Question N1 Glycolysis can only proceed in aerobic conditions

Answer:

0

Point: 0.25

Question N2 Reaction catalyazed by phosphofructokinase is reversible

Answer:

0

Point: 0.25

Question N3 What is the net production of NADH during anaerobic glycolysis?

Answer:

zero

Point: 0.4

Question N4 Which of the following enzymes catalyzes the reaction in glycolysis, where NAD is reduced to NADH?

Answer:

Glyceraldehyde-3-phosphate dehydrogenase

Point: 0.4

Question N5 Which of following enzymes catalyzes the last step when ATP is produced during the glycolysis?

Answer:

Pyruvate kinase

Point: 0.4

Question N6 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N7 What's the reason of Lactic acidosis? Explain your answer

Answer:

when the oxygen is low or mitochondria is impaired the cell become forced to do anerobic glycolysis it involved in production of lactate by the help enzyme lactate dehydrogenase.

Point: 1.5

Question N8 Hexokinase is an enzyme that catalyzes the first reaction in gluconeogenesis

Answer:

1

Point: 0

Question N9 In gluconeogenesis, Pyruvate carboxylase and PEP carboxykinase bypass the glycolytic pyruvate kinase reaction

Answer:

0

Point: 0

Question N10 Which of the following tissues have thier own glycogen storage?

Answer:

Muscle

Point: 0.4

Question N11 Which nucleotide does glucose get attached to for glycogen synthesis?

Answer:

UDP

Point: 0.4

Question N12 Which of the following hormones stimulates glycogen synthesis?

Answer:

Insulin

Point: 0.4

Question N13 Which of the following is a coenzyme of glycogen phosphorylase?

Answer:

Pyridoxal phosphate

Point: 0.4

Question N14 Which hormones affect glycogenesis and how?

Answer:

glucogon,epinephrine ,steroid homones which stimulate the activity of glycogenesis by the camp pathway

insulin which inhibits it

Point: 1.5

Question N15 in gluconeogenesis pyruvate is transformed into oxaloacetate by pyruvate carboxilase

Answer:

1

Point: 0.25

Question N16 Pyruvate carboxylase is allosterically inhibited by acetyl coA

Answer:

0

Point: 0.25

Question N17 Which enzyme bypasses the glycolytic PFK-1 reaction, in gluconeogenesis?

Answer:

Fructose 1,6-bisphosphatase

Point: 0.4

Question N18 Which enzyme uses GTP as energy source during gluconeogenesis?

Answer:

PEP carboxykinase

Point: 0.4

Question N19 Which of the following can be used for gluconeogenesis?

Answer:

All of them

Point: 0.4

Question N20 Which of the following enzymes catalyzes the reaction in gluconeogenesis when GTP is used as a phosphate donor?

Answer:

PEP carboxykinase

Point: 0.4

Question N21 Write down the sources for gluconeogenesis

Answer:

lactate

glycerol

glycogenic aminoacids( alanine)

Point: 1.5

Question N22 NADH is one of the products of the pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 Pentose phosphate pathway can be divided into two phases: oxidative and nonoxidative

Answer:

1

Point: 0.25

Question N24 Which one is the product of the pentose phosphate pathway?

Answer:

Ribose-5-phosphate

Point: 0.4

Question N25 Which part of the cell does the pentose phosphate pathway take place?

Answer:

Cytosol

Point: 0.4

Question N26 Which biochemical reductant is produced by pentose phosphate pathway?

Answer:

NADPH

Point: 0.4

Question N27 Which of the following hormones stimulates the ativity of glucose 6-phosphate dehydrogenase

Answer:

Insulin

Point: 0.4

Question N28 Compare PPP and glycolysis to each other. Write similarities

Answer:

they both reaction occured in cytoplasm

initial enzyme start from glucose 6 phosphatase

they give the product NADPH

Point: 1

Question N29 Fatty acids, containing double bonds are considered unsaturated

Answer:

1

Point: 0.25

Question N30 Tryglycerides contain three fatty acid residues connected to alcohol sphingosine

Answer:

1

Point: 0

Question N31 Fatty acids that do not contain any double bonds are:

Answer:

Saturated

Point: 0.4

Question N32 Fatty acids are stored in adipose tissue, as:

Answer:

Tryacylglycerols

Point: 0.4

Question N33 How does level of unsaturation affect the melting point of even-numbered fatty acids?

Answer:

The more unsaturated the fatty acids are, lower their melting point is

Point: 0.4

Question N34 The terminal methyl carbon of fatty acid is called

Answer:

Omega

Point: 0.4

Question N35 Beta-oxidation of fatty acids takes place in mitochondria

Answer:

1

Point: 0.25

Question N36 Carnitine shuttle is used to transport long-chain fatty acids from cytosol to mitochondria

Answer:

1

Point: 0.25

Question N37 Which hormone activates the hormone-sensitive lipase?

Answer:

Epinephrin

Point: 0.4

Question N38 Which enzyme catalyzes the first oxidation reaction in beta-oxidation process?

Answer:

Acyl-coA dehydrogenase

Point: 0.4

Question N39 Which hormone activates the hormone-sensitive lipase?

Answer:

Epinephrin

Point: 0

Question N40 Which enzyme catalyzes the activation of fatty acids?

Answer:

Acyl coA acyltransferase

Point: 0

Question N41 Which peripheral tissues use ketone bodies , define why

Answer:

first produced ketone bodie from acetyl coA is acetoacetate . the brain tissues is use ketone bodies when the glucose is unavailable

Point: 1.5

Question N42 acetyl coA carboxilase recuires vitamin B5 as coenzyme

Answer:

0

Point: 0.25

Question N43 Acetyl coA carboxilase is allosterically activated by citrate

Answer:

1

Point: 0.25

Question N44 Dephosphorylation activates enzyme Acetyl-coA carboxylase. According to this, which of the following hormones activate this enzyme?

Answer:

Insulin

Point: 0.4

Question N45 Which two vitamins are acting as cofactors at different levels of fatty acid synthesis?

Answer:

Vitamins B5 and B7

Point: 0.4

Question N46 How is acetyl coA transported from mitochondria to cytosol for fatty acid synthesis?

Answer:

As citrate

Point: 0.4

Question N47 What is the coenzyme for acetyl coA carboxylase?

Answer:

Biotin

Point: 0.4

Question N48 Deficiency of which two vitamins would disrupt the proper functioning of fatty acid synthesis pathway?

Answer:

vitamin b5 and b7 (biotin)

Point: 1.5

Question N49 Ceramide contains sphingosine

Answer:

1

Point: 0.25

Question N50 NANA ( N-acetylneuraminic acid )~nbsp; is present is Gangliosides

Answer:

1

Point: 0.25

Question N51 Which enzyme catalyses the hydrolysis of TAGs form VLDL and chylomicrons?

Answer:

Lipoprotein lipase

Point: 0.4

Question N52 Which of the following hormones promotes lipogenesis?

Answer:

Insulin

Point: 0.4

Question N53 What is the product of acyl coA combining with glycerol 3-phosphate?

Answer:

Phosphatidate

Point: 0.4

Question N54 Which enzyme transforms glycerol into an activated form?

Answer:

Glycerol kinase

Point: 0.4

Question N55 Which metabolic pathway, in glucose metabolism, provides the building blocks for TAGs? Explain your answer

Answer:

the buliding blocks of TAGs is acetyl coA .

In glucose metabolism the pyruvate is converted to form acetyl coA by help of pyruvate dehydrogenase enzyme and it is enters to TCA cycle

acetyl coA combited to oxaloacetate by the help of citrate

Point: 1.5

Question N56 LPL lipoprotein lipase is synthesized in adipocytes.

Answer:

1

Point: 0.25

Question N57 Apo B-100 is a specific apoprotein for chylomicrons

Answer:

0

Point: 0.25

Question N58 High amount of insulin:

Answer:

Promotes the lipogenesis

Point: 0.4

Question N59 Phosphatidic acid contains: ~nbsp;

Answer:

Two acyl chaind

Point: 0.4

Question N60 Glucose is the indirect source of glycerol for TAG synthesis in:

Answer:

In adipose tissue

Point: 0.4

Question N61 Triacylglycerols are derived from: ~nbsp;

Answer:

Endogenous synthesis

Point: 0

Question N62 ApoA2 is present in HDL and:

Answer:

Activates LCAT, CEPT and inhibits LPL

Point: 0.4

Question N63 Which of the lipoprotein receptors (ApoB/E or Scavenger) is selective?

Answer:

ApoB/E

Point: 0.4

Question N64 Where and how is VLDL transformed into LDL?

Answer:

VLDL is produced from liver .the lipoprotein lipase is breakdown the triacylglycerol of VLDL. and is converted in to IDL. further the hepatic lipase again breakdown the triacylglycerol.and the IDL is converted in to the low density lipo protein(LDL)

Point: 1.5

Question N65 Insulin downregulates the expression of the gene for HMG-coA reductase by activating SREBP

Answer:

0

Point: 0.25

Question N66 Which of the following hormones stimulate the gene expession of HMG-coA reductase?

Answer:

Insulin

Point: 0.4

Question N67 How many carbons do bile acids contain?

Answer:

24

Point: 0.4

Question N68 An individual with hypothyroidism exhibits elevated serum cholesterol levels. What is the most likely mechanism?

Answer:

Increased activity of HMG-CoA reductase~nbsp;

Point: 0.4

Question N69 A newborn is diagnosed with abetalipoproteinemia, characterized by absence of apolipoprotein B-containing lipoproteins. What is the primary defect in cholesterol metabolism?

Answer:

Defective LDL receptor function~nbsp;

Point: 0.4

Question N70 A patient is diagnosed with sitosterolemia, a rare condition involving increased absorption of plant sterols. How does this disorder affect cholesterol metabolism

Answer:

Elevated plasma plant sterol levels compete with cholesterol, leading to increased cholesterol absorption~nbsp;

Point: 0

Question N71 A patient with liver cirrhosis develops elevated serum cholesterol levels. Which pathway of cholesterol metabolism is likely disrupted?

Answer:

~nbsp;LDL receptor-mediated clearance~nbsp;

Point: 0.4

Question N72 Explain the role of LDL receptors in maintaining cholesterol homeostasis

Answer:

LDL receptors are the binding site of LDL lipoproteins it maintains the balanced level of cholestrol

if any mutation or dysfuntion occur in LDL recepters can cause elevation of cholesterol and other cardiac issiues like atherosclerosis

Point: 1.5

Question N73 HMG-coA reductase is a major regulatory enzyme in cholesterol metabolism

Answer:

1

Point: 0.25

Question N74 Which steroid hormone is primarily responsible for the regulation of sodium and potassium balance?

