokinase, Phosphofructokinase, Pyruvate Kinase

2: Glucokinase, Pyruvate Kinase, Glyceraldehyde 3 Phosphate Dehydrogenase

3: Hexokinase, Phospho Glycerate Kinase, Pyruvate Kinase

4: Pyruvate Kinase, Fructose 1,6 Bisphosphatase, Phospho FructoKinase

529-: UDP glucose is not used in

1: Uronic acid pathway

2: Glycogen synthase

3: Galactose metabolism

4: HMP shunt

530-: Net gain of ATP in glycolysis

1: 5

2: 7

3: 15

4: 20

531-: Which of the following is a test to distinguish between monosaccharides and disaccharides?

1: Barfoed's test

2: Bial's Test

3: Seliwanoff's test

4: Hydrolysis test

532-: Enzyme involved in Von Girke disease is?

1: Muscle glycogen Phosphorylase

2: Glucose 6 Phosphatase

3: Debranching enzyme

4: Branching enzyme

533-: Source of energy in kerb cycle is

1: NAD

2: NADP

3: NADPH

4: NADH

534-: a keloglutarate dehydrogenase is inhibited by -

1: Fluoride

2: Fluoroacetate

3: Arsenite

4: Iodoacetate

535-: The reaction catalyzed by phosphofructokinase:

1: Is activated by high concentrations of ATP and citrate

2: Uses fructose-l-phosphate as substrate

3: Is the rate-limiting reaction of glycolytic Pathway?

4: Is inhibited by fructose 2, 6-bisphosphate

536-: Insulin mediated uptake of glucose into muscle is through?

1: GLUT 2

2: GLUT 4

3: GLUT l

4: GLUT 3

537-: Maximum energy is liberated by the hydrolysis of

1: Creatine phosphate

2: ATP

3: Phosphenol pyruvate

4: G-6-P

538-: Which pathway can use propionic acid:

1: Glycolysis

2: Gluconeogenesis

3: Glycogenolysis

4: Glycogenesis

539-: Hexose monophosphate shunt occurs in except

1: Liver

2: Adipose tissue

3: Mammary gland

4: Skin

540-: A 3-year-old girl has been a fussy eater since being weaned, particularly when fruit is part of her diet. She would get cranky, sweat, and display dizziness, and lethargy, after eating a meal with fruit. Her mother noticed this correlation, and as long as fruit was withdrawn from her diet, the child did not display such symptoms. The problems the girl exhibits when eating fruit is most likely due to which one of the following?

1: Decreased levels of fructose in the blood

2: Elevated levels of glyceraldehyde in liver cells

3: High levels of sucrose in the stool

4: Elevated levels of fructose-1-phosphate in liver cells

541-: Vitamins playing an impoant role in citric acid cycle:

1: Thiamine, riboflavin, niacin, pantothenic acid

2: Thiamine, biotin, riboflavin, lipoic acid

3: Thiamine, pyridoxine, riboflavin, niacin, pantothenic

4: Thiamine, mecobalamin, pantothenic acid

542-: Which of the following urea cycle intermediate is the link between urea cycle and TCA cycle?

1: Argininosuccinate

2: Fumarate

3: Oxaloacetate

4: Succinate

543-: Thiokinase of TCA produces:

1: ATP

2: GTP

3: NADH

4: ATP and GTP

544-: Primary link between citric acid cycle and urea cycle with

1: Malate

2: Fumarate

3: Succinate

4: Citrate

545-: Congenital lactic acidosis occur due to the deficiency of which of the following enzyme?

1: Transketolase

2: Pyruvate dehydrogenase enzyme complex

3: Pyruvate kinase

4: Pyruvate decarboxylase

546-: A 3-month-old infant was cranky and irritable, became quite lethargic between feedings, and began to develop a potbelly. A physical examination demonstrated an enlarged liver, while blood work taken between feedings demonstrated elevated lactate and

uric acid levels, as well as hypoglycemia. This child most likely has a mutation in which one of the following enzymes?

1: Liver glycogen phosphorylase

2: Glycogen synthase

3: Glucose-6-phosphatase

4: Muscle glycogen phosphorylase

547-: Lactose intolerance is due to -

1: Deficiency of Galactokinase

2: Deficiency of Uridyl transferase

3: Deficiency of Lactase

4: Deficiency of Enteropeptidase

548-: In Lysosomal storage disorders, true is

1: The lyososomes are deficient in the enzyme hydrolase

2: There is a defect in the fusion of lysosomes and phagosomes

3: There is a defect in the lysosomal membrane

4: There is increased degradation of heteroglycans

549-: Regarding HMP shunt all of the following are true except:

1: Occurs in the cytosol

2: No ATP is produced in the cycle

3: It is active in Adipose tissue, Liver and Gonads

4: The oxidative phase generates NADPH and the Non oxidative phase generates pyruvate

550-: Enzyme involved in both glycogenesis and glycogenolysis is:

1: Glycogen synthase

2: Phosphoglucomutase(PGM)

3: Phosphorylase

4: Phoshoglycero mutase

551-: True about gluconeogenesis -

1: Occurs mainly in muscle

2: It is reverse of glycolysis

3: Alanine & lactate both can serve as substrate

4: Glycerol is not a substrate

552-: Rate Limiting step of Pathway (Figure) is catalyzed by

1: Glucose-6-phosphatase dehydrogenase

2: Gluconolactone hydrolase

3: 6-phospho-gluconate dehydrogenase

4: Transketolase

553-: Which of the following is present in cornea?

1: Hyaluronic acid

2: Chondroitin sulphate

3: Dermatan sulphate

4: Heparin sulphate

554-: Net ATPs produced by substrate level phosphorylation when one molecule of fructose is conveed to two molecules of pyruvate?

1: 2

2: 3

3: 4

4: 5

555-: Muscle cannot make use of glycogen for energy because of deficiency of-

1: Glucokinase

2: Phosphoglucomutase

3: G-6-phosphatase

4: Muscle phosphorylase

556-: Km in Hexokinase and Glucokinase :

1: High in hexokinase

2: High in glucokinase

3: Same in both

4: Depends on glucose ingested

557-: Hype ram monaemia inhib it TCA cycle by depleting: (PGI June 2009)

1: Oxaloacetate

2: a-ketoglutarate

3: Citrate

4: Succinyl Co-A

558-: Step of Gluconeogenesis is:

1: Fructose-6-phosphate to glucose-6-Phosphate

2: Pyruvate to Lactate

3: Oxaloacetate to pyruvate

4: Pyruvate to Acetyl CoA

559-: All are functions of glycosaminglycans except -

1: Lubrication

2: Wound healing

3: Anticoagulant

4: Transport of lipids

560-: Enzyme deficiency in Natowicz syndrome is

1: Iduronate sulfatase

2: Hyaluronidase

3: b-Glucuronidase

4: Galactosamine 6-sulfatase

561-: Which form of Carbohydrate is present in Glycoprotein ?

1: Monosaccharide

2: Sugar alcohol

3: Homo Polysaccharide

4: Hetero Polysaccharide

562-: Net ATP formed in glycolysis is

1: 5

2: 7

3: 10

4: 15

563-: The enzyme NOT involved in substrate level phosphorylation is:-

1: Succinyl thiokinase

2: Phosphofructokinase

3: Pyruvate kinase

4: Phosphoglycerate kinase

564-: Gaucher&;s disease is due to deficiency of enzyme

1: Sphingomyelinase

2: b-Glucosidase

3: Hexosaminidase-A

4: b-Galactosidase

565-: Which of the following is an end product of glycosis in an RBC?

1: Lactic acid

2: Acettyl CoA

3: Enters krebs cycle

4: Ethanol

566-: Hexosaminidase A deficiency causes -

1: Tay-sach disease

2: Niemann pick disease

3: Gaucher's disease

4: Krabbe's disease

567-: Glucose-6-phosphate dehydrogenase deficiency causes:

1: Megaloblastic anemia

2: Hemolytic anemia

3: Sickle cell anemia

4: Microcytic anemia

568-: Which of the following is anaplerotic reaction:

1: Conversion of Pyruvate to Lactic acid

2: Conversion of Pyruvate to Oxaloacetate

3: Conversion of Pyruvate to Acetyl CoA

4: Conversion of Pyruvate to Acetaldehyde

569-: Which of the following enzyme activity decrease in fasting?

1: Hormone sensitive lipase

2: Glycogen Phosphorylase

3: Acetyl CoA Carboxylase

4: CPS I

570-: Snow flake cataract is produced because of :

1: Aldose reductase

2: Galactose reductase

3: Fructose dehydrogenase

4: Alcohol dehydrogenase

571-: ATP generated per TCA cycle is

1: 6

2: 8

3: 10

4: 12

572-: A newborn baby refuses breast milk since the second day of birth, vomits on force-feeding but accepts glucose-water, develops diarrhea on third day, by fifth day she is jaundiced with liver enlargement and eyes show cataract. Urinary reducing sugar was positive but blood glucose estimated by glucose oxidation method was found low. The most likely cause is deficiency of:

1: Galactose 1-phosphate uridyl transferase

2: Beta galactosidase

3: Glucose 6-phosphate

4: Galactokinase

573-: Major source of Acetyl CoA:

1: Triglycerides

2: Fatty acids

3: Pyruvate

4: Alanine

574-: The rate-limiting step in glycolysis is catalyzed by

1: Pyruvate kinase

2: Enolase

3: Glucokinase

4: Phosphofructokinase

575-: A breast-fed infant began to vomit frequently and lost weight. Several days later infant developed jaundice, hepatomegaly. bilateral cataract. What is possible cause for these symptoms?