Answer:

Aldosterone

Point: 0.4

Question N75 Which enzyme is deficient in Congenital Adrenal Hyperplasia (CAH) resulting in impaired cortisol synthesis

Answer:

21-Hydroxylase

Point: 0.4

Question N76 A 5-year-old boy presents with ambiguous genitalia, increased pigmentation of the skin, and signs of early puberty. Laboratory tests reveal elevated levels of 17-hydroxyprogesterone and androgens, but low cortisol levels. Imaging shows an enlarged adrenal gland. Genetic testing indicates a deficiency of an enzyme involved in cortisol synthesis.

Answer:

21-Hydroxylase; accumulation of 17-hydroxyprogesterone and increased androgen production

Point: 0.4

Question N77 Which enzyme catalyzes the rate-limiting step in steroid hormone biosynthesis?

Answer:

Cholesterol desmolase (P450scc)~nbsp;

Point: 0.4

Question N78 Write down at least 3 androgenic hormones

Answer:

testosterone

dihydrotestosterone

dehydroepiandrosterone

Point: 1.5

Question N79 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

~nbsp;phosphatidic acid

Point: 0.4

Question N80 Which one has ether bond? ~nbsp;

Answer:

Plasmalogen

notifications

search

notifications

View Exams

Sum of Points: 23.0

Question N1 Brain cells completely depend of anaerobic glucose usage

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by hexokinase is the only irreversible reaction in glycolysis

Answer:

0

Point: 0.25

Question N3 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Glyceraldehyde 3-phosphate dehydrogenase

Point: 0

Question N4 Which of the following cell use only glycolysis?

Answer:

Red blood cells

Point: 0.4

Question N5 Which of the following enzymes catalyzes phosphorylation of the glucose in the cell?

Answer:

Pyruvate kinase

Point: 0

Question N6 Which of the following enzymes catalyzes the irreversible step of glycolysis?

Answer:

Pyruvate kinase

Point: 0.4

Question N7 Write down the three irreversible steps of glycolysis

Answer:

GLUCOSE TO GLUCOSE 6 PHOSPHATE, GLUCOSE3PHOSPHATE TO GLUCOSE2 PHOSPHATE, GLUCOSE PHOSPHATE TO PYRUVASE

Point: 0.5

Question N8 Glycogen phosphorylase is activated by insulin

Answer:

1

Point: 0

Question N9 Glycogen synthesis is active during fed state

Answer:

0

Point: 0

Question N10 Which enzyme catalyzes the creation of glycosidic α (1->4) bonds?

Answer:

Phosphoglucomutase

Point: 0

Question N11 Phosphorylation:

Answer:

Activates glycogen synthase

Point: 0

Question N12 Which bonds are broken by glycogen phosphorylase?

Answer:

alpha 1->4 glycosydic bonds

Point: 0.4

Question N13 Which of the following cells have glucose-6-phosphatase activity?

Answer:

RBCs

Point: 0

Question N14 Explain the function of glycogenin

Answer:

GLYCOGENIN IS A SELF ACTIVATOR WHICH HELP IN THE SYNTHESIS OF GLYCOGEN IT HELP IN THE SYNTHESIS OF GLYCOGEN BY SELF ACTIVATION

Point: 1.5

Question N15 Gluconeogenesis is a simple reverse of the glycolysis

Answer:

0

Point: 0.25

Question N16 Fructose 1,6-bisphosphatase bypasses the glycolytic reaction catalyzed by phosphofructokinase

Answer:

1

Point: 0.25

Question N17 How does fructose 2,6-bisphosphate affect the gluconeogenesis?

Answer:

It inhibits it

Point: 0.4

Question N18 Which of the following compounds is not glucogenic?

Answer:

Odd chain fatty acids

Point: 0

Question N19 What is the major site of gluconeogenesis?

Answer:

Liver

Point: 0.4

Question N20 Which of the following an be used as a substrate for gluconeogenesis?

Answer:

Glycerol

Point: 0.4

Question N21 How does glucagon affect the gluconeogenesis, Explain your answer

Answer:

SO GLUCOGON HELP TO PROMOTE GLUCONEOGENESIS

Point: 1.5

Question N22 Two molecules of ATP is synthesized during pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 In pentose phosphate pathway 5-phosphogluconolactone is aproduct of a reaction catalysed by glucose 6-phosphate dehydrogenase

Answer:

1

Point: 0.25

Question N24 Which of the following products of PPP is needed for normal glutathion antioxidant activity?

Answer:

NADPH

Point: 0.4

Question N25 Which of the following is a final product of oxidative phase of PPP?

Answer:

Ribulose 5-phosphate

Point: 0.4

Question N26 Which enzyme is a regulated site in PPP?

Answer:

Glucose 6-phosphate dehydrogenase

Point: 0.4

Question N27 Which phase is irreversible in PPP?

Answer:

Oxidative

Point: 0.4

Question N28 Which glycolytic intermediates can be produced During PPP?

Answer:

THE GLYCOLYTIC INTERMEDIATES ARE RIBULOSE BISPHOSTAE AND GLUCOLACTONATE

Point: 0.5

Question N29 Increasing the chain length of a fatty acid decreases the melting temperature of that fatty acid

Answer:

0

Point: 0.25

Question N30 Double bonds of most of the unsaturated fatty acids are in cis configuration

Answer:

1

Point: 0.25

Question N31 Which of the following lipids is stored as fat in adipose tissue?

Answer:

Triacylglycerols

Point: 0.4

Question N32 Monounsaturated fatty acids:

Answer:

Do not contain double bond

Point: 0

Question N33 In most of the unsaturated fatty acids, double bond has:

Answer:

Cis configuration

Point: 0.4

Question N34 What if the name of the following structure: Glycerol 2 fatty acids Phosphate

Answer:

Phosphatidic acid

Point: 0.4

Question N35 Release of FFA-s from adipose tissue is catalysed by lipoprotein lipase

Answer:

1

Point: 0

Question N36 Long chain fatty acids are transported into the mitochondria by carnitine shuttle

Answer:

1

Point: 0.25

Question N37 Which of the following is a coenzyme for Acyl coA dehydrogenase?

Answer:

FAD

Point: 0.4

Question N38 Which of the ketone bodies is first synthesized from HMG-coA?

Answer:

Acetoacetate

Point: 0.4

Question N39 Which of the following cells can not use fatty acids as alternative fuel?

Answer:

None of them can

Point: 0.4

Question N40 Which part of a cell does beta-oxidation of fatty acids take place?

Answer:

Mitochondria

Point: 0.4

Question N41 Which coenzymes are being reduced during the oxidative phases of FFA beta-oxidation?

Answer:

GLUCOSE6PHOSPHODEHYDROGENASE

Point: 0

Question N42 Formation of malonyl coA from acetyl coA is a carboxylation reaction

Answer:

1

Point: 0.25

Question N43 In order to transport acetyl-coA from mitochondria to cytosool it needs to condensate with oxaloacetate to produce citrate which will be transported to cytosol

Answer:

1

Point: 0.25

Question N44 Which of the following activates acetyl coA carboxylase?

Answer:

Citrate

Point: 0.4

Question N45 Where does fatty acid elongation take place?

Answer:

Mitochondria

Point: 0

Question N46 How many CO2s does one acetyl-coA give rise to?

Answer:

Two

Point: 0.4

Question N47 Which enzyme catalyzes the reaction that uses acetyl-coA and produces malonyl-coA?

Answer:

Acetyl-coA~nbsp; carboxilase

Point: 0.4

Question N48 What is the role of ACP and cys-SH domains of fatty acid synthase in process of fatty acid synthesis?

Answer:

SO ACP HELP IN FATTY ACID GROWTH AND CYS SH HELP IN HOLDING THE CHAIN

Point: 1

Question N49 Glucagon promotes triacylglycerol synthesis

Answer:

1

Point: 0

Question N50 Diacylglycerol acyltransferase is a rate-limiting enzyme in triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N51 High amount of glucagon:

Answer:

Inhibits the lipogenesis

Point: 0.4

Question N52 Which enzyme catalyzes breakdown of dietary lipids?

Answer:

Lipoprotein lipase

Point: 0

Question N53 A 55-year-old male with a history of coronary artery disease has elevated plasma triglycerides and low HDL levels. Lipoprotein analysis shows increased VLDL. Question: This dyslipidemia primarily results from impaired metabolism of which lipid? ~nbsp;

Answer:

(TAG)~nbsp; triglycerides

Point: 0.4

Question N54 A neonate presents with eruptive xanthomas and pancreatitis. Blood tests show extremely high triglyceride levels, and genetic testing indicates lipoprotein lipase deficiency. Question: This enzyme deficiency impairs the hydrolysis of triglycerides in which lipoproteins?

Answer:

Chylomicrons and VLDL

Point: 0.4

Question N55 What is the fate of glycerol after it is released from TAG due to lipolysis?

Answer:

IT IS THEN TRANSPORTED OUTSIDE THE CELL

Point: 1

Question N56 LDL is involved in reverse cholesterol transport

Answer:

1

Point: 0

Question N57 Lipoprotein lipase breaks down the triacylglycerols in chylomicrons

Answer:

1

Point: 0.25

Question N58 Anti-atherogenic actions of HDL other than reverse cholesterol transport is:

Answer:

Activation of endothelial nitric oxide synthase (eNOS).~nbsp;

Point: 0.4

Question N59 Xanthelasmas are associated with mutations of:

Answer:

Apo48 affecting reverse cholesterol transport.

Point: 0

Question N60 In obesity and diabetes mellitus, due to increased synthesis of the VLDL:

Answer:

Is decreased flux through the fuel transport pathway

Point: 0

Question N61 Membrane receptor ABCA1 -ATP-binding cassette transports cholesterol:

Answer:

Chylomicrones to VLDL

Point: 0

Question N62 ApoE contributes to cholesterol removal from the cell together with:

Answer:

ApoB100 in VLDL

Point: 0

Question N63 Which of the following is heaviest lipoprotein?

Answer:

HDL

Point: 0

Question N64 Explain reverse cholesterol transport

Answer:

SO IN REVERSE LDL IS TRANSPORTED TO THE CELLS

Point: 0.5

Question N65 Cholesteryl esters are more hydrophilic than free cholesterol

Answer:

1

Point: 0

Question N66 Which of the following lipoproteins have highest protein content ?

Answer:

HDL

Point: 0.4

Question N67 Which of the following lipoproteins transport exogenous~nbsp; triacylglycerols?