1: Galactosemia

2: Juvenile Diabetes Mellitus

3: Hereditary Fructose Intolerance

4: Gaucher Disease

576-: Benedict test is for

1: Bile salts in urine

2: Bile pigment in urine

3: Reducing sugar in urine

4: Ketone bodies in urine

577-: Hypoglycemia is more severe in type 1 Glycogen storage disease as compared to type 6 Glycogen storage disease because :

1: No gluconeogenesis in type 1 disease

2: No gluconeogenesis in type 6 disease

3: Both

4: Type 1 disease affects muscles and liver both

578-: Epimer combination(s) is/are

1: D-glucose & D-fructose

2: D-glucose & D-talose

3: D-glucose & D-mannose

4: D-glucose & D-idose

579-: In Glycolysis which of the ion is most impoant?

1: Zn

2: Mg

3: Cu

4: Ca

580-: Within the RBC, hypoxia stimulates glycolysis by which of the following regulating pathways?

1: Hypoxia Stimulates pyruvate dehydrogenase by increased 2,3 DPG

2: Hypoxia inhibits hexokinase

3: Hypoxia stimulates release of all Glycolytic enzymes from Band 3 on RBC membrane

4: Activation of the regulatory enzymes by high PH

581-: Least energy producing cycle -

1: Glycolysis

2: Kreb's cycle

3: HMP shunt

4: Fatty acid oxidation

582-: Source of ribose is

1: HMP shunt

2: Glycolytic pathway

3: Uronic acid pathway

4: Beta oxidation

583-: In starv ation, there is ketosis due to -

1: Decreased acetyl CoA

2: Increased b-oxidation

3: Decreased li polys is

4: Decreased fatty acid

584-: Familial fructokinase deficiency causes no symptoms because:

1: Hexokinase can phosphorylate fructose

2: Liver aldolase can metabolize it

3: Excess fructose does not escape into the urine

4: Excess fructose is excreted through feces

585-: Glycogenolysis is best described by which of the following statements:

1: It involves enzymes cleaving beta(1- 4) glycosidic linkage

2: Requires activation of glycogen synthase

3: Requires a bifunctional enzyme (debranching and transferase)

4: Requires inactivation of phosphorylase kinase

586-: All of the following are regulating enzymes of glycolysis, except

1: Hexokinase

2: Pyruvate kinase

3: Enolase

4: Phosphofructokinase I

587-: Location of Keratan sulfate 1 is

1: Skin

2: Bone

3: Cornea

4: Lung

588-: 2 carbon atoms which leave in the form of CO2 in TCA, are derived from:

1: Acetyl CoA

2: Oxaloacetate

3: CO2

4: Citrate

589-: Which of the following is the normal Glucose Tolerance curve?

1: A

2: B

3: C

4: None

590-: Fluoride inhibits which enzyme

1: Aldolase

2: Succinate dehydrogenase

3: Pyruvate kinase

4: Enolase

591-: Fructose intolerance is due to deficiency of

1: Aldolase B

2: F ructokinase

3: Triokinase

4: Aldolase A

592-: Reducing sugar in urine can be detected by -

1: Benedicts test

2: Fehling solution

3: Glucose-oxidase test

4: All of the above

593-: In humans carbohydrates are stored as:

1: Glucose

2: Glycogen

3: Starch

4: Cellulose

594-: Enzyme deficients in von gierke&;s disease

1: Glucose 1 phosphatase

2: Glucose 6 phosphatase

3: Acid maltase

4: b Glucosidase

595-: Which of the following reactions takes place in two compartments?

1: Gluconeogenesis

2: Glycolysis

3: Glycogenesis

4: Glycogenolysis

596-: All of these substrates are glucogenic except:

1: Acetyl CoA

2: Pyruvate

3: Glycerol

4: Lactate

597-: Transamination of aspaate leads directly to -------- of the citric acid cycle

1: Citrate

2: Oxaloacetate

3: a-ketoglutarate

4: Fumarate

598-: Substrate level phosphorylation is catalysed by

1: Succinate dehydrogenase

2: Pyruvate kinase

3: Malate dehydrogenase

4: Acetyl CoA carboxylase

599-: Strenuous exercise is not done in this glycogen storage disease:

1: McArdle disease

2: Anderson disease

3: Pompe disease

4: Von Gierke disease

600-: Disaccharide not digested in intestine is -

1: Sucrose

2: Isomaltose

3: Trehalose

4: Sucralose

601-: Positive signals for glycogen breakdown include in all the following except

1: Cyclic AMP

2: Blood glucose

3: Epinephrine

4: Ca2+

602-: Lysosomal a1 - 4 and a1 - 6 glucosidase deficiency is seen in

1: Von Gierke disease

2: Cori disease

3: Pompe disease

4: Tarui disease

603-: HMP shunt occurs in all organs except

1: Liver

2: Adipose tissue

3: RBC

4: Brain

604-: The deficiency of glucose - 6-phosphate dehydrogenase may cause

1: Diabetes mellitus

2: Haemolytic anemia

3: Wernicke-Korsakaoff syndrome

4: Porphyria

605-: The enzyme alpha amylase secreted by pancreas digest starch into which of the following major products:

1: Amylose, amylopectin, and maltose

2: Glucose, galactose, and fructose

3: Glucose, sucrose, and maltotriose

4: Limit dextrins, maltose, and maltotriose

606-: Inhibition of glycogenolysis and gluconeogenesis is caused by

1: Insulin

2: Glucogon

3: Glucocoicoid

4: Epinephrine

607-: Fluoride, used in the collection of blood samples for glucose estimation, inhibits the enzyme

1: Glucokinase

2: Hexokinase

3: Enolase

4: Glucose-6-phosphatase

608-: A patient is going skiing high in the Rockies and is given acetazolamide to protect against altitude sickness. Unfortunately, the patient is also a type 1 diabetic. He is admitted to the hospital in a worsening ketoacidosis. In which of the following cells has acetazolamide inhibited a reaction that has led to the severity of the metabolic acidosis?

1: White blood cells

2: Red blood cells

3: Lens of the eye

4: Hepatocyte

609-: In pregnancy amount of glucose used in Glucose Tolerance Test is:

1: 50g

2: 75g

3: 100g

4: 125g

610-: Deficiency of lysosomal maltase causes?

1: McArdle's disease

2: Andersen disease

3: Cori disease

4: Pompe disease

611-: Allosteric stimulator of glycogen phosphorylase

1: ATP

2: AMP

3: Insulin

4: Glucose-6-phosphate

612-: Choose the major fuel that is being adapted by the brain after 1 week of fasting.

1: Ketone bodies

2: Blood glucose

3: Fatty acids

4: Glycogen

613-: Fluoride inhibits

1: Glucose-6-phosphatase

2: Glucokinase

3: Hexokinase

4: Enolase

614-: Uronic acid pathway is not involved in:

1: Conjugation of bilirubin

2: GAG synthesis

3: Vitamin C synthesis

4: Biotransformation

615-: The enzyme defect in galactosemia is

1: Aldose reductase

2: Galactose-1-phosphate uridyltransferase

3: Galactokinase

4: Aldolase B

616-: Which of the following statements regarding T.C. A cycle is true?

1: It is an anaerobic process

2: It occurs in cytosol

3: It contains no intermediates for Gluconeogenesis

4: It is amphibolic in nature

617-: Which of the following helps in wound healing?

1: Keratan sulfate

2: Dermatan sulfate

3: Hyaluronic acid

4: Chondroitin sulfate

618-: Storage form of energy in liver is -

1: Glycogen

2: Triacylglycerol

3: Cholesterol ester

4: Protein

619-: Alcohol causes hypoglycemia due to -

1: Decreased gluconeogenesis

2: Decreased NADH

3: Decreased lipogenesis

4: Decreased glycogenesis

620-: During gluconeogenesis, oxaloacetate is transpoed from mitochondria to cytoplasm by:

1: Malate

2: Pyruvate

3: Glutamate

4: Phosphoenol Pyruvate

621-: In which of the following steps of the TCA cycle does Substrate level phosphorylation occurs?

1: Succinate to fumarate

2: Isocitrate to alpha keto glutarate

3: Alpha keto glutarate to succinyl CoA

4: Succinyl CoA to Succinate

622-: Glycogen storage disorder due to muscle phosphorylase deficiency

1: Mcardle's disease

2: Pompe's disease

3: Andersen's disease

4: Tarui's disease

623-: Cytoplasm to Mitochondria substrate shuttle is:

1: Glycerophosphate shuttle

2: Malate shuttle

3: Phosphoenol pyruvate

4: Oxaloacetate

624-: Which vitamin is required for glucose 6 phosphate dehydrogenase?

1: Riboflavin

2: Thiamine

3: Niacin

4: Biotin

625-: The metabolite that is regarded as the dead end in glycolysis -

1: Pyruvate

2: Lactate

3: 2,3-bisphosphoglycerate

4: 3-phosphoglycerate

626-: Glucose on reduction with sodium amalgam forms:

1: Dulcitol

2: Sorbitol

3: Mannitol

4: Mannitol and sorbitol

627-: The mechanism by which pyruvate from cytosol is transpoed to mitochondria is?

1: Chloride antipo

2: Proton sympo

3: ATP dependent antipo

4: Facilitated unipo

628-: Pyruvate is converted to which substance to start gluconeogenesis?

1: Oxaloacetate

2: Phosphenol pyruvate

3: Cis-aconitate

4: Succinate

629-: Synthesis of 1 molecule of Glucose from 2 molecules of Lactate require _____ ATP

1: 2

2: 4

3: 6

4: 8

630-: Not glucogenic is

1: Acetyl CoA

2: Lactate

3: Glycerol

4: Oxaloacetate

631-: Aldehyde dehydrogenase

1: Cofactor

2: Apoenzyme

3: Coenzyme

4: None

632-: What is the basis of this statement - 'FATS BURN IN THE FLAME OF CARBOHYDRATES ':

1: Fats & carbohydrates are oxidized together

2: Beta oxidation occurs in the presence of carbohydrates

3: Acetyl CoA is never glucogenic

4: Acetyl Co A is oxidized completely in the presence of oxaloacetate

633-: Glucagon stimulates -

1: Gluconeogenesis

2: Glycogenesis

3: Fatty acid synthesis

4: Glycolysis

634-: Enzyme deficient in Von-Gierke's disease is:

1: Phosphofructokinase

2: Glucocerebrocidase

3: Acid maltase

4: Glucose-6-phosphatase

635-: Which form of carbohydrate is present in Proteoglycan?

1: Monosaccharide

2: Disaccharide

3: Oligosaccharide

4: Polysaccharide

636-: For glucose estimation in blood, the mode of transport from a PHC to lab:

1: Sodium fluoride

2: EDTA

3: Citrate

4: 0.9% saline

637-: Post prandial utilization of glucose is by which enzyme?

1: Hexokinase

2: Glucokinase

3: Fructokinase

4: All of the above

638-: In VonGierke's disease, the levels of ketone bodies are increased due to all EXCEPT:

1: The patients have hypoglycaemia

2: The patients have low blood glucose

3: more mobilization of fats

4: OAA is required for gluconeogenesis

639-: In N-linked glycoproteins, to which of the following amino acids, oligosaccharides are covalently attached?

1: Glutamine

2: Asparagine

3: Acetyl lysine

4: Serine

640-: Glycogenin is a protein with self-glucosylation capacity. To which amino acid of glycogenin, glucose molecules are attached?

1: Serine

2: Threonine

3: Tyrosine

4: Hydroxylysine

641-: High energy phosphate is not produced in:

1: TCA cycle

2: Hexose monophosphate pathway

3: Glycolysis

4: Beta oxidation of fatty acid

642-: Which step in TCA cycle is irreversible?

1: Succinate thiokinase

2: Alpha ketoglutarate dehydrogenase

3: ISO citrate dehydrogenase

4: Aconitase

643-: A Mucopolysaccharide that do not contain uronic acid (UA)

1: Heparin

2: Chondrotin sulphate

3: Dermatan sulphate

4: Keratan sulphate

644-: Inulin like fructans is used as prebiotics as they are non-digestible. Resistance to digestion in the upper G1 tract result from

1: Absence of digestive enzyme in the upper GIT

2: Beta configuration of anomeric C2

3: Low pH of the stomach

4: Presence of a-osidic linkages

645-: What is the enzyme involved in the following conversion:

1: Sorbitol dehydrogenase

2: Glucose reductase

3: Aldose reductase

4: Glucose oxidase

646-: In liver, ethanol is converted to -

1: Methyl alcohol

2: Pyruvate

3: Acetaldehyde

4: Oxaloacetate

647-: False about glycolysis?

1: Net ATP from anaerobic glycolysis is 3 ATP

2: occurs in cytosol of all the cells

3: Net ATP from aerobic glycolysis is 7ATP

4: none of the above

648-: The rate of absorption of sugars by the small intestine is highest for:

1: Polysaccharides

2: Disaccharides

3: Hexoses

4: Pentoses

649-: The rate limiting enzyme in glycolysis is

1: Glucose 6- dehydrogenase

2: Phosphofructokinase

3: Glucokinase

4: Pyruvate kinase

650-: Number of ATPs formed per cycle of TCA -

1: 10

2: 24

3: 8

4: 30

651-: Which enzyme is inhibited by sodium fluride?

1: Enolase

2: Aconitase

3: Glyceraldehyde 3 phosphate dehydrogenase

4: Pyruvate dehydrogenase

652-: Enantiomers are isomers that differ in structure at which carbon :

1: Last Carbon

2: First Carbon

3: Penultimate Carbon

4: Carbonyl Carbon

653-: By which of the following anticoagulants used in estimating blood glucose, glycolysis is prevented-

1: EDTA

2: Heparin

3: Sodium fluoride

4: Sodium citrate

654-: Phospo-dephosphorylation of phosphorus to kinase and fructose 1, 6 Biphosphatase by fructose 2, 6 Biphosphate regulation is seen in

1: Brain

2: Liver

3: Adrenal Coex

4: RBC

655-: TCA is not controlled by

1: NADH

2: ATP

3: NADPH

4: ADP

656-: Glucose is linked to haemoglobin through

1: N-linkage

2: O-linkage

3: C-C linkage

4: O-H linkage

657-: Oxidation without oxygen leads to formation of which product -

1: Pyruvate

2: Fructose

3: Lactate

4: None

658-: Which glycosaminoglycan is present in cornea ?

1: Dermatan sulfate

2: Chondroitin Sulfate

3: Hyaluronic acid

4: Keratan Sulfate

659-: Enzyme specific for gluconeogenesis -

1: Glucose-6-phosphatase

2: Aldolase

3: Phosphoglycerate kinase

4: Phosphoglycerate mutase

660-: Number of isomers possible for Glucose are:

1: 32

2: 64

3: 16

4: 8

661-: GLUT-2 is seen in: (Repeat)

1: Pancreas

2: Adipose tissue

3: Skeletal muscles

4: Brain

662-: What can be prevented by inhibiting aldose reductase in diabetes mellitus -

1: Deafness

2: Diabetic nephropathy

3: Diabetic neuropathy

4: Diabetic cataract

663-: A young man finds that every time he eats dairy products he feels very uncomfoable. His stomach becomes distended. He develops gas and diarrhea frequently. These symptoms do not appears when he eats foods other than dairy products. Which of the following is the most likely enzyme in which this young man is deficient?

1: alpha-amylase

2: B-galactosidase

3: alpha-glucosidase

4: Sucrase

664-: Which of the following is a glycosphingolipid ?

1: Lecithin

2: Cardiolipin

3: Plasmalogens

4: Sphingomyelin

665-: Which of the following is required for glycogen phosphorylase in glycogenolysis?

1: Thiamine pyrophosphate

2: Pyridoxal phosphate

3: FAD

4: Citrate

666-: Von Gierke disease enzyme deficient

1: Glucose 6 phosphatase

2: Branching enzyme

3: Debranching enzyme

4: Phospharylase

667-: Benedict&;s test will be positive in the urine after administration of

1: Folic acid

2: Ascorbic acid

3: Pantothetic acid

4: Retinoic acid

668-: Tyrosine enters gluconeogenesis by forming which substrate?

1: Succinyl CoA

2: Alpha Ketoglutarate

3: Fumerate

4: Citrate

669-: Which of the following is not a reducing sugar -

1: Fructose

2: Galactose

3: Sucrose

4: Maltose

670-: Fluoroacetate inhibits which of the following metabolic processes?

1: TCA cycle

2: Glycolytic pathway

3: Oxidative phosphorylation

4: ETC

671-: Enzyme regulated by phosphorylation

1: Glucokinase

2: Glycogen synthetase

3: Pyruvate dehydrogenase

4: Isocitrate

672-: A 1-year-old child, on a routine well child visit, was discovered to have cataract formation in both eyes. Blood test demonstrated elevated galactose and galactitol levels. In order to determine which enzyme might be defective in the child, which intracellular metabolite should be measured?

1: Galactose

2: Fructose

3: Glucose

4: Galactose-1-phosphate

673-: Alcohol is metabolized by all except

1: Alcohol dehydrogenase

2: MEOS

3: Catalase

4: Aldehyde transferase

674-: Which reaction uses propionic acid?

1: Glycolysis

2: Glyconeogenesis

3: Glycogenolysis

4: None

675-: Pathway shown in Figure is seen in the following organ(s)

1: Liver

2: Adipose tissue

3: Adrenal cortex

4: All of the above

676-: Deficiency of the following enzyme causes hereditary fructose intolerance?

1: Aldolase A

2: Aldolase B

3: Fructokinase

4: Glycerol kinase

677-: Reducing sugar in urine can be detected by

1: Benedicts test

2: Fehling solution

3: Glucose - oxidase test

4: All of the above

678-: Warburg effect is:

1: Aerobic glycolysis

2: Anaerobic glycolysis

3: Inhibition of glycolysis by oxygen

4: Inhibition of oxygen uptake by glycolysis

679-: Branching enzyme is found in

1: Glycogenesis

2: Gluconeogenesis

3: Glycogenolysis

4: Glycolysis

680-: Acetyl CoA carboxylase is stimulated by all except-

1: Citrate

2: ATP

3: Insulin

4: Acyl CoA

681-: Me Ardle's disease is due to deficiency of -

1: Myophosphorylase

2: Liver phosphorylase

3: Glueuse-6-phosphatase

4: Acid maltase

682-: Defective enzyme in Hurler's disease?

1: Alpha-L-Iduronidase

2: Iduronate sulfatase

3: Beta-glucoronidase

4: Beta-galactosidase

683-: In the fed state, major fate of glucose-6-phosphate in tissues is:

1: Storage as fructose

2: Storage as glyceraldehyde-3-phosphate

3: Enters HMP shunt via ribulose-5-phosphate

4: Storage as glycogen

684-: ATP's formed in anaerobic glycolysis of glucose are:

1: 2

2: 8

3: 10

4: 15

685-: All of the following are intermediates of TCA cycle, except :

1: Malonate

2: alpha -ketoglutarate

3: Succinate

4: Fumarate

686-: Glucuronic acid and Iduronic acid are:

1: Anomers

2: Enantiomers

3: Functional isomers

4: Epimers

687-: 30-year-old presents with intractable vomiting and inability to eat or drink for the past 3 days. His blood glucose level is still normal. Which of the following is most impoant for the maintenance of Blood glucose in this patient:

1: Liver

2: Hea

3: Skeletal muscle

4: Lysosome

688-: Which of the following enters the TCA cycle at succinyl-CoA step ?