Answer:

HDL

Point: 0

Question N68 Which apolipoprotein activates lipoprotein lipase?

Answer:

Apo C-II

Point: 0.4

Question N69 Which tissues contain the biggest amount of lipoprotein lipase?

Answer:

Adipose tissue

Point: 0

Question N70 Which lipoprotein acts as a donor of Apo C-II?

Answer:

LDL

Point: 0

Question N71 The primary site of cholesterol storage in cells is in the form of

Answer:

Free cholesterol in the cytoplasm

Point: 0

Question N72 Explain the process of cholesterol esterification within celss and the significance of cholesteryl esters in lipid metabololism

Answer:

CHOLESTROL ESTERIFICATION OCCURS IN LIVER CELLS WITH THE HELP OF BILE

Point: 0.5

Question N73 Cholesterol is the precursore of all steroid hormones

Answer:

1

Point: 0.25

Question N74 Which enzyme is responsible for the conversion of testosterone to estradiol?

Answer:

Aromatase~nbsp;

Point: 0.4

Question N75 The enzyme involved in the final step of aldosterone synthesis is

Answer:

21-Hydroxylase~nbsp;

Point: 0

Question N76 The enzyme aromatase catalyzes

Answer:

The conversion of testosterone to dihydrotestosterone~nbsp;

Point: 0

Question N77 The synthesis of mineralocorticoids occurs mainly in which zone of the adrenal cortex

Answer:

Zona glomerulosa

Point: 0.4

Question N78 Write down at least 3 androgenic hormones

Answer:

TESTROSTERONE , ESTROGEN ,ESTRADIOL

Point: 0.5

Question N79 Which one is very important for nervous tissue? ~nbsp;

Answer:

Cardiolipin

Point: 0.4

Question N80 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

~nbsp;phosphatidic acid

BIOCHEMISTRY

Question N1 Glucokinase has a higher affinity to glucose than hexokinase

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by Phosphoglucose isomerase is the rate-limiting step in glycolysis

Answer:

0

Point: 0.25

Question N3 Which of the following cell use only glycolysis?

Answer:

Muscle cells

Point: 0

Question N4 Which of the following enzymes catalyzes phosphorylation of the glucose in the cell?

Answer:

Hexokinase

Point: 0.4

Question N5 Which of the following enzymes catalyzes the irreversible step of glycolysis?

Answer:

Pyruvate kinase

Point: 0.4

Question N6 In anaerobic conditions pyruvate is transformed to:

Answer:

Lactate

Point: 0.4

Question N7 Write down the enzymes that catalyze the reactions where ATP is being used up (not produced)

Answer:

PFK-1 and GLUCOSE 6 PHOSPHATSE

Point: Not Checked

Question N8 Glicogenin initiates the glycogen synthesis by self-glucosylating

Answer:

1

Point: 0.25

Question N9 At branch points there are a 1->4 glycosydic bonds in glycogen structure

Answer:

0

Point: 0.25

Question N10 Which enzyme transforms glucose 6-phosphate into glucose 1-phosphate?

Answer:

Phosphoglucomutase

Point: 0.4

Question N11 To which nucleotide is glucose attached to in order to go into glycogenesis?

Answer:

UDP

Point: 0.4

Question N12 cAMP pathway provides:

Answer:

Activation of glycogen phosphorylase

Point: 0.4

Question N13 Which of the following statements is correct?

Answer:

Glycogen synthase is inactivated by phosphorylation and Glycogen phosphorylase is activated by it

Point: 0.4

Question N14 Which one of the ETC components of the electron transport chain only accepts electrons, and does not donate them? Explain your answer

Answer:

Complex IV as known as cytochrome c oxidase is the ETC Componet that only acccepts electrons and do not donate. the intaked oxygen is broken down into water

Point: Not Checked

Question N15 Gluconeogenesis is a simple reverse of the glycolysis

Answer:

0

Point: 0.25

Question N16 Fructose 1,6-bisphosphatase bypasses the glycolytic reaction catalyzed by phosphofructokinase

Answer:

1

Point: 0.25

Question N17 Which enzyme bypasses the glycolytic PFK-1 reaction, in gluconeogenesis?

Answer:

Fructose 1,6-bisphosphatase

Point: 0.4

Question N18 Which enzyme uses GTP as energy source during gluconeogenesis?

Answer:

PEP carboxykinase

Point: 0.4

Question N19 Which of the following can be used for gluconeogenesis?

Answer:

All of them

Point: 0.4

Question N20 Which of the following enzymes catalyzes the reaction in gluconeogenesis when GTP is used as a phosphate donor?

Answer:

PEP carboxykinase

Point: 0.4

Question N21 Explain Reciprocal regulation of Gluconeogenesis

Answer:

gluconeogenesis means the formation of glucose form non carbohydrate molecules. In gluconeogensis phosphorylation activates it while dephosphorylation inhibits it which is the reciprocal of what is happeneing in glycolysis.

Point: Not Checked

Question N22 NAD is a coenzyme in redox reactions in Pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 Ribulose-5-phosphate is a product of oxidative part of pentose phosphate pathway

Answer:

1

Point: 0.25

Question N24 Which of the following enzymes catalyzes the reversible step in pentose phosphate pathway?

Answer:

Transketolase

Point: 0.4

Question N25 Which enzyme catalyzes the reaction where a ketopentose is produced in pentose phosphate pathway?

Answer:

Transketolase

Point: 0

Question N26 Which of the following is the cofactor of glutathion reductase?

Answer:

FADH2

Point: 0

Question N27 Which enzyme catalyzes the commited step of pentose phosphate pathway?

Answer:

Ribulose 5 -phosphate 3-epimerase

Point: 0

Question N28 Why does fructose undergo more rapid glycolysis in the liver than does glucose, Explain your answer

Answer:

fructose bypasses PFK-1 enzyme faster than glucose and makes it available as DHAP for futher process of glycolysis

Point: Not Checked

Question N29 Fatty acids are amphipathic molecules

Answer:

1

Point: 0.25

Question N30 Saturated fatty acids contain one or more double bond

Answer:

0

Point: 0.25

Question N31 Fatty acids with more that one doeble bonds are called:

Answer:

Polyunsaturated

Point: 0.4

Question N32 How many carbons do eicosanoids contain?

Answer:

20

Point: 0.4

Question N33 Which alcohol backbone do glycolipids contain?

Answer:

Glycerol

Point: 0

Question N34 Cholesteryl esters contain cholesterol and:

Answer:

Fatty acid

Point: 0.4

Question N35 Fatty acid thiokinase provides the activation of fatty acids before beta-oxidation

Answer:

1

Point: 0.25

Question N36 Acetone is the first one out of the ketone bodies to be synthesized

Answer:

0

Point: 0.25

Question N37 Which of the following is a coenzyme for Acyl coA dehydrogenase?

Answer:

FAD

Point: 0.4

Question N38 Which of the ketone bodies is first synthesized from HMG-coA?

Answer:

Acetoacetate

Point: 0.4

Question N39 Which of the following cells can not use fatty acids as alternative fuel?

Answer:

RBCs

Point: 0

Question N40 Which part of a cell does beta-oxidation of fatty acids take place?

Answer:

Mitochondria

Point: 0.4

Question N41 What are the main differences between HDl and LDL

Answer:

HDL --> HEALTHY(/good cholestrol), they transport cholestrol to the liver

LDL --> LETHAL(/bad cholestrol), they transport cholestrol to required organs and cells

Point: Not Checked

Question N42 Formation of malonyl coA from acetyl coA is a carboxylation reaction

Answer:

1

Point: 0.25

Question N43 In order to transport acetyl-coA from mitochondria to cytosool it needs to condensate with oxaloacetate to produce citrate which will be transported to cytosol

Answer:

1

Point: 0.25

Question N44 Dephosphorylation activates enzyme Acetyl-coA carboxylase. According to this, which of the following hormones activate this enzyme?

Answer:

Insulin

Point: 0.4

Question N45 Which two vitamins are acting as cofactors at different levels of fatty acid synthesis?

Answer:

Vitamins B5 and B7

Point: 0.4

Question N46 How is acetyl coA transported from mitochondria to cytosol for fatty acid synthesis?

Answer:

As citrate

Point: 0.4

Question N47 What is the coenzyme for acetyl coA carboxylase?

Answer:

Biotin

Point: 0.4

Question N48 Write down the function of palmitoyl thioesterase. Explain your answer

Answer:

It esterifies pamitoyl thioester

Point: Not Checked

Question N49 Glucagon promotes triacylglycerol synthesis

Answer:

1

Point: 0

Question N50 Diacylglycerol acyltransferase is a rate-limiting enzyme in triacylglycerol synthesis

Answer:

0

Point: 0

Question N51 Which enzyme catalyses the hydrolysis of TAGs form VLDL and chylomicrons?

Answer:

Pancreatic lipase

Point: 0

Question N52 Which of the following hormones promotes lipogenesis?

Answer:

Insulin

Point: 0.4

Question N53 What is the product of acyl coA combining with glycerol 3-phosphate?

Answer:

Monoacylglycerol

Point: 0

Question N54 Which enzyme transforms glycerol into an activated form?

Answer:

Fatty acyl coA synthetase

Point: 0

Question N55 How is glycerol utilized after being released form TAGs?

Answer:

Glycerol can be utilised in both glycolysis(DHAP) and gluconeogensis after being realesed from TAGs

Point: Not Checked

Question N56 LDL is involved in reverse cholesterol transport

Answer:

0

Point: 0.25

Question N57 Lipoprotein lipase breaks down the triacylglycerols in chylomicrons

Answer:

1

Point: 0.25

Question N58 Triacylglycerols are derived from: ~nbsp;

Answer:

Dietary fatty acids and Endogenous synthesis

Point: 0.4

Question N59 ApoA2 is present in HDL and:

Answer:

Activates LCAT, CEPT and inhibits LPL

Point: 0.4

Question N60 Which of the lipoprotein receptors (ApoB/E or Scavenger) is selective?

Answer:

Both of them

Point: 0

Question N61 Anti-atherogenic actions of HDL other than reverse cholesterol transport is:

Answer:

Activation of endothelial nitric oxide synthase (eNOS).~nbsp;

Point: 0.4

Question N62 Xanthelasmas are associated with mutations of:

Answer:

ApoA1, affecting reverse cholesterol transport.

Point: 0.4

Question N63 In obesity and diabetes mellitus, due to increased synthesis of the VLDL:

Answer:

Flux through the fuel transport and overflow pathways remain more or less stable.~nbsp;

Point: 0

Question N64 Explain reverse cholesterol transport

Answer:

HDL promotes reverse cholestrol transport where cholestrol is brought back to liver for excretion.