1: Histidine

2: Methionine

3: Tryptophan

4: Tyrosine

689-: Oxidative phase of HMP shunt pathway is least active in

1: Adrenal coex

2: Lactating mammary gland

3: RBC

4: Skeletal muscle

690-: Which pathway can use propionic acid ?

1: Glycolysis

2: Gluconeogenesis

3: Glycogenolysis

4: Glycogenesis

691-: Final product in anaerobic glycolysis

1: Pmyruvate

2: Acetyl CoA

3: Lactate

4: Oxaloacetate

692-: Total number of dehydrogenases Krebs cycle -

1: 3

2: 2

3: 4

4: 5

693-: About O2 dissociation curve, true is

1: Affinity of O2 with Hb decreases as Hb attaches to O2 in linear fashion

2: 1 Hb attaches to 2 molecules of 2,3 DPG

3: O2 affinity will be equal in both HbF and HbA in the absence of 2, 3DPG

4: Carboxy Hb increases releases of O2 in blood (shift O2 dissociation curve to right)

694-: Which one of the following is NOT a fuel for gluconeogenesis?

1: Acetyl CoA

2: Glycerol

3: Lactate

4: Shoening of the cell cycle

695-: Measurement of bilirubin in serum is by

1: Colorimetric method

2: Electrophoresis

3: Spectrophotometry

4: Chromatography

696-: Muscles cannot make use of glycogen because of deficiency of :

1: Glucose-6-phosphatase

2: Glycogen phosphorylase

3: Hexokinase

4: Phospho-gluco-mutase

697-: Which of the following disease occurs due to the deficiency of glucocerebroside?

1: Gaucher disease

2: Pompe disease

3: Fabry disease

4: Krabbe disease

698-: Which of the following enzyme does not catalyse the irreversible step in glycolysis?

1: Hexokinase

2: Phosphoglycero kinase

3: Pyruvate kinase

4: Phosphofructokinase

699-: All are substrates of Gluconeogenesis EXCEPT:

1: Lactate

2: Alanine

3: Leucine

4: Lysine

700-: In G-6PD deficient patient haemolysis is due to decrease in

1: H+

2: TPP

3: NADH

4: NADPH

701-: Cancer cells derive nutrition from

1: Glycolysis

2: Oxidative phosphorylation

3: Gluconeogenesis

4: Glycogenolysis

702-: Glyconeogenesis is

1: Synthesis of glucose from non-carbohydrate sources

2: Synthesis of glycogen from glucose

3: Synthesis of glucose from glycerol

4: Synthesis of glycogen from non-carbohydrate sources

703-: GLUT-5 is tra nsporter for -

1: Glucose

2: Fructose

3: Mannose

4: Galactose

704-: Rate limiting enzyme in gluconeogenesis -

1: Phosphofructokinase-1

2: Pyruvate kinase

3: Fructose 1-6 bisphosphatase

4: Glucokinase

705-: Which of the following syndrome is associated with mental retardation?

1: Hunter syndrome

2: Morquio syndrome B

3: Sly syndrome

4: Natowicz syndrome

706-: Beta-glucosidase deficiency leads to:

1: Gaucher's disease

2: Tay-Sachs disease

3: Galactosemia

4: DM

707-: About glycolysis true is:

1: Occurs in mitochondria

2: Complete breakdown of glucose

3: Conversion of glucose to 3C units

4: 3 ATPs are used in anaerobic pathway

708-: Source of ATP in RBCs is?

1: Beta oxidation of fatty acids

2: TCA cycle

3: Anaerobic glycolysis

4: Gluconeogensis

709-: In the test given below to estimate blood glucose, which of the following is true:

1: Glucose is converted to glucuronic acid

2: Glucose oxidase is highly specific for beta anomer of Glucose

3: The terminal Carbon is oxidised.

4: This is an example of Reducometric method

710-: Hemolytic anaemia is seen most commonly due to

1: Pyruvate kinase

2: Phospho fructokinase I

3: Phospho fructokinase II

4: Pyruvate dehydrogenase

711-: Maximum carbohydrate concentration in strict vegetarian diet present is

1: Amylase

2: Maltose

3: Fructose

4: Glycogen

712-: Enzyme inhibited by insulin is

1: Glucokinase

2: PFK-1

3: Glycogen phosphorylase

4: Glycogen synthase

713-: Enzyme deficiency in Galactosemia:

1: Galactose 1 phosphate uridyl transferase

2: Aldolase B

3: UDP galactose 4 epimerase

4: Fructokinase

714-: Polymer of fructose

1: Dextrose

2: Cellulose

3: Inulin

4: Glycogen

715-: Which of the following enzyme defect is the most commonly inherited metabolic disorder of glycolysis?

1: Glucokinase

2: Hexokinase

3: Phosphofructokinase

4: Pyruvate kinase

716-: Marquios disease not seen is

1: Corneal opacity

2: Mental retardation

3: Stunted growth

4: Absent clavicle

717-: Glucose is transpoed in pancreas through which receptor?

1: GLUT 1

2: GLUT 2

3: GLUT 3

4: GLUT 4

718-: In traumatic brain injury, changes in brain metabolism are seen. All are true EXCEPT

1: There is a decrease of pyruvate dehydrogenase activity

2: There is accumulation of lactate in brain

3: There is | lactate uptake from circulation

4: | CSF lactate is associated with good prognosis

719-: End-Product of the action of salivary amylase is

1: Mannose

2: Maltose

3: Sucrose

4: Fructose

720-: Mucopolysaccharide that does not contain Uronic acid residue is:

1: Heparan Sulphate

2: Heparin

3: Chondroitin Sulphate

4: Keratan Sulphate

721-: Enzymes of Calvin cycle are

1: G-6-PD

2: Sedoheptulose-7-biphosphatase

3: Glycerol Kinase

4: Phosphoribulose kinase

722-: A 8-year-old boy rapidly develops hypoglycemia after moderate activity. On examination, doll like face and the liver and kidneys are found to be enlarged. Blood examination reveals raised levels of ketone bodies, lactic acid, and triglycerides. Histopathology of the liver shows deposits of glycogen in an excess amount. What is the diagnosis?

1: Pompe's

2: McArdle's

3: von Gierke's

4: Cori's disease

723-: A 5 years old boy presents with hepatomegaly, hypoglycaemia, ketosis. The diagnosis is:

1: Mucopolysaccharidosis

2: Glycogen storage disorder

3: Lipopolysaccharidosis

4: Diabetes mellitus

724-: Keratin of skin and nail differ because

1: Vander waal bond

2: Lipolysis

3: Disulphide bond

4: Covalent bond

725-: Blood samples for glucose estimation are collected in fluoride bulbs/tubes as fluride prevents glycolysis byinhibition of

1: Enolase

2: Aldolase

3: Glucokinase

4: Phosphofructokinase

726-: Which of the following is the major anaplerotic enzyme?

1: Pyruvate carboxylase

2: Acetyl-CoA carboxylase

3: Pyruvate dehydrogenase

4: Succinate dehydrogenase

727-: All of the following are associated with non-ketotic hypoglycemia, EXCEPT:

1: Von Gierke's disease

2: Insulinoma

3: Carnitine deficiency

4: MCAD deficiency

728-: Final common pathway of metabolism of carbohydrate, lipids and protein metabolism is?

1: Glucogenesis

2: Gycolysis

3: TCA

4: HMP pathway

729-: Cellulose is a:

1: Fructose polymer

2: Non-starch polysaccharide

3: Starch polysaccharide

4: Glycosaminoglycan

730-: Epimers of glucose -

1: Mannose

2: Glyceraldebyde

3: Fructose

4: None

731-: Phosphofructokinase is the key enzyme of

1: Glycogenolysis

2: Glycogenesis

3: Glycolysis

4: TCA cycle

732-: Essential Pentosuria is due to defect in?

1: Glycolysis

2: HMP Shunt

3: TCA Cycle

4: Uronic acid pathway

733-: Pyruvate kinase is inhibited by -

1: Insulin

2: Fructose -1,6 bisphosphate

3: ATP

4: All of the above

734-: Number of ATP generated in one TCA cycle-

1: 2

2: 5

3: 10

4: 11

735-: Glycogenin primer is glucosylated by:

1: UDP Glucose

2: Glucose 1 PO4

3: UDP Glucose 1 PO4

4: UDP Glucose 6 PO4

736-: Glycogen phosphorylase coenzyme associated is?

1: Thiamine pyrophosphate

2: Tetrahydrofolate

3: Flavin mononuleotide

4: Pyridoxal phosphate

737-: True about Gaucher disease

1: Due to deficiency of enzymes sphingomyelinase

2: Due to deficiency of enzyme b-Gluco-cerebroisidase

3: Deposition of glucosylceramide

4: Foam cell deposition

738-: Which is not Glucogenic?

1: Arginine

2: HIstidine

3: Glycine

4: Lysine

739-: A 44 yr old female presented with bony pain.On general examination hepatospleenomegaly was observed.Biopsy from spleen shows crumpled tissue paper appearance.Which of the following product is likely to have accumulated?

1: Ganglioside

2: Glucocerebroside

3: Sphingomyelin

4: Sulfatides

740-: In which of the following step of TCA cycle, carbon dioxide is removed?

1: Alpha-ketoglutarate dehydrogenase

2: Malate dehydrogenase

3: Succinate dehydrogenase

4: Fumarase

741-: If only one terminal aldehyde group of glucose is oxidized, the product is -

1: Glucuronic acid

2: Gluconic acid

3: Gluchosaccharic acid

4: Gluconalactone

742-: Which is not a product of the pentose phosphate pathway?

1: Sedoheptulose-7-phosphate

2: O2

3: Glyceraldehyde-3-phosphate

4: NADPH

743-: Essential pentosuria is due to defect in

1: HMP pathway

2: Glycolysis

3: Gluconeogenesis

4: Uronic acid pathway

744-: Following statements are true with respect to glycogen except

1: Principle storage of carbohydrate in the human body is glycogen

2: Liver and muscle are the main sites of glycogen storage

3: Produced by glycogenesis

4: Insulin stimulates glycogenolysis

745-: The glycolytic enzyme Enolase is inhibited by

1: Iodoacetate

2: Fluoride

3: Arsenate

4: Arsenic

746-: Which is most lipogenic carbohydrate:

1: Glucose

2: Galactose

3: Fructose

4: Starch

747-: Insulin is essential for entry of glucose in which of the following tissue:

1: Most neurons in cerebral cortex

2: Renal tubular cells

3: Skeletal muscles

4: Mucosa of small intestine

# Answers

| Question No | Answer Option | Answer |
|---|---|---|
| 1 | 2 | A-C-D-B |
| 2 | 2 | Glycogen |
| 3 | 1 | Glucose-6-phosphatase |
| 4 | 2 | Sucrase |
| 5 | 3 | Adipocytes |
| 6 | 1 | Polymers |
| 7 | 1 | Level of fructose 1,6--biphosphate is higher than normal |
| 8 | 2 | Alpha ketoglutarate dehydrogenase |
| 9 | 3 | Aldolase B |
| 10 | 2 | Lack of ATP to support gluconeogenesis |
| 11 | 1 | Oxidation of UDP glucose |
| 12 | 2 | Isocitrate dehyrogenase |
| 13 | 2 | Two polypeptide chains are bound by disulfide linkages |
| 14 | 2 | Pyruvate carboxylase |
| 15 | 3 | Increased lipolysis |
| 16 | 2 | Sanfilippo A syndrome |
| 17 | 2 | Ferric Chloride test |
| 18 | 3 | Adipocyte |
| 19 | 4 | Cytochrome b |
| 20 | 2 | Debranching enzyme |
| 21 | 4 | Galactose-1-Phosphate-Uridyl-Transferase |
| 22 | 1 | Increased sorbitol in the lens |

| | | |
|---|---|---|
| 23 | 2 | EMP pathway |
| 24 | 1 | Acetyl CoA |
| 25 | 2 | Phosphoglycero kinase |
| 26 | 2 | 9 |
| 27 | 2 | 180 mg/dl |
| 28 | 1 | Fatty acid synthesis |
| 29 | 2 | a-l-Iduronidase |
| 30 | 1 | Glycolysis |
| 31 | 4 | Debranching enzyme |
| 32 | 2 | Fatty acid |
| 33 | 1 | Mannose |
| 34 | 4 | All of the above |
| 35 | 3 | Uronic acid pathway |
| 36 | 2 | Aconitase |
| 37 | 2 | Sphingomyelinase |
| 38 | 1 | Early PCT |
| 39 | 1 | 106 ATP |
| 40 | 3 | Enolase |
| 41 | 3 | Glycogen synthase C |
| 42 | 3 | Succinate dehydrogenase |
| 43 | 3 | Xylulose reductase |
| 44 | 3 | Cardiac muscle |
| 45 | 1 | Carboxylase |
| 46 | 1 | Hepatic glycogen |
| 47 | 3 | Amylo alpha-1,6-glucosidase |

| | | |
|---|---|---|
| 48 | 2 | GLUT2 |
| 49 | 1 | Shift of hydrogen |
| 50 | 1 | Enolase |
| 51 | 2 | NADPH |
| 52 | 2 | Muscle phosphorylase |
| 53 | 4 | Phosphofructokinase |
| 54 | 4 | Positive allosteric regulation of PFK2 |
| 55 | 4 | Myophpsphorylase deficiency |
| 56 | 4 | Succinyl dehydrogenase |
| 57 | 2 | Muscle and erythrocyte phosphofructokinase 1 |
| 58 | 1 | Glucose |
| 59 | 4 | Haemoglobin synthesis |
| 60 | 2 | Phosphoglycerate kinase |
| 61 | 2 | Liver |
| 62 | 2 | Aldose reductase |
| 63 | 4 | oxaloacetate to phosphoenol pyruvate |
| 64 | 1 | Mucic Acid |
| 65 | 3 | Uridyl transferase |
| 66 | 3 | Sphingomyelinase |
| 67 | 1 | Andersen disease |
| 68 | 2 | Acetaldehyde |
| 69 | 4 | Malonyl CoA |
| 70 | 1 | Brain |
| 71 | 2 | Acetyl CoA |
| 72 | 3 | Ketone bodies |

 

| | | |
|---|---|---|
| 73 | 1 | 2 ATP from 1 glucose |
| 74 | 3 | Ketone bodies |
| 75 | 2 | Gluconeogenesis |
| 76 | 4 | Both A. and B. |
| 77 | 4 | GLUT 5 |
| 78 | 1 | Lactulose |
| 79 | 1 | Citrate synthase |
| 80 | 1 | Von Gierke disease |
| 81 | 4 | Glycogen |
| 82 | 4 | Glucose and galactose |
| 83 | 2 | Citric acid cycle |
| 84 | 3 | Liver and muscle debranching enzyme |
| 85 | 3 | Xylulose reductase |
| 86 | 2 | Fructose 2-6 biphosphate |
| 87 | 2 | Glucose |
| 88 | 2 | 2,2 |
| 89 | 2 | Chondroitin sulfate |
| 90 | 2 | Pasteur effect |
| 91 | 1 | Ribose |
| 92 | 2 | Dextrose |
| 93 | 4 | Heparin |
| 94 | 4 | All of these |
| 95 | 2 | D- A- C-B |
| 96 | 4 | Liver |
| 97 | 3 | Reducing sugar in urine |

| | | |
|---|---|---|
| 98 | 3 | Sucrose |
| 99 | 3 | 4 |
| 100 | 2 | a ketoglutarate Dehydrogenase |
| 101 | 1 | Glycosamino glycan |
| 102 | 2 | Glucose-6-phosphatase is present in endoplasmic reticulum while glycogen metabolism occurs in the cytoplasm |
| 103 | 3 | Hexose monophosphate shunt |
| 104 | 1 | Aldolase B |
| 105 | 2 | Phosphofructokinase |
| 106 | 1 | Placenta |
| 107 | 4 | Phosphoglycerate kinase |
| 108 | 1 | Uronic acid |
| 109 | 2 | Beta galactosidase |
| 110 | 2 | ATP |
| 111 | 4 | Glycogen phosphorylase |
| 112 | 3 | GIP inhibits GLP-1 |
| 113 | 4 | Glycolysis |
| 114 | 1 | Benedicts test |
| 115 | 3 | G-6-phosphatase |
| 116 | 2 | Glycogenolysis |
| 117 | 3 | Fructose-1,6-bisphosphatase |
| 118 | 3 | Glucose 6 phosphate |
| 119 | 4 | Urea cycle |
| 120 | 2 | GLUT-2 |
| 121 | 3 | 10 |

| | | |
|---|---|---|
| 122 | 1 | Polysaccharide |
| 123 | 4 | Citrate |
| 124 | 3 | Loss of H2O molecule |
| 125 | 3 | Fumarate |
| 126 | 1 | Uronic acid |
| 127 | 4 | b-1-4 bond |
| 128 | 2 | Galactose |
| 129 | 3 | Biotin |
| 130 | 1 | Glucose-6-phosphatase |
| 131 | 1 | Von Gierke disease |
| 132 | 1 | Aldolase B |
| 133 | 3 | Ketone body |
| 134 | 2 | Alanine |
| 135 | 4 | Sucrose |
| 136 | 4 | HMP pathway |
| 137 | 2 | Fructose-2,6-bisphosphate |
| 138 | 1 | Oleate |
| 139 | 2 | Classic galactosemia |
| 140 | 3 | Malate shuttle |
| 141 | 1 | Acetyl-CoA |
| 142 | 1 | Glucose-6-Phosphatase |
| 143 | 1 | Oxaloacetate |
| 144 | 2 | Randomness in a system |
| 145 | 1 | Glucose |
| 146 | 4 | Glucose-6-phosphate |