Point: Not Checked

Question N65 High sterol levels promote HMG-coA reductase activity

Answer:

0

Point: 0.25

Question N66 A newborn is diagnosed with abetalipoproteinemia, characterized by absence of apolipoprotein B-containing lipoproteins. What is the primary defect in cholesterol metabolism?

Answer:

~nbsp;Impaired assembly and secretion of all lipoproteins

Point: 0

Question N67 A patient is diagnosed with sitosterolemia, a rare condition involving increased absorption of plant sterols. How does this disorder affect cholesterol metabolism

Answer:

Elevated plasma plant sterol levels compete with cholesterol, leading to increased cholesterol absorption~nbsp;

Point: 0

Question N68 A patient with liver cirrhosis develops elevated serum cholesterol levels. Which pathway of cholesterol metabolism is likely disrupted?

Answer:

Cholesterol esterification in tissues~nbsp;

Point: 0

Question N69 Which of the following lipoproteins have highest protein content ?

Answer:

HDL

Point: 0.4

Question N70 Which of the following lipoproteins transport exogenous~nbsp; triacylglycerols?

Answer:

Chylomicrons

Point: 0.4

Question N71 Which apolipoprotein activates lipoprotein lipase?

Answer:

Apo C-II

Point: 0.4

Question N72 Explain the process of cholesterol esterification within celss and the significance of cholesteryl esters in lipid metabololism

Answer:

Cholestrol is esterified into cholestrol esters and fatty acids: free up cholestrol build up in the body

Point: Not Checked

Question N73 DHEA is female sex hormone

Answer:

1

Point: 0

Question N74 Which hormone stimulates the production of cortisol in the adrenal cortex?

Answer:

~nbsp;Adrenocorticotropic hormone (ACTH)

Point: 0.4

Question N75 Which steroid hormone is primarily responsible for the regulation of sodium and potassium balance?

Answer:

Aldosterone

Point: 0.4

Question N76 Which enzyme is deficient in Congenital Adrenal Hyperplasia (CAH) resulting in impaired cortisol synthesis

Answer:

21-Hydroxylase

Point: 0.4

Question N77 A 5-year-old boy presents with ambiguous genitalia, increased pigmentation of the skin, and signs of early puberty. Laboratory tests reveal elevated levels of 17-hydroxyprogesterone and androgens, but low cortisol levels. Imaging shows an enlarged adrenal gland. Genetic testing indicates a deficiency of an enzyme involved in cortisol synthesis.

Answer:

21-Hydroxylase; accumulation of 17-hydroxyprogesterone and increased androgen production

Point: 0.4

Question N78 Write down at least 3 androgenic hormones

Answer:

testosterone, androgestrotroine, DHAT

Point: Not Checked

Question N79 Which one has ether bond? ~nbsp;

Answer:

all of them

Point: 0

Question N80 Which one is very important for nervous tissue? ~nbsp;

Answer:

Cardiolipin

Point: 0.4

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Study Process

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Sum of Points: 24.2

Question N1 Glycolysis can only proceed in aerobic conditions

Answer:

0

Point: 0.25

Question N2 Reaction catalyazed by phosphofructokinase is reversible

Answer:

0

Point: 0.25

Question N3 Which of following enzymes catalyzes the last step when ATP is produced during the glycolysis?

Answer:

Glucokinase

Point: 0

Question N4 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N5 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Glyceraldehyde 3-phosphate dehydrogenase

Point: 0

Question N6 Which of the following cell use only glycolysis?

Answer:

Red blood cells

Point: 0.4

Question N7 Write down the step of glycolysis when NADH is produced

Answer:

CI , CII and Breakdown of glycolysis

Point: 0

Question N8 Glycogenin is a dimer protein that inititates glycogen breakdown

Answer:

0

Point: 0.25

Question N9 Glycogen branching enzyme trasfers 7 glucose residues to make 1->6 glycosydic linkages

Answer:

1

Point: 0.25

Question N10 Which of the following tissues have thier own glycogen storage?

Answer:

Muscle

Point: 0.4

Question N11 Which nucleotide does glucose get attached to for glycogen synthesis?

Answer:

UDP

Point: 0.4

Question N12 Which of the following hormones stimulates glycogen synthesis?

Answer:

All of them

Point: 0

Question N13 Which of the following is a coenzyme of glycogen phosphorylase?

Answer:

Pyridoxal phosphate

Point: 0.4

Question N14 Explain the function of glycogenin

Answer:

The function of Glycogenin is to help In TCA cycle

Point: 0

Question N15 in gluconeogenesis pyruvate is transformed into oxaloacetate by pyruvate carboxilase

Answer:

1

Point: 0.25

Question N16 Pyruvate carboxylase is allosterically inhibited by acetyl coA

Answer:

0

Point: 0.25

Question N17 What is the product of pyruvate carboxilase reaction?

Answer:

Oxaloacetate

Point: 0.4

Question N18 Which enzyme catalyzes the transformation of pyruvate into oxaloacetate?

Answer:

Pyruvate kinase

Point: 0

Question N19 Which enzyme bypasses the glycolytic PFK-1 reaction, in gluconeogenesis?

Answer:

Fructose 1,6-bisphosphatase

Point: 0.4

Question N20 Which enzyme uses GTP as energy source during gluconeogenesis?

Answer:

Fructose 1,6-bisphosphatase

Point: 0

Question N21 How does glucagon affect the gluconeogenesis, Explain your answer

Answer:

Glucagon promotes the Gluconeogenesis for the phosphorylation

Point: 1.5

Question N22 NADH is one of the products of the pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 Pentose phosphate pathway can be divided into two phases: oxidative and nonoxidative

Answer:

1

Point: 0.25

Question N24 Which one is the product of the pentose phosphate pathway?

Answer:

Ribose-5-phosphate

Point: 0.4

Question N25 Which part of the cell does the pentose phosphate pathway take place?

Answer:

Mitochondria

Point: 0

Question N26 Which biochemical reductant is produced by pentose phosphate pathway?

Answer:

NADPH

Point: 0.4

Question N27 Which of the following hormones stimulates the ativity of glucose 6-phosphate dehydrogenase

Answer:

Insulin

Point: 0.4

Question N28 Write down the step of the oxidative phase in pentose phosphate pathway that results in production of pentose sugar phosphate

Answer:

G6 6PGL 6PG R5P

Point: 0

Question N29 Fatty acids, containing double bonds are considered unsaturated

Answer:

1

Point: 0.25

Question N30 Tryglycerides contain three fatty acid residues connected to alcohol sphingosine

Answer:

0

Point: 0.25

Question N31 Fatty acids that do not contain any double bonds are:

Answer:

Unsaturated

Point: 0

Question N32 Fatty acids are stored in adipose tissue, as:

Answer:

Tryacylglycerols

Point: 0.4

Question N33 How does level of unsaturation affect the melting point of even-numbered fatty acids?

Answer:

The more unsaturated the fatty acids are, lower their melting point is

Point: 0.4

Question N34 The terminal methyl carbon of fatty acid is called

Answer:

Omega

Point: 0.4

Question N35 Beta-oxidation of fatty acids takes place in mitochondria

Answer:

1

Point: 0.25

Question N36 Carnitine shuttle is used to transport long-chain fatty acids from cytosol to mitochondria

Answer:

1

Point: 0.25

Question N37 Which of the following cells can not use fatty acids as alternative fuel?

Answer:

None of them can

Point: 0.4

Question N38 Which part of a cell does beta-oxidation of fatty acids take place?

Answer:

Mitochondria

Point: 0.4

Question N39 For fatty acid beta-oxidation acylcarnitine is transported through the mitochondrial membrane in exchange of:

Answer:

Carnitine

Point: 0.4

Question N40 How does malonyl coA affect the carnitine palmytoiltransferase-1 activity?

Answer:

It inhibits it

Point: 0.4

Question N41 Explain the function and mechanism of carnitine shuttle

Answer:

The primary function of Carnitine shuttle is to helps in transportation of long chained fatty acid in to the mictochondria

Point: 1.2

Question N42 In order to transport acetyl-coA from mitochondria to cytosool it needs to condensate with oxaloacetate to produce citrate which will be transported to cytosol

Answer:

1

Point: 0.25

Question N43 Vitamin B7 is a coenzyme for acetyl-coA carboxylase

Answer:

1

Point: 0.25

Question N44 How many NADPH molecules are required in 1 cycle of the Fatty acid synthase?

Answer:

1

Point: 0.4

Question N45 Citrate molecule, that leaves the mitochondria and goes to cytoplasm, gives rise to which molecule after cleavage, besides acetyl coA?

Answer:

Oxaloacetate

Point: 0.4

Question N46 Dephosphorylation activates enzyme Acetyl-coA carboxylase. According to this, which of the following hormones activate this enzyme?

Answer:

Insulin

Point: 0.4

Question N47 Which two vitamins are acting as cofactors at different levels of fatty acid synthesis?

Answer:

Vitamins B5 and B7

Point: 0.4

Question N48 What is the role of ACP and cys-SH domains of fatty acid synthase in process of fatty acid synthesis?

Answer:

There is a major Role for ACP and cys-SH domains of fatty acid synthase in process of fatty acid synthase ,

It helps in breakdown and helps to form fatty acid synthase in fatty acid synthesis

Point: 1.5

Question N49 Diacylglycerol acyltransferase is a rate-limiting enzyme in triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N50 Insulin activates triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N51 During Tay-Sachs Disease whoch one is accumulated?

Answer:

Sphingomyelin~nbsp;

Point: 0

Question N52 Which pathway can the glycerol get involved in after being released from TAGs?

Answer:

All of them

Point: 0

Question N53 Which enzyme catalyses the hydrolysis of TAGs form VLDL and chylomicrons?

Answer:

Lipoprotein lipase

Point: 0.4

Question N54 Which of the following hormones promotes lipogenesis?

Answer:

All of them

Point: 0

Question N55 Which hormones activate lipolysis?

Answer:

The hormone which activate lipolysis is cortisol

Point: 1

Question N56 Lipoprotein lipase breaks down the triacylglycerols in chylomicrons

Answer:

1

Point: 0.25

Question N57 Apo B-100 is a specific apolipoprotein for HDL

Answer:

0

Point: 0.25

Question N58 Anti-atherogenic actions of HDL other than reverse cholesterol transport is:

Answer:

Activation of endothelial nitric oxide synthase (eNOS).~nbsp;

Point: 0.4

Question N59 Xanthelasmas are associated with mutations of:

Answer:

ApoA1, affecting reverse cholesterol transport.

Point: 0.4

Question N60 In obesity and diabetes mellitus, due to increased synthesis of the VLDL:

Answer:

Is decreased flux through the fuel transport pathway

Point: 0

Question N61 Membrane receptor ABCA1 -ATP-binding cassette transports cholesterol:

Answer:

Chylomicrones to VLDL

Point: 0

Question N62 ApoE contributes to cholesterol removal from the cell together with:

Answer:

ApoA1 in HDL

Point: 0.4

Question N63 Which of the following is heaviest lipoprotein?

Answer:

HDL

Point: 0

Question N64 Explain the difference between ApoB/E and Scavenger~nbsp; receptors for cellular uptake of lipoproteins.

Answer:

The difference between ApoB/E and scavenger receptors for cellular uptka eof lipoproteins is that scavenger receptor inhibits th cellular uptake of lipoprotien where as the ApoB/E are primary source of lipoprotien

Point: 1.5

Question N65 Insulin downregulates the expression of the gene for HMG-coA reductase by activating SREBP

Answer:

1

Point: 0

Question N66 Which of the following lipoproteins have highest protein content ?

Answer:

HDL

Point: 0.4

Question N67 Which of the following lipoproteins transport exogenous~nbsp; triacylglycerols?

Answer:

Chylomicrons

Point: 0.4

Question N68 Which apolipoprotein activates lipoprotein lipase?

Answer:

Apo C-II

Point: 0.4

Question N69 Which tissues contain the biggest amount of lipoprotein lipase?

Answer:

skeletal muscles

Point: 0.4

Question N70 Which lipoprotein acts as a donor of Apo C-II?

Answer:

VLDL

Point: 0

Question N71 The primary site of cholesterol storage in cells is in the form of

Answer:

Free cholesterol in the cytoplasm

Point: 0

Question N72 Insulin and apoprotein C II - play a big role to activate which peripherial enzyme?

Answer:

Yes insulin and apoprotein CII plays a big role th perpherial enzyme . And the enzyme is Pyruvate kinase

Point: 0

Question N73 HMG-coA reductase is a major regulatory enzyme in cholesterol metabolism

Answer:

1

Point: 0.25

Question N74 Which enzyme catalyzes the rate-limiting step in steroid hormone biosynthesis?

Answer:

Cholesterol desmolase (P450scc)~nbsp;

Point: 0.4

Question N75 Which enzyme is responsible for the conversion of testosterone to estradiol?

Answer:

17~beta;-Hydroxysteroid dehydrogenase~nbsp;

Point: 0

Question N76 The enzyme involved in the final step of aldosterone synthesis is

Answer:

Aldosterone synthase (CYP11B2)

Point: 0.4

Question N77 The enzyme aromatase catalyzes

Answer:

~nbsp;The conversion of progesterone to cortisol~nbsp;

Point: 0

Question N78 Write down at least 3 androgenic hormones

Answer:

Insulin, epiphrine ,norepiphrine

Point: 0

Question N79 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

~nbsp;phosphatidic acid

Point: 0.4

Question N80 Which one has ether bond? ~nbsp;

Answer:

all of them

Point: 0

Sum of Points: 30.4

Question N1 Brain cells completely depend of anaerobic glucose usage

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by hexokinase is the only irreversible reaction in glycolysis

Answer:

0

Point: 0.25

Question N3 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N4 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Glyceraldehyde 3-phosphate dehydrogenase

Point: 0

Question N5 Which of the following cell use only glycolysis?

Answer:

Red blood cells

Point: 0.4

Question N6 Which of the following enzymes catalyzes phosphorylation of the glucose in the cell?

Answer:

Pyruvate kinase

Point: 0

Question N7 How does high concentration of ATP affect the activity of phosphofructokinase? Explain your answer

Answer:

because when atp concentration increases they will produce more glucose in our body that will affect fructose even though they have faster glycolysis by skipping key regulatory step. atp production in our body balance our body glucose and they are necessary for fatty acid synthesis etc.

Point: 0

Question N8 Hexokinase is an enzyme that catalyzes the first reaction in gluconeogenesis

Answer:

0

Point: 0.25

Question N9 In gluconeogenesis, Pyruvate carboxylase and PEP carboxykinase bypass the glycolytic pyruvate kinase reaction

Answer:

1

Point: 0.25

Question N10 Which enzyme catalyzes the creation of glycosidic α (1->4) bonds?

Answer:

Glycogen synthase

Point: 0.4

Question N11 Phosphorylation:

Answer:

Activates glycogen synthase

Point: 0

Question N12 Which bonds are broken by glycogen phosphorylase?

Answer:

alpha 1->4 glycosydic bonds

Point: 0.4

Question N13 Which of the following cells have glucose-6-phosphatase activity?

Answer:

Liver

Point: 0.4

Question N14 Which one of the ETC components of the electron transport chain only accepts electrons, and does not donate them? Explain your answer

Answer:

Oxygen is the ETC component wich only accepts electron and they dont donate and in the end they reduced into water

Point: 1.5

Question N15 in gluconeogenesis pyruvate is transformed into oxaloacetate by pyruvate carboxilase

Answer:

1

Point: 0.25

Question N16 Pyruvate carboxylase is allosterically inhibited by acetyl coA

Answer:

0

Point: 0.25

Question N17 Which of the following compounds is not glucogenic?

Answer:

Even chain fatty acids

Point: 0.4

Question N18 What is the major site of gluconeogenesis?

Answer:

Liver

Point: 0.4

Question N19 Which of the following an be used as a substrate for gluconeogenesis?

Answer:

Glycerol

Point: 0.4

Question N20 Which enzyme bypasses the glycolytic hexokinase step in gluconeogenesis?

Answer:

Glucose-6 phosphatase

Point: 0.4

Question N21 Explain Reciprocal regulation of Gluconeogenesis

Answer:

glycolysis and gluconeogenesis are regulated oppositely, if one is active the other one will be inactive

phosphorylation:-

gluconeogenesis ON and glycolysis is OFF

dephosphorylation:-

gluconeogenesis OFF and glycolysis is ON

Point: 1.5

Question N22 Two molecules of ATP is synthesized during pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 In pentose phosphate pathway 5-phosphogluconolactone is aproduct of a reaction catalysed by glucose 6-phosphate dehydrogenase

Answer:

1

Point: 0.25

Question N24 Which of the following products of PPP is needed for normal glutathion antioxidant activity?

Answer:

NADPH

Point: 0.4

Question N25 Which of the following is a final product of oxidative phase of PPP?

Answer:

Ribulose 5-phosphate

Point: 0.4

Question N26 Which enzyme is a regulated site in PPP?

Answer:

Glucose 6-phosphate dehydrogenase

Point: 0.4

Question N27 Which phase is irreversible in PPP?

Answer:

Oxidative

Point: 0.4

Question N28 Compare PPP and glycolysis to each other. Write similarities

Answer:

PPP

glucose-6-phosphate converts to 6-phosphogluconolactone by the enzyme glucose-6-phosphate dehydrogenase

6-phosphogluconolactone converts to 6-phosphogluconate by the enzyme lactonase

6-phosphogluconate then give the final product ripulose-5-phosphate by the enzyme 6-phosphogluconate dehydrogenase

glycolysis

glyceraldehyde-6-phosphate is converted to 1,3 bisphosphoglycerate by the enzyme glyceraldehyde-6-phosphate dehydrogenase and then again converts to glycerol to store in tissues

Point: 1.5

Question N29 Increasing the chain length of a fatty acid decreases the melting temperature of that fatty acid

Answer:

0

Point: 0.25

Question N30 Double bonds of most of the unsaturated fatty acids are in cis configuration

Answer:

1

Point: 0.25

Question N31 Which of the following lipids is stored as fat in adipose tissue?

Answer:

Triacylglycerols

Point: 0.4

Question N32 Monounsaturated fatty acids:

Answer:

Contain one double bond

Point: 0.4

Question N33 In most of the unsaturated fatty acids, double bond has:

Answer:

Cis configuration

Point: 0.4

Question N34 What if the name of the following structure: Glycerol 2 fatty acids Phosphate

Answer:

Phosphatidic acid

Point: 0.4

Question N35 Release of FFA-s from adipose tissue is catalysed by lipoprotein lipase

Answer:

0

Point: 0.25

Question N36 Long chain fatty acids are transported into the mitochondria by carnitine shuttle

Answer:

1

Point: 0.25

Question N37 Which of the following cells can not use fatty acids as alternative fuel?

Answer:

None of them can

Point: 0.4

Question N38 Which part of a cell does beta-oxidation of fatty acids take place?

Answer:

Mitochondria

Point: 0.4

Question N39 For fatty acid beta-oxidation acylcarnitine is transported through the mitochondrial membrane in exchange of:

Answer:

Carnitine

Point: 0.4

Question N40 How does malonyl coA affect the carnitine palmytoiltransferase-1 activity?

Answer:

It inhibits it

Point: 0.4

Question N41 Which peripheral tissues use ketone bodies , define why

Answer:

ketone bodies are used when our body is in fasting stage or starving , our won‘t be getting enough glucose or fatty acid for functioning so ketones are used for the further function and organs like brain use ketone as fuel

Point: 1.5

Question N42 In order to transport acetyl-coA from mitochondria to cytosool it needs to condensate with oxaloacetate to produce citrate which will be transported to cytosol

Answer:

1

Point: 0.25

Question N43 Vitamin B7 is a coenzyme for acetyl-coA carboxylase

Answer:

0

Point: 0

Question N44 Where does fatty acid elongation take place?

Answer:

Both of them

Point: 0.4

Question N45 How many CO2s does one acetyl-coA give rise to?

Answer:

Two

Point: 0.4

Question N46 Which enzyme catalyzes the reaction that uses acetyl-coA and produces malonyl-coA?

Answer:

Acetyl coA~nbsp; dehydrogenase

Point: 0

Question N47 Which enzyme catalyzes isomerization of citrate to isocitrate?

Answer:

Aconitase

Point: 0.4

Question N48 Write down the function of palmitoyl thioesterase. Explain your answer

Answer:

palmitoyl thioesterase is an enzyme that gives palmatate as the last product from fatty acid synthase in fatty acid synthesis

during the fatty acid synthase plamate(C16) is formed

and it is attached to the enzyme by a bond called thioester bond

and this bond is break by the enzyme palmitoyl thioesterase and release palmitate

Point: 1.5

Question N49 Diacylglycerol acyltransferase is a rate-limiting enzyme in triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N50 Insulin activates triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N51 Which enzyme catalyzes breakdown of dietary lipids?