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|---|---|---|
| 147 | 4 | Phospholipids |
| 148 | 2 | Muscle phosphorylase deficiency |
| 149 | 3 | Phosphoglycerate Kinase |
| 150 | 2 | Succinate dehydrogenase |
| 151 | 1 | Von Gierke's disease |
| 152 | 2 | Pyruvate kinase |
| 153 | 3 | Succinate thiokinase |
| 154 | 1 | GLUT 5 |
| 155 | 3 | Glucokinase |
| 156 | 1 | D (+) glucose |
| 157 | 1 | Fructose from glucose |
| 158 | 3 | The production of lactose by the mammary gland does not require the ingestion of milk or milk products. |
| 159 | 1 | Muscle phosphorylase |
| 160 | 3 | Branched chain keto acid dehydrogenase |
| 161 | 1 | Glucose -6 phosphatase |
| 162 | 1 | Mg +2 |
| 163 | 2 | Muscle |
| 164 | 3 | Panthothenic acid |
| 165 | 4 | Aerobic Glycolysis |
| 166 | 3 | Alanine |
| 167 | 2 | Pyruvate Carboxylase |
| 168 | 1 | Acetaldehyde |
| 169 | 1 | Isocitrate dehydrogenase |
| 170 | 1 | Sucrose |

| | | |
|---|---|---|
| 171 | 1 | PDH |
| 172 | 2 | Blood glucose |
| 173 | 4 | Keratan sulfate |
| 174 | 2 | Fructose + Sucrose |
| 175 | 3 | Alanine & lactate both can serve as substrate |
| 176 | 1 | I |
| 177 | 2 | Pyruvate dehydrogenase |
| 178 | 3 | Sodium fluoride |
| 179 | 1 | Oleate |
| 180 | 2 | Pyridoxal phosphate |
| 181 | 3 | Galactosemia |
| 182 | 1 | Gaucher's disease |
| 183 | 4 | Transketolase |
| 184 | 2 | Increased glycolysis |
| 185 | 4 | Debranching enzyme |
| 186 | 2 | Fructosan |
| 187 | 2 | Fructose and Glucose |
| 188 | 1 | Km value is higher than normal blood sugar |
| 189 | 4 | Phosphoglycerate kinase |
| 190 | 2 | Hemolytic anemia |
| 191 | 2 | N-acetyl glucosamine + b-glucoraunic acid |
| 192 | 3 | Enolase |
| 193 | 1 | Pyruvate kinase |
| 194 | 3 | Glucose-6-phosphatase |
| 195 | 1 | Glucose |

| | | |
|---|---|---|
| 196 | 4 | Acetyl-CoA |
| 197 | 2 | a-ketoacid dehydrogenase |
| 198 | 1 | Liver glycogen |
| 199 | 2 | Alanine in liver |
| 200 | 3 | Hea |
| 201 | 4 | Malonate dehydrogenase |
| 202 | 1 | Lyase |
| 203 | 2 | GLUT-4 |
| 204 | 2 | NADP |
| 205 | 1 | Biotin |
| 206 | 3 | UTP |
| 207 | 3 | Glucose |
| 208 | 2 | Hunter's disease |
| 209 | 4 | Citric acid cycle |
| 210 | 4 | Aldolase B |
| 211 | 2 | NADPH |
| 212 | 3 | Amino acids |
| 213 | 3 | Enolase |
| 214 | 1 | Beta oxidation of fatty acids |
| 215 | 2 | Pasteur effect |
| 216 | 1 | Enolase |
| 217 | 3 | Lactate |
| 218 | 1 | Decreased RBC transketolase activity |
| 219 | 2 | Complex II |
| 220 | 4 | Galactose 1 phosphate uridyl transferase |

| | | |
|---|---|---|
| 221 | 1 | Galactose-1-phosphate uridyl transferase |
| 222 | 1 | Enolase |
| 223 | 2 | Mg2+ |
| 224 | 2 | Proton sympo |
| 225 | 1 | Glycerol |
| 226 | 1 | Insulin |
| 227 | 1 | HMP shunt |
| 228 | 3 | NADH |
| 229 | 1 | Insulin |
| 230 | 1 | Mc Ardle's disease |
| 231 | 1 | 4 |
| 232 | 3 | Sodium fluoride |
| 233 | 2 | They hold less amount of water |
| 234 | 2 | Phase II reaction |
| 235 | 1 | Acetyl CoA |
| 236 | 2 | More glucose-1-phosphate than glucose |
| 237 | 4 | Glycogen storage disorders |
| 238 | 4 | Muscle |
| 239 | 3 | Transamination of pyruvate to alanine |
| 240 | 4 | GLUT-4 |
| 241 | 1 | Phosphorylase a |
| 242 | 4 | Acetyl Co A |
| 243 | 1 | Hereditary Fructose Intolerance |
| 244 | 4 | Relatively \| blood lactate in the blood drawn from the exercising forearm vein |

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|---|---|---|
| 245 | 3 | Hunter disease |
| 246 | 2 | Malabsorption syndrome |
| 247 | 3 | Fructokinase |
| 248 | 1 | To form glycogen with fewer branch points than normal |
| 249 | 3 | Brain |
| 250 | 2 | Succinate dehydrogenase |
| 251 | 3 | Malic enzyme |
| 252 | 1 | 6 NADPH |
| 253 | 3 | Sly syndrome |
| 254 | 2 | Krabbe's disease |
| 255 | 3 | Acid maltase |
| 256 | 1 | Insulin |
| 257 | 3 | Brain |
| 258 | 3 | PFK 1 and Pyruvate kinase |
| 259 | 2 | Glucokinase |
| 260 | 1 | Hemoprotein |
| 261 | 3 | Cori cycle |
| 262 | 2 | L-fructose |
| 263 | 4 | Fructose 1,6 bisphosphatase |
| 264 | 1 | NAD |
| 265 | 2 | Iduronate sulfatase |
| 266 | 1 | Hexosaminidase-A |
| 267 | 1 | Lactulose |
| 268 | 2 | TCA Cycle |
| 269 | 3 | Brain |

| | | |
|---|---|---|
| 270 | 4 | Transpo of lipids |
| 271 | 1 | Glycogen phosphorylase |
| 272 | 4 | Galactitol |
| 273 | 3 | Lactate |
| 274 | 2 | Aldolase-B |
| 275 | 3 | Dihydroxyacetone |
| 276 | 3 | Pyruvate kinase |
| 277 | 3 | Heparin |
| 278 | 4 | Low calorie, low carbohydrate diet |
| 279 | 2 | Molisch test |
| 280 | 3 | THF |
| 281 | 1 | Sugar alcohol |
| 282 | 4 | Nicotinamide adenine dinucleotide phosphate NADP |
| 283 | 1 | 18hrs |
| 284 | 3 | Fructose |
| 285 | 2 | NADPH |
| 286 | 1 | Malonyl CoA |
| 287 | 3 | Acetoacetate |
| 288 | 3 | G-6-phosphatase |
| 289 | 1 | Cornea |
| 290 | 2 | NADP+ |
| 291 | 1 | Glucocerebrosidase |
| 292 | 2 | Activation of pyruvate carboxylase by acetyl Co-A |
| 293 | 1 | Phosphoenol Pyruvate |
| 294 | 3 | Fructose |

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|---|---|---|
| 295 | 2 | Glycogen storage disorder |
| 296 | 1 | Gaucher's disease |
| 297 | 3 | Enolase |
| 298 | 1 | Enolase |
| 299 | 2 | Glucose 6 phosphatase |
| 300 | 2 | Glycerol-3-P |
| 301 | 3 | Aspaate |
| 302 | 2 | Hemolytic anemia |
| 303 | 2 | Alanine |
| 304 | 4 | Thiamin |
| 305 | 3 | Lactate dehydrogenase |
| 306 | 2 | Glucose 6 phosphate dehydrogenase |
| 307 | 2 | Fructose-2,6, bisphosphate is an allosteric activator of this enzyme |
| 308 | 3 | Beta glucosidase |
| 309 | 3 | GLUT-3 |
| 310 | 2 | Niacin |
| 311 | 1 | Mitochondrial matrix |
| 312 | 2 | Uronic acid pathway |
| 313 | 1 | 0 |
| 314 | 3 | Pyruvic acid (pyruvate) |
| 315 | 1 | Blue |
| 316 | 3 | Ketonis |
| 317 | 4 | All |
| 318 | 4 | Transketolase |

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|---|---|---|
| 319 | 1 | Level of fructose 1,6 bisphosphate is higher than normal |
| 320 | 3 | Acid maltase |
| 321 | 2 | Oxaloacetate |
| 322 | 1 | Beta-hexosaminidase |
| 323 | 3 | Lactate |
| 324 | 1 | TCA cycle |
| 325 | 2 | Glycogen synthase |
| 326 | 1 | Liver |
| 327 | 1 | GLUT 5 |
| 328 | 2 | Hexokinase |
| 329 | 2 | Pyruvate kinase |
| 330 | 1 | Sucrose |
| 331 | 1 | Glycolysis |
| 332 | 3 | Gut |
| 333 | 4 | Glyceraldehyde-3-phosphate and dihydroxyacetone phosphate |
| 334 | 4 | Biotin and B12 |
| 335 | 1 | Phosphofructokinase |
| 336 | 2 | Glyceraldehyde-3-P Dehydrogenase |
| 337 | 2 | Dextrose |
| 338 | 2 | 3 molecules of FA + Glycerol |
| 339 | 2 | Optical rotation |
| 340 | 1 | Cytoplasm |
| 341 | 1 | Lesch Nyhan syndrome |
| 342 | 4 | Acetyl-CoA |

 

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|---|---|---|
| 343 | 1 | Phosphofructokinase |
| 344 | 3 | Glucose is a C4 epimer of galactose |
| 345 | 2 | Lactate |
| 346 | 3 | Glucose-6-phosphate dehydrogenase |
| 347 | 2 | a (1-6) |
| 348 | 4 | Phosphatidyl inositol |
| 349 | 2 | Glucosamine |
| 350 | 4 | Myophosphorylase |
| 351 | 1 | RBC |
| 352 | 3 | Chaperone |
| 353 | 2 | Glycine |
| 354 | 2 | Glucose-6-phosphatase Deficiency |
| 355 | 1 | Acyl Co-A |
| 356 | 1 | Insulin |
| 357 | 4 | Muscle hypotonia |
| 358 | 2 | Chitin |
| 359 | 2 | Glycogen |
| 360 | 2 | TPP |
| 361 | 2 | Increased glucose uptake in muscle |
| 362 | 2 | Oxaloacetate |
| 363 | 1 | Promoting the formation of phosphorylase |
| 364 | 1 | Polysaccharide |
| 365 | 3 | Succinate dehydrogenase |
| 366 | 3 | Pyruvate kinase |
| 367 | 1 | RBCs |

| | | |
|---|---|---|
| 368 | 3 | Two carbon end product is formed |
| 369 | 2 | Lactic acid |
| 370 | 2 | Chitin |
| 371 | 1 | Von Gierke's disease |
| 372 | 2 | Citrate |
| 373 | 1 | NADH |
| 374 | 1 | Mg+2 |
| 375 | 2 | Biotin |
| 376 | 2 | Debranching enzyme |
| 377 | 4 | Increased triglyceride and cholesterol level |
| 378 | 3 | Enolase |
| 379 | 3 | More commonly seen in fasting state than in fed state |
| 380 | 2 | Heparan sulfate |
| 381 | 1 | Fluoride |
| 382 | 4 | Adipose tissues |
| 383 | 2 | Fructose |
| 384 | 3 | Brain |
| 385 | 2 | Phosphofructokinase-1 |
| 386 | 2 | Pasteur effect |
| 387 | 3 | Galcatose-1-Phosphate uridyl transferase |
| 388 | 2 | Pyruvate Carboxylase activation by Acetyl CoA |
| 389 | 3 | NADPH |
| 390 | 1 | Pyruvate |
| 391 | 4 | Adipose tissue |
| 392 | 1 | Galactose intolerance test |

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|---|---|---|
| 393 | 1 | Vitreous humor |
| 394 | 1 | Gluc-6 phosphatase |
| 395 | 1 | Liver and muscle |
| 396 | 4 | Liver |
| 397 | 1 | Lactulose |
| 398 | 3 | Von Gierke's disease |
| 399 | 3 | Glucose-6-phosphatase |
| 400 | 2 | Debranching enzyme |
| 401 | 4 | Pentose phosphate pathway |
| 402 | 2 | Glucose-6-phosphate |
| 403 | 3 | Alpha-1,6 |
| 404 | 4 | SGLT- 2 |
| 405 | 1 | Tay-sach disease |
| 406 | 2 | Glucose-6-phosphatase |
| 407 | 1 | Enolase |
| 408 | 1 | Von Gierke's disease |
| 409 | 2 | N-1 of pyrimidine |
| 410 | 3 | 4 |
| 411 | 4 | HMP shunt |
| 412 | 3 | 3 |
| 413 | 3 | Acid maltase |
| 414 | 4 | One molecule of glocuse and one molecule of galactose |
| 415 | 3 | Malate shuttle |
| 416 | 4 | Enolase |
| 417 | 3 | Chaperone |

 

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|---|---|---|
| 418 | 2 | Red blood cell |
| 419 | 3 | Only 3 |
| 420 | 1 | O2 release |
| 421 | 3 | Glycogen phosphorylase |
| 422 | 2 | Pyridoxal phosphate |
| 423 | 2 | Metabolic alkalosis |
| 424 | 4 | C - A - B- D |
| 425 | 3 | Gluconeogenesis |
| 426 | 4 | Succinate |
| 427 | 1 | Hydration |
| 428 | 1 | Gaucher's disease |
| 429 | 1 | 12.5 |
| 430 | 3 | Pyruvate Carboxylase |
| 431 | 3 | Pyruvate kinase |
| 432 | 2 | Phosphofructokinase |
| 433 | 2 | Acetyl CoA activates Pyruvate carboxylase |
| 434 | 4 | Phosphohexose isomerase |
| 435 | 1 | 2 ATP + 2 NAD |
| 436 | 4 | HMP shunt |
| 437 | 3 | Alpha ketoglutarate dehydrogenase |
| 438 | 3 | D-glucose & D-mannose |
| 439 | 3 | Brain |
| 440 | 2 | a-ketoglutarate |
| 441 | 3 | Pyruvate kinase |
| 442 | 3 | Succinate dehydrogenase |

| | | |
|---|---|---|
| 443 | 4 | Decreased activity of liver glycogen synthase |
| 444 | 2 | NADHtoNAD |
| 445 | 1 | Cytosol |
| 446 | 1 | Citric acid cycle |
| 447 | 2 | Pasteur effect |
| 448 | 3 | Barfoed's test |
| 449 | 3 | Glycolysis |
| 450 | 1 | Acetyl-coA |
| 451 | 3 | Potassium oxalate + NaF |
| 452 | 4 | GULT-4 |
| 453 | 4 | One molecule of glucose and one molecule of galactose |
| 454 | 3 | Glucose 6 Phosphatase |
| 455 | 4 | Hyperglycemia |
| 456 | 1 | Decrease ketone body production |
| 457 | 3 | Phosphoglycerate kinase |
| 458 | 1 | Corn flakes |
| 459 | 1 | McArdle's disease |
| 460 | 4 | The oxidative phase generates NADPH and the Non oxidative phase generates pyruvate |
| 461 | 1 | GLUT-2 is needed in brain |
| 462 | 2 | Aconitase |
| 463 | 4 | Glucose |
| 464 | 2 | Phosphofructokinase I |
| 465 | 3 | b (1 - 4) glycosidic bond |
| 466 | 3 | Palmitate |

| | | |
|---|---|---|
| 467 | 4 | Glycogenesis |
| 468 | 2 | G-6-PD |
| 469 | 2 | a-ketoglutarate |
| 470 | 2 | Fumarate |
| 471 | 2 | Von Gierke's disease |
| 472 | 4 | Cobalamin |
| 473 | 1 | C1 |
| 474 | 2 | 2,2 |
| 475 | 4 | Oxaloacetate |
| 476 | 4 | Succinate thiokinase |
| 477 | 2 | Has a high km for glucose and hence is important in the phosphorylation of glucose primarily after ingestion of a carbohydrate rich meal |
| 478 | 2 | 2 ATP |
| 479 | 1 | Pyruvate dehydrogenase |
| 480 | 2 | NADPH |
| 481 | 1 | Zero |
| 482 | 3 | Pyridoxal phosphate (B6) |
| 483 | 4 | Sugar alcohols |
| 484 | 1 | Phosphorylated form |
| 485 | 1 | Glycogenesis |
| 486 | 2 | Chitin |
| 487 | 2 | Liver |
| 488 | 3 | Protein |
| 489 | 1 | Acid maltase |
| 490 | 4 | The levels of 2,3-bisphosphoglycerate |

| | | |
|---|---|---|
| 491 | 2 | b-Glucosidase |
| 492 | 2 | GLUT-4 |
| 493 | 4 | Fructose-1 biphosphate |
| 494 | 4 | Galactose-l-phosphate uridyl transferase |
| 495 | 3 | ATP is produced |
| 496 | 4 | Fructose 2,6 bisphosphate |
| 497 | 1 | Glycogenesis |
| 498 | 1 | Glucose |
| 499 | 2 | Aconitase |
| 500 | 2 | Mitochondria |
| 501 | 3 | Inulin |
| 502 | 3 | Glucose |
| 503 | 2 | Sorbitol |
| 504 | 4 | Fumarate |
| 505 | 1 | Hypoxia Stimulates pyruvate dehydrogenase by increased 2, 3 BPG |
| 506 | 3 | Galactokinase |
| 507 | 2 | 18 |
| 508 | 2 | Proton symport |
| 509 | 4 | NADH |
| 510 | 2 | Enolase |
| 511 | 1 | Glucose |
| 512 | 1 | Phyruvate Carboxylase |
| 513 | 3 | Fructokinase |
| 514 | 4 | Succinate thiokinase |

| | | |
|---|---|---|
| 515 | 2 | Phosphofructokinase |
| 516 | 4 | Presence of disaccharide repeat unit |
| 517 | 1 | Glucose-6-phosphatase |
| 518 | 4 | Insulin |
| 519 | 2 | Branching enzyme |
| 520 | 4 | Glycerol |
| 521 | 2 | Muscle |
| 522 | 2 | Muscle phosphorylase |
| 523 | 2 | Butyrate |
| 524 | 3 | Galactose 1 Phosphate Uridyl transferase |
| 525 | 2 | Steroids |
| 526 | 1 | Acetyl-CoA induced stimulation of Pyruvate Carboxylase |
| 527 | 4 | Hereditary fructose intolerance |
| 528 | 1 | Hexokinase, Phosphofructokinase, Pyruvate Kinase |
| 529 | 4 | HMP shunt |
| 530 | 2 | 7 |
| 531 | 1 | Barfoed's test |
| 532 | 2 | Glucose 6 Phosphatase |
| 533 | 4 | NADH |
| 534 | 3 | Arsenite |
| 535 | 3 | Is the rate-limiting reaction of glycolytic Pathway? |
| 536 | 2 | GLUT 4 |
| 537 | 3 | Phosphenol pyruvate |
| 538 | 2 | Gluconeogenesis |
| 539 | 4 | Skin |

| | | |
|---|---|---|
| 540 | 4 | Elevated levels of fructose-1-phosphate in liver cells |
| 541 | 1 | Thiamine, riboflavin, niacin, pantothenic acid |
| 542 | 2 | Fumarate |
| 543 | 4 | ATP and GTP |
| 544 | 2 | Fumarate |
| 545 | 2 | Pyruvate dehydrogenase enzyme complex |
| 546 | 3 | Glucose-6-phosphatase |
| 547 | 3 | Deficiency of Lactase |
| 548 | 1 | The lyososomes are deficient in the enzyme hydrolase |
| 549 | 4 | The oxidative phase generates NADPH and the Non oxidative phase generates pyruvate |
| 550 | 2 | Phosphoglucomutase(PGM) |
| 551 | 3 | Alanine & lactate both can serve as substrate |
| 552 | 1 | Glucose-6-phosphatase dehydrogenase |
| 553 | 2 | Chondroitin sulphate |
| 554 | 1 | 2 |
| 555 | 3 | G-6-phosphatase |
| 556 | 2 | High in glucokinase |
| 557 | 2 | a-ketoglutarate |
| 558 | 1 | Fructose-6-phosphate to glucose-6-Phosphate |
| 559 | 4 | Transport of lipids |
| 560 | 2 | Hyaluronidase |
| 561 | 1 | Monosaccharide |
| 562 | 2 | 7 |
| 563 | 2 | Phosphofructokinase |