Answer:

Pancreatic lipase

Point: 0.4

Question N52 A 55-year-old male with a history of coronary artery disease has elevated plasma triglycerides and low HDL levels. Lipoprotein analysis shows increased VLDL. Question: This dyslipidemia primarily results from impaired metabolism of which lipid? ~nbsp;

Answer:

Cholesterol esters

Point: 0

Question N53 A neonate presents with eruptive xanthomas and pancreatitis. Blood tests show extremely high triglyceride levels, and genetic testing indicates lipoprotein lipase deficiency. Question: This enzyme deficiency impairs the hydrolysis of triglycerides in which lipoproteins?

Answer:

HDL~nbsp;

Point: 0

Question N54 A 40-year-old patient develops progressive neurodegeneration. Examination reveals accumulation of sphingolipids in neural tissue. Genetic testing shows deficiency of ceramidase. Question: Deficiency of ceramidase causes accumulation of which lipid?

Answer:

Ceramide~nbsp;

Point: 0.4

Question N55 Which metabolic pathway, in glucose metabolism, provides the building blocks for TAGs? Explain your answer

Answer:

GLYCOLYSIS -> BY BREAKDOWN OF TAGS

TAG ARE IMPORTANT WHEN WE R IN FASTING STAGE OR STARVING SO IT WILL GIVE ENERGY PRODUCTION FOR THE GLUCOGENESIS ETCC...

Point: 0.8

Question N56 Lipoprotein lipase breaks down the triacylglycerols in chylomicrons

Answer:

1

Point: 0.25

Question N57 Apo B-100 is a specific apolipoprotein for HDL

Answer:

0

Point: 0.25

Question N58 Triacylglycerols are derived from: ~nbsp;

Answer:

Dietary fatty acids and Endogenous synthesis

Point: 0.4

Question N59 ApoA2 is present in HDL and:

Answer:

Activates LCAT, CEPT and inhibits LPL

Point: 0.4

Question N60 Which of the lipoprotein receptors (ApoB/E or Scavenger) is selective?

Answer:

ApoB/E

Point: 0.4

Question N61 Anti-atherogenic actions of HDL other than reverse cholesterol transport is:

Answer:

Inhibition of endothelial nitric oxide synthase (eNOS).~nbsp;

Point: 0

Question N62 Xanthelasmas are associated with mutations of:

Answer:

ApoA1, affecting reverse cholesterol transport.

Point: 0.4

Question N63 In obesity and diabetes mellitus, due to increased synthesis of the VLDL:

Answer:

Flux through the fuel transport and overflow pathways remain more or less stable.~nbsp;

Point: 0

Question N64 Explain the difference between ApoB/E and Scavenger~nbsp; receptors for cellular uptake of lipoproteins.

Answer:

Apo B/E is a receptor which is necessary for the lipoprotein and apoproteins

their are different type of lipoproteins based on the apoprotein we are classifying such as

HDL; is having Apo AI Apo All etcc..

LDL VLDL etc Apo B 100

CHYLOMICRON have Apo B48 etcc

Scavengers are receptors which is very rare unlike apoB/E

Point: 1.1

Question N65 LDL is produced in liver

Answer:

0

Point: 0.25

Question N66 A newborn is diagnosed with abetalipoproteinemia, characterized by absence of apolipoprotein B-containing lipoproteins. What is the primary defect in cholesterol metabolism?

Answer:

Defective conversion of cholesterol to bile acids

Point: 0

Question N67 A patient is diagnosed with sitosterolemia, a rare condition involving increased absorption of plant sterols. How does this disorder affect cholesterol metabolism

Answer:

Increased conversion of cholesterol to bile acids~nbsp;

Point: 0

Question N68 A patient with liver cirrhosis develops elevated serum cholesterol levels. Which pathway of cholesterol metabolism is likely disrupted?

Answer:

Cholesterol esterification in tissues~nbsp;

Point: 0

Question N69 Which of the following lipoproteins have highest protein content ?

Answer:

Chylomicrons

Point: 0

Question N70 Which of the following lipoproteins transport exogenous~nbsp; triacylglycerols?

Answer:

VLDL

Point: 0

Question N71 Which apolipoprotein activates lipoprotein lipase?

Answer:

Apo C-II

Point: 0.4

Question N72 Insulin and apoprotein C II - play a big role to activate which peripherial enzyme?

Answer:

chylomicron

Point: 0

Question N73 Cholesterol is the precursore of all steroid hormones

Answer:

1

Point: 0.25

Question N74 The synthesis of mineralocorticoids occurs mainly in which zone of the adrenal cortex

Answer:

Zona glomerulosa

Point: 0.4

Question N75 Which hormone stimulates the production of cortisol in the adrenal cortex?

Answer:

~nbsp;Adrenocorticotropic hormone (ACTH)

Point: 0.4

Question N76 Which steroid hormone is primarily responsible for the regulation of sodium and potassium balance?

Answer:

Aldosterone

Point: 0.4

Question N77 Which enzyme is deficient in Congenital Adrenal Hyperplasia (CAH) resulting in impaired cortisol synthesis

Answer:

21-Hydroxylase

Point: 0.4

Question N78 Write down at least 3 androgenic hormones

Answer:

TESTOSTERONE

DIHYDROTESTOSTERONE

ANDROSTENEDION

Point: 1.5

Question N79 Which one is very important for nervous tissue? ~nbsp;

Answer:

Cardiolipin

Point: 0.4

Question N80 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

~nbsp;phosphatidic acid

Point: 0.4

Sum of Points: 32.1

Question N1 Glucokinase has a higher affinity to glucose than hexokinase

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by Phosphoglucose isomerase is the rate-limiting step in glycolysis

Answer:

0

Point: 0.25

Question N3 Which of the following enzymes catalyzes the reaction in glycolysis, where NAD is reduced to NADH?

Answer:

Glyceraldehyde-3-phosphate dehydrogenase

Point: 0.4

Question N4 Which of following enzymes catalyzes the last step when ATP is produced during the glycolysis?

Answer:

Glucokinase

Point: 0

Question N5 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N6 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Glyceraldehyde 3-phosphate dehydrogenase

Point: 0

Question N7 Explain difference between glucokinase and hexokinase (at least 3)

Answer:

glucokinase has low affinity with glucose , it stimulates insulin , stimulates glycolysis

hekokinase has more affinity with glucose, it inhibits insulin and stimulates gluconeogenesis

Point: 1.5

Question N8 Glicogenin initiates the glycogen synthesis by self-glucosylating

Answer:

1

Point: 0.25

Question N9 At branch points there are a 1->4 glycosydic bonds in glycogen structure

Answer:

0

Point: 0.25

Question N10 Which enzyme transforms glucose 6-phosphate into glucose 1-phosphate?

Answer:

Phosphoglucomutase

Point: 0.4

Question N11 To which nucleotide is glucose attached to in order to go into glycogenesis?

Answer:

UDP

Point: 0.4

Question N12 cAMP pathway provides:

Answer:

Activation of glycogen phosphorylase

Point: 0.4

Question N13 Which of the following statements is correct?

Answer:

Glycogen synthase is inactivated by phosphorylation and Glycogen phosphorylase is activated by it

Point: 0.4

Question N14 Discuss the double action of debranching enzyme in glycogen breakdown, Explain your answer

Answer:

debranching enzyme helps in the formation of the branching enzymes by reacting on the glucose - 6 - phosphate

Point: 0

Question N15 Gluconeogenesis is a simple reverse of the glycolysis

Answer:

0

Point: 0.25

Question N16 Fructose 1,6-bisphosphatase bypasses the glycolytic reaction catalyzed by phosphofructokinase

Answer:

1

Point: 0.25

Question N17 How does fructose 2,6-bisphosphate affect the gluconeogenesis?

Answer:

It inhibits it

Point: 0.4

Question N18 Which of the following compounds is not glucogenic?

Answer:

Even chain fatty acids

Point: 0.4

Question N19 What is the major site of gluconeogenesis?

Answer:

Liver

Point: 0.4

Question N20 Which of the following an be used as a substrate for gluconeogenesis?

Answer:

Glycogen

Point: 0

Question N21 Which enzyme in PPP uses TPP as a coenzyme? Explain your answer

Answer:

phosphate pentose pathway uses TPP when glucosee-6-phosphate is oxidized into 6-phosphoglyconolutase

Point: 1.5

Question N22 NAD is a coenzyme in redox reactions in Pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 Ribulose-5-phosphate is a product of oxidative part of pentose phosphate pathway

Answer:

1

Point: 0.25

Question N24 Which of the following enzymes catalyzes the reversible step in pentose phosphate pathway?

Answer:

Transketolase

Point: 0.4

Question N25 Which enzyme catalyzes the reaction where a ketopentose is produced in pentose phosphate pathway?

Answer:

Transketolase

Point: 0

Question N26 Which of the following is the cofactor of glutathion reductase?

Answer:

NADPH

Point: 0.4

Question N27 Which enzyme catalyzes the commited step of pentose phosphate pathway?

Answer:

Glucose 6-phosphate dehydrogenase

Point: 0.4

Question N28 Why does fructose undergo more rapid glycolysis in the liver than does glucose, Explain your answer

Answer:

fructose undergo more rapid glycolysis in liver than glucose because fructose bypasses pfk-1 (phosphofructokinase 1 )which is a key step in glycolysis. it rapidly undergoes regardless of the cells energy

Point: 1.5

Question N29 Fatty acids are amphipathic molecules

Answer:

1

Point: 0.25

Question N30 Saturated fatty acids contain one or more double bond

Answer:

0

Point: 0.25

Question N31 Fatty acids with more that one doeble bonds are called:

Answer:

Polyunsaturated

Point: 0.4

Question N32 How many carbons do eicosanoids contain?

Answer:

20

Point: 0.4

Question N33 Which alcohol backbone do glycolipids contain?

Answer:

Sphingosine

Point: 0.4

Question N34 Cholesteryl esters contain cholesterol and:

Answer:

Fatty acid

Point: 0.4

Question N35 Fatty acid thiokinase provides the activation of fatty acids before beta-oxidation

Answer:

1

Point: 0.25

Question N36 Acetone is the first one out of the ketone bodies to be synthesized

Answer:

0

Point: 0.25

Question N37 Which hormone activates the hormone-sensitive lipase?

Answer:

Epinephrin

Point: 0

Question N38 Which enzyme catalyzes the activation of fatty acids?

Answer:

Acyl coA synthetase

Point: 0.4

Question N39 Which of the following is a coenzyme for Acyl coA dehydrogenase?

Answer:

FAD

Point: 0.4

Question N40 Which of the ketone bodies is first synthesized from HMG-coA?

Answer:

Acetoacetate

Point: 0.4

Question N41 What are the main differences between HDl and LDL

Answer:

HDL (high density lipoprotein)

1. good cholestrol

2. more protein, less fat

3. synthesized in the liver

4. HDL takes cholestrol from peripheral tissues to the liver where they excrete as bile or bile acid

LDL(low level lipoprotein)

1. bad cholestrol

2. more fat , less protein

3. it is derived from VLDL

4. it takes cholestrol from liver to the peripheral tissues

Point: 1.5

Question N42 Acetyl coA carboxilase is allosterically activated by citrate

Answer:

1

Point: 0.25

Question N43 Formation of malonyl coA from acetyl coA is a carboxylation reaction

Answer:

1

Point: 0.25

Question N44 Which of the following activates acetyl coA carboxylase?

Answer:

Citrate

Point: 0.4

Question N45 Where does fatty acid elongation take place?

Answer:

Mitochondria

Point: 0

Question N46 How many CO2s does one acetyl-coA give rise to?

Answer:

Two

Point: 0.4

Question N47 Which enzyme catalyzes the reaction that uses acetyl-coA and produces malonyl-coA?

Answer:

Acetyl-coA~nbsp; carboxilase

Point: 0.4

Question N48 Write down the fates of the products of the beta-oxidation, Explain your answer

Answer:

after the beta oxidation fatty acids binds with albumin and goes into the blood where as glycerol goes to the liver and do glycolysis or gluconeogenesis as it cant go to adipose tissue as it lacks glycokinase

Point: 1.5

Question N49 NANA ( N-acetylneuraminic acid )~nbsp; is present is Gangliosides

Answer:

1

Point: 0.25

Question N50 Glucagon promotes triacylglycerol synthesis

Answer:

0

Point: 0.25

Question N51 High amount of glucagon:

Answer:

Promotes the lipogenesis

Point: 0

Question N52 Which enzyme catalyzes breakdown of dietary lipids?

Answer:

Pancreatic lipase

Point: 0.4

Question N53 A 55-year-old male with a history of coronary artery disease has elevated plasma triglycerides and low HDL levels. Lipoprotein analysis shows increased VLDL. Question: This dyslipidemia primarily results from impaired metabolism of which lipid? ~nbsp;

Answer:

Cholesterol esters

Point: 0

Question N54 A neonate presents with eruptive xanthomas and pancreatitis. Blood tests show extremely high triglyceride levels, and genetic testing indicates lipoprotein lipase deficiency. Question: This enzyme deficiency impairs the hydrolysis of triglycerides in which lipoproteins?

Answer:

LDL~nbsp;

Point: 0

Question N55 How is glycerol utilized after being released form TAGs?

Answer:

after glycerol is released after the breakdown of the TAG it goes to the liver and then it will convert into DHAP and then it will undergo gluconeogenesis or glycolysis

Point: 1.5

Question N56 Apo B-100 is a specific apoprotein for chylomicrons

Answer:

0

Point: 0.25

Question N57 LDL is involved in reverse cholesterol transport

Answer:

0

Point: 0.25

Question N58 Chylomicrones are produces in:

Answer:

Enterocytes

Point: 0.4

Question N59 HDL particles transport cholesterol:

Answer:

From periphery to the liver.

Point: 0.4

Question N60 Lecithin:cholesterol acyltransferase is activated by:

Answer:

ApoA1

Point: 0.4

Question N61 Functions of adipose tissue are: ~nbsp;

Answer:

Energy storage only

Point: 0

Question N62 Acetyl coA can not leave mitochondria, which compound goes to cytoplasm from mitochondria to give rise to acetyl coA?

Answer:

Citrate

Point: 0.4

Question N63 High energy state in the cells is a signal for:

Answer:

Fatty acid synthesis

Point: 0.4

Question N64 Describe the action of statin drugs

Answer:

statin drugs inhibits the HMG coA reductase. it increases cholestrol in our body

Point: 1.5

Question N65 High sterol levels promote HMG-coA reductase activity

Answer:

0

Point: 0.25

Question N66 Which lipoprotein primarily transports triglycerides from liver to peripheral tissues?

Answer:

LDL

Point: 0

Question N67 A deficiency in the LDL receptor results in which condition?

Answer:

Familial hypercholesterolemia~nbsp;

Point: 0.4

Question N68 Which of the following is a steroid hormone?

Answer:

Cortisol

Point: 0.4

Question N69 Which of the following lipoproteins is the biggest in size?

Answer:

Chylomicrons

Point: 0.4

Question N70 Which of the following lipoproteins is responsible for transporting dietary lipids?

Answer:

Chylomicrons

Point: 0.4

Question N71 lipoprotein has : ( apo B48, apo-E , apo C II )~nbsp; guess the lipoprotein

Answer:

Chylomicrons

Point: 0.4

Question N72 Describe the biochemical mechanism of Familial hypercholesterolemia?~nbsp;

Answer:

familial hypercholesterolemia is a deficiency of LDL, LDL is high ,it is a genetic disorder . since LDL is a bad cholestrol , it causes high cholestrol , ldl is from the VLDL it will take cholestrol from the liver to the peripheral tissues

Point: 1.2

Question N73 DHEA is female sex hormone

Answer:

0

Point: 0.25

Question N74 A 5-year-old boy presents with ambiguous genitalia, increased pigmentation of the skin, and signs of early puberty. Laboratory tests reveal elevated levels of 17-hydroxyprogesterone and androgens, but low cortisol levels. Imaging shows an enlarged adrenal gland. Genetic testing indicates a deficiency of an enzyme involved in cortisol synthesis.

Answer:

Aromatase; decreased estrogen synthesis and virilization~nbsp;

Point: 0

Question N75 Which enzyme catalyzes the rate-limiting step in steroid hormone biosynthesis?

Answer:

17~alpha;-Hydroxylase

Point: 0

Question N76 Which enzyme is responsible for the conversion of testosterone to estradiol?

Answer:

Aromatase~nbsp;

Point: 0.4

Question N77 The enzyme involved in the final step of aldosterone synthesis is

Answer:

17~alpha;-Hydroxylase

Point: 0

Question N78 Write down at least 3 androgenic hormones

Answer:

testosteron

dihydrotestosterone(DHT)

Adostredion

Point: 1.4

Question N79 Which one has ether bond? ~nbsp;

Answer:

Cardiolipin~nbsp;~nbsp;

Point: 0

Question N80 Which one is very important for nervous tissue? ~nbsp;

Answer:

Cardiolipin

Point: 0.4

Question N1 Glycolysis can only proceed in aerobic conditions

Answer:

0

Point: 0.25

Question N2 Reaction catalyazed by phosphofructokinase is reversible

Answer:

0

Point: 0.25

Question N3 How many ATP molecules are used up during glycolysis?

Answer:

Two

Point: 0.4

Question N4 Which enzyme catalyzes the reaction that provides acetyl-coA?

Answer:

Pyruvate dehydrogenase

Point: 0.4

Question N5 Which of the following enzymes works as a sensor for high blood glucose concentration, in pancreas beta cells?

Answer:

Glucokinase

Point: 0.4

Question N6 What is the net production of NADH during anaerobic glycolysis?

Answer:

zero

Point: 0.4

Question N7 Write down the three irreversible steps of glycolysis

Answer:

Three irreversible steps of glycolysis:

Phosphorylation of glucose-1-phosphate to glucose -6-phosphate by the enzyme hexokinase.

Phosphorylation of the fructose-6-phosphate to fructose-1,6-bisphosphate by the enzyme fructosephosphokinaze-1enzyme.

Phosphorylation of the fructosenolpyruvate to pyruvate by the enzyme phospho pyruvate kinase.

Point: 1.5

Question N8 Glycogen phosphorylase is activated by insulin

Answer:

0

Point: 0.25

Question N9 Glycogen synthesis is active during fed state

Answer:

1

Point: 0.25

Question N10 Which of the following tissues have thier own glycogen storage?

Answer:

Muscle

Point: 0.4

Question N11 Which nucleotide does glucose get attached to for glycogen synthesis?

Answer:

UDP

Point: 0.4

Question N12 Which of the following hormones stimulates glycogen synthesis?

Answer:

Insulin

Point: 0.4

Question N13 Which of the following is a coenzyme of glycogen phosphorylase?

Answer:

Pyridoxal phosphate

Point: 0.4

Question N14 Discuss the double action of debranching enzyme in glycogen breakdown, Explain your answer

Answer:

Double action of debranching enzyme in glycogen breakdown:

Transferase activity: three glucose units are cleaved from the molecule

activity: The alpha (1,4) glycosidic linkages are broken by the breakdown or cleavage of the rest of the units of the glucose.

Point: 1.5

Question N15 Gluconeogenesis is a simple reverse of the glycolysis

Answer:

0

Point: 0.25

Question N16 Fructose 1,6-bisphosphatase bypasses the glycolytic reaction catalyzed by phosphofructokinase

Answer:

1

Point: 0.25

Question N17 Which of the following enzymes catalyzes the reaction in gluconeogenesis when GTP is used as a phosphate donor?

Answer:

PEP carboxykinase

Point: 0.4

Question N18 How does fructose 2,6-bisphosphate affect the gluconeogenesis?

Answer:

It inhibits it

Point: 0.4

Question N19 Which of the following compounds is not glucogenic?

Answer:

Even chain fatty acids

Point: 0.4

Question N20 What is the major site of gluconeogenesis?

Answer:

Liver

Point: 0.4

Question N21 Which enzyme in PPP uses TPP as a coenzyme? Explain your answer

Answer:

in PPP, glucose - 6 - phosphate is the intiat substrate for the mechanism and it takes place in the cytoplasm, and has sub intermediate residues of glycotic reactions like

fructose-6-phosphate, and the phosphoglyceraldehyde-3-phosphate. So, enzymes like fructophosphokinase can be used, or other enzyme.

The glucose phosphorylated - 6 - dehydrogenese is the main the enzyme in PPP.

Point: 0

Question N22 NADH is one of the products of the pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 Pentose phosphate pathway can be divided into two phases: oxidative and nonoxidative

Answer:

1

Point: 0.25

Question N24 Which one is the product of the pentose phosphate pathway?

Answer:

Ribose-5-phosphate

Point: 0.4

Question N25 Which part of the cell does the pentose phosphate pathway take place?

Answer:

Cytosol

Point: 0.4

Question N26 Which biochemical reductant is produced by pentose phosphate pathway?

Answer:

NADPH

Point: 0.4

Question N27 Which of the following hormones stimulates the ativity of glucose 6-phosphate dehydrogenase

Answer:

Insulin

Point: 0.4

Question N28 Which glycolytic intermediates can be produced During PPP?

Answer:

During PPP, glycolytic intermediates like fructose-6-phosphate and phosphoglyceraldehyde-3-phosphate.

Also, NADPH IS FORMED,

Point: 1.5

Question N29 Fatty acids, containing double bonds are considered unsaturated

Answer:

1

Point: 0.25

Question N30 Tryglycerides contain three fatty acid residues connected to alcohol sphingosine

Answer:

0

Point: 0.25

Question N31 Fatty acids that do not contain any double bonds are:

Answer:

Saturated

Point: 0.4

Question N32 Fatty acids are stored in adipose tissue, as:

Answer:

Tryacylglycerols

Point: 0.4

Question N33 How does level of unsaturation affect the melting point of even-numbered fatty acids?

Answer:

The more unsaturated the fatty acids are, lower their melting point is

Point: 0.4

Question N34 The terminal methyl carbon of fatty acid is called

Answer:

Omega

Point: 0.4

Question N35 Beta-oxidation of fatty acids takes place in mitochondria

Answer:

1

Point: 0.25

Question N36 Carnitine shuttle is used to transport long-chain fatty acids from cytosol to mitochondria

Answer:

1

Point: 0.25

Question N37 Which of the following cells can not use fatty acids as alternative fuel?

Answer:

None of them can

Point: 0.4

Question N38 Which part of a cell does beta-oxidation of fatty acids take place?

Answer:

Mitochondria

Point: 0.4

Question N39 For fatty acid beta-oxidation acylcarnitine is transported through the mitochondrial membrane in exchange of:

Answer:

Carnitine

Point: 0.4

Question N40 How does malonyl coA affect the carnitine palmytoiltransferase-1 activity?

Answer:

It inhibits it

Point: 0.4

Question N41 Which coenzymes are being reduced during the oxidative phases of FFA beta-oxidation?

Answer:

duing BETA-oxidation, fatty acids are broken down, so the acyl transferse

NAD+ IS REDUCED TO NADH.

FADH IS REDUCED TO FADH2( FADH+ + H-)

Point: 1.5

Question N42 In order to transport acetyl-coA from mitochondria to cytosool it needs to condensate with oxaloacetate to produce citrate which will be transported to cytosol

Answer:

0

Point: 0

Question N43 Vitamin B7 is a coenzyme for acetyl-coA carboxylase

Answer:

1

Point: 0.25

Question N44 What is the coenzyme for acetyl coA carboxylase?

Answer:

Biotin

Point: 0.4

Question N45 Which of the following activates acetyl coA carboxylase?

Answer:

Citrate

Point: 0.4

Question N46 Where does fatty acid elongation take place?

Answer:

Both of them

Point: 0.4

Question N47 How many CO2s does one acetyl-coA give rise to?

Answer:

One

Point: 0

Question N48 Write down the fates of the products of the beta-oxidation, Explain your answer

Answer:

The fates of the products of the beta oxidation is:

Acetyl Co-A is transported and is needed for the TCA cycle or the kreb cycle for the ATP synthesis or the energy requirement.

NADH and FADPH is needed for the elctron transport chain, as energy is needed for the metobolic activities in the cell.

Point: 1.5

Question N49 Diacylglycerol acyltransferase is a rate-limiting enzyme in triacylglycerol synthesis

Answer:

0

Point: 0

Question N50 Insulin activates triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N51 Which enzyme transforms glycerol into an activated form?

Answer:

Glycerol kinase

Point: 0.4

Question N52 High amount of glucagon:

Answer:

Inhibits the lipogenesis

Point: 0.4

Question N53 Which enzyme catalyzes breakdown of dietary lipids?

Answer:

Pancreatic lipase

Point: 0.4

Question N54 A 55-year-old male with a history of coronary artery disease has elevated plasma triglycerides and low HDL levels. Lipoprotein analysis shows increased VLDL. Question: This dyslipidemia primarily results from impaired metabolism of which lipid? ~nbsp;

Answer:

(TAG)~nbsp; triglycerides

Point: 0.4

Question N55 What is the fate of glycerol after it is released from TAG due to lipolysis?

Answer:

The fate of glycerol is that:

The glycerol is taken from the triacylglycerol and is transported to the liver where there is low adipose tissue due to the lack of glycerol kinase.

The glycerol is phosphorylated by the glycerol kinase to form gylcerol - 3 - phosphate.

The glycerol-3-phosphate is converted to form the dihydroxyacetone phosphate by the glycerol-3-phosphate dehydrogenes enzyme, and this can be either needed for gluconeogenesis where it is used for energy requirements or it can be used for glycolysis where it csn be sued as well.

Point: 1.5

Question N56 Lipoprotein lipase breaks down the triacylglycerols in chylomicrons

Answer:

1

Point: 0.25

Question N57 Apo B-100 is a specific apolipoprotein for HDL

Answer:

1

Point: 0

Question N58 Chylomicrones are produces in:

Answer:

Blood vessels

Point: 0

Question N59 HDL particles transport cholesterol:

Answer:

From periphery to the liver.

Point: 0.4

Question N60 Lecithin:cholesterol acyltransferase is activated by:

Answer:

AcylCoA:acylcholesterol transferase (ACAT)

Point: 0

Question N61 Functions of adipose tissue are: ~nbsp;

Answer:

All of the above is correct

Point: 0.4

Question N62 Acetyl coA can not leave mitochondria, which compound goes to cytoplasm from mitochondria to give rise to acetyl coA?

Answer:

Citrate

Point: 0.4

Question N63 High energy state in the cells is a signal for:

Answer:

Both of them

Point: 0

Question N64 Explain the difference between ApoB/E and Scavenger~nbsp; receptors for cellular uptake of lipoproteins.

Answer:

Mitochondrial: uptake of lioproteins

Cytoplasmic:

Point: 0

Question N65 HDL is the smallest lipoprotein

Answer:

1

Point: 0.25

Question N66 Which lipoprotein primarily transports triglycerides from liver to peripheral tissues?

Answer:

LDL

Point: 0

Question N67 A deficiency in the LDL receptor results in which condition?

Answer:

Familial hypercholesterolemia~nbsp;

Point: 0.4

Question N68 Which of the following is a steroid hormone?

Answer:

Glucagon

Point: 0

Question N69 Which of the following lipoproteins is the biggest in size?

Answer:

Chylomicrons

Point: 0.4

Question N70 Which of the following lipoproteins is responsible for transporting dietary lipids?

Answer:

Chylomicrons

Point: 0.4

Question N71 lipoprotein has : ( apo B48, apo-E , apo C II )~nbsp; guess the lipoprotein

Answer:

HDL

Point: 0

Question N72 Insulin and apoprotein C II - play a big role to activate which peripherial enzyme?

Answer:

To actiavte the VLDL , the insulin and the apoprotien C II(apoprotein CII-100) plays a major role.

Point: 0

Question N73 HMG-coA reductase is a major regulatory enzyme in cholesterol metabolism

Answer:

1

Point: 0.25

Question N74 Which steroid hormone is primarily responsible for the regulation of sodium and potassium balance?

Answer:

Cortisol~nbsp;

Point: 0

Question N75 Which enzyme is deficient in Congenital Adrenal Hyperplasia (CAH) resulting in impaired cortisol synthesis

Answer:

11~beta;-Hydroxylase~nbsp;

Point: 0

Question N76 A 5-year-old boy presents with ambiguous genitalia, increased pigmentation of the skin, and signs of early puberty. Laboratory tests reveal elevated levels of 17-hydroxyprogesterone and androgens, but low cortisol levels. Imaging shows an enlarged adrenal gland. Genetic testing indicates a deficiency of an enzyme involved in cortisol synthesis.

Answer:

21-Hydroxylase; accumulation of 17-hydroxyprogesterone and increased androgen production

Point: 0.4

Question N77 Which enzyme catalyzes the rate-limiting step in steroid hormone biosynthesis?

Answer:

21-Hydroxylase~nbsp;

Point: 0

Question N78 Write down at least 3 androgenic hormones

Answer:

three androgenic hormones are:

estrogen, progestrone, cortisol, epinephrin

Point: 0

Question N79 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

glycerol

Point: 0

Question N80 Which one has ether bond? ~nbsp;

Answer:

all of them

Point: 0

Question N1 Brain cells completely depend of anaerobic glucose usage

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by hexokinase is the only irreversible reaction in glycolysis

Answer:

0

Point: 0.25

Question N3 Which of the following enzymes catalyzes the reaction in glycolysis, where NAD is reduced to NADH?

Answer:

Glyceraldehyde-3-phosphate dehydrogenase

Point: 0.4

Question N4 Which of following enzymes catalyzes the last step when ATP is produced during the glycolysis?

Answer:

Pyruvate kinase

Point: 0.4

Question N5 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N6 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Phosphofructokinase

Point: 0.4

Question N7 Write down the step of glycolysis when NADH is produced

Answer:

Point: Not Checked

Question N8 Glycogenin is a dimer protein that inititates glycogen breakdown

Answer:

1

Point: 0

Question N9 Glycogen branching enzyme trasfers 7 glucose residues to make 1->6 glycosydic linkages

Answer:

1

Point: 0.25

Question N10 Which enzyme catalyzes the creation of glycosidic α (1->4) bonds?

Answer:

Glycogen synthase

Point: 0.4

Question N11 Phosphorylation:

Answer:

Activates glycogen synthase

Point: 0

Question N12 Which bonds are broken by glycogen phosphorylase?

Answer:

alpha 1->4 glycosydic bonds

Point: 0.4

Question N13 Which of the following cells have glucose-6-phosphatase activity?

Answer:

Liver

Point: 0.4

Question N14 Explain substrate level phosphorylation of TCA cycle.

Answer:

Point: Not Checked

Question N15 in gluconeogenesis pyruvate is transformed into oxaloacetate by pyruvate carboxilase

Answer:

1

Point: 0.25

Question N16 Pyruvate carboxylase is allosterically inhibited by acetyl coA

Answer:

1

Point: 0

Question N17 Which of the following an be used as a substrate for gluconeogenesis?

Answer:

Glycogen

Point: 0

Question N18 Which enzyme bypasses the glycolytic hexokinase step in gluconeogenesis?

Answer:

Glucose-6 phosphatase

Point: 0.4

Question N19 What is the product of pyruvate carboxilase reaction?

Answer:

Oxaloacetate

Point: 0.4

Question N20 Which enzyme catalyzes the transformation of pyruvate into oxaloacetate?

Answer:

Pyruvate carboxilase

Point: 0.4

Question N21 Why