 

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|---|---|---|
| 564 | 2 | b-Glucosidase |
| 565 | 1 | Lactic acid |
| 566 | 1 | Tay-sach disease |
| 567 | 2 | Hemolytic anemia |
| 568 | 2 | Conversion of Pyruvate to Oxaloacetate |
| 569 | 3 | Acetyl CoA Carboxylase |
| 570 | 1 | Aldose reductase |
| 571 | 3 | 10 |
| 572 | 1 | Galactose 1-phosphate uridyl transferase |
| 573 | 3 | Pyruvate |
| 574 | 4 | Phosphofructokinase |
| 575 | 1 | Galactosemia |
| 576 | 3 | Reducing sugar in urine |
| 577 | 1 | No gluconeogenesis in type 1 disease |
| 578 | 3 | D-glucose & D-mannose |
| 579 | 2 | Mg |
| 580 | 3 | Hypoxia stimulates release of all Glycolytic enzymes from Band 3 on RBC membrane |
| 581 | 3 | HMP shunt |
| 582 | 1 | HMP shunt |
| 583 | 2 | Increased b-oxidation |
| 584 | 1 | Hexokinase can phosphorylate fructose |
| 585 | 3 | Requires a bifunctional enzyme (debranching and transferase) |
| 586 | 3 | Enolase |
| 587 | 3 | Cornea |

| | | |
|---|---|---|
| 588 | 2 | Oxaloacetate |
| 589 | 2 | B |
| 590 | 4 | Enolase |
| 591 | 1 | Aldolase B |
| 592 | 4 | All of the above |
| 593 | 2 | Glycogen |
| 594 | 2 | Glucose 6 phosphatase |
| 595 | 1 | Gluconeogenesis |
| 596 | 1 | Acetyl CoA |
| 597 | 2 | Oxaloacetate |
| 598 | 2 | Pyruvate kinase |
| 599 | 1 | McArdle disease |
| 600 | 4 | Sucralose |
| 601 | 2 | Blood glucose |
| 602 | 3 | Pompe disease |
| 603 | 4 | Brain |
| 604 | 2 | Haemolytic anemia |
| 605 | 4 | Limit dextrins, maltose, and maltotriose |
| 606 | 1 | Insulin |
| 607 | 3 | Enolase |
| 608 | 2 | Red blood cells |
| 609 | 3 | 100g |
| 610 | 4 | Pompe disease |
| 611 | 2 | AMP |
| 612 | 1 | Ketone bodies |

| | | |
|---|---|---|
| 613 | 4 | Enolase |
| 614 | 3 | Vitamin C synthesis |
| 615 | 2 | Galactose-1-phosphate uridyltransferase |
| 616 | 4 | It is amphibolic in nature |
| 617 | 3 | Hyaluronic acid |
| 618 | 1 | Glycogen |
| 619 | 1 | Decreased gluconeogenesis |
| 620 | 1 | Malate |
| 621 | 4 | Succinyl CoA to Succinate |
| 622 | 1 | Mcardle's disease |
| 623 | 2 | Malate shuttle |
| 624 | 3 | Niacin |
| 625 | 2 | Lactate |
| 626 | 2 | Sorbitol |
| 627 | 2 | Proton sympo |
| 628 | 1 | Oxaloacetate |
| 629 | 3 | 6 |
| 630 | 1 | Acetyl CoA |
| 631 | 3 | Coenzyme |
| 632 | 4 | Acetyl Co A is oxidized completely in the presence of oxaloacetate |
| 633 | 1 | Gluconeogenesis |
| 634 | 4 | Glucose-6-phosphatase |
| 635 | 4 | Polysaccharide |
| 636 | 1 | Sodium fluoride |

| | | |
|---|---|---|
| 637 | 2 | Glucokinase |
| 638 | 4 | OAA is required for gluconeogenesis |
| 639 | 2 | Asparagine |
| 640 | 3 | Tyrosine |
| 641 | 2 | Hexose monophosphate pathway |
| 642 | 2 | Alpha ketoglutarate dehydrogenase |
| 643 | 4 | Keratan sulphate |
| 644 | 2 | Beta configuration of anomeric C2 |
| 645 | 3 | Aldose reductase |
| 646 | 3 | Acetaldehyde |
| 647 | 1 | Net ATP from anaerobic glycolysis is 3 ATP |
| 648 | 3 | Hexoses |
| 649 | 2 | Phosphofructokinase |
| 650 | 1 | 10 |
| 651 | 1 | Enolase |
| 652 | 3 | Penultimate Carbon |
| 653 | 3 | Sodium fluoride |
| 654 | 2 | Liver |
| 655 | 3 | NADPH |
| 656 | 1 | N-linkage |
| 657 | 3 | Lactate |
| 658 | 4 | Keratan Sulfate |
| 659 | 1 | Glucose-6-phosphatase |
| 660 | 3 | 16 |
| 661 | 1 | Pancreas |

| | | |
|---|---|---|
| 662 | 4 | Diabetic cataract |
| 663 | 4 | Sucrase |
| 664 | 4 | Sphingomyelin |
| 665 | 2 | Pyridoxal phosphate |
| 666 | 1 | Glucose 6 phosphatase |
| 667 | 2 | Ascorbic acid |
| 668 | 3 | Fumerate |
| 669 | 3 | Sucrose |
| 670 | 1 | TCA cycle |
| 671 | 2 | Glycogen synthetase |
| 672 | 4 | Galactose-1-phosphate |
| 673 | 4 | Aldehyde transferase |
| 674 | 2 | Glyconeogenesis |
| 675 | 4 | All of the above |
| 676 | 2 | Aldolase B |
| 677 | 4 | All of the above |
| 678 | 1 | Aerobic glycolysis |
| 679 | 1 | Glycogenesis |
| 680 | 4 | Acyl CoA |
| 681 | 1 | Myophosphorylase |
| 682 | 1 | Alpha-L-Iduronidase |
| 683 | 4 | Storage as glycogen |
| 684 | 1 | 2 |
| 685 | 1 | Malonate |
| 686 | 4 | Epimers |

 

| | | |
|---|---|---|
| 687 | 1 | Liver |
| 688 | 2 | Methionine |
| 689 | 4 | Skeletal muscle |
| 690 | 2 | Gluconeogenesis |
| 691 | 3 | Lactate |
| 692 | 3 | 4 |
| 693 | 3 | O2 affinity will be equal in both HbF and HbA in the absence of 2, 3DPG |
| 694 | 1 | Acetyl CoA |
| 695 | 1 | Colorimetric method |
| 696 | 2 | Glycogen phosphorylase |
| 697 | 1 | Gaucher disease |
| 698 | 2 | Phosphoglycero kinase |
| 699 | 3 | Leucine |
| 700 | 4 | NADPH |
| 701 | 1 | Glycolysis |
| 702 | 4 | Synthesis of glycogen from non-carbohydrate sources |
| 703 | 2 | Fructose |
| 704 | 3 | Fructose 1-6 bisphosphatase |
| 705 | 1 | Hunter syndrome |
| 706 | 1 | Gaucher's disease |
| 707 | 3 | Conversion of glucose to 3C units |
| 708 | 3 | Anaerobic glycolysis |
| 709 | 2 | Glucose oxidase is highly specific for beta anomer of Glucose |
| 710 | 1 | Pyruvate kinase |

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|---|---|---|
| 711 | 4 | Glycogen |
| 712 | 3 | Glycogen phosphorylase |
| 713 | 1 | Galactose 1 phosphate uridyl transferase |
| 714 | 3 | Inulin |
| 715 | 4 | Pyruvate kinase |
| 716 | 2 | Mental retardation |
| 717 | 2 | GLUT 2 |
| 718 | 4 | \| CSF lactate is associated with good prognosis |
| 719 | 2 | Maltose |
| 720 | 4 | Keratan Sulphate |
| 721 | 2 | Sedoheptulose-7-biphosphatase |
| 722 | 3 | von Gierke's |
| 723 | 2 | Glycogen storage disorder |
| 724 | 3 | Disulphide bond |
| 725 | 1 | Enolase |
| 726 | 1 | Pyruvate carboxylase |
| 727 | 1 | Von Gierke's disease |
| 728 | 3 | TCA |
| 729 | 2 | Non-starch polysaccharide |
| 730 | 1 | Mannose |
| 731 | 3 | Glycolysis |
| 732 | 4 | Uronic acid pathway |
| 733 | 3 | ATP |
| 734 | 3 | 10 |
| 735 | 1 | UDP Glucose |

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|---|---|---|
| 736 | 4 | Pyridoxal phosphate |
| 737 | 2 | Due to deficiency of enzyme b-Gluco-cerebroisidase |
| 738 | 4 | Lysine |
| 739 | 2 | Glucocerebroside |
| 740 | 1 | Alpha-ketoglutarate dehydrogenase |
| 741 | 2 | Gluconic acid |
| 742 | 2 | O2 |
| 743 | 4 | Uronic acid pathway |
| 744 | 4 | Insulin stimulates glycogenolysis |
| 745 | 2 | Fluoride |
| 746 | 3 | Fructose |
| 747 | 3 | Skeletal muscles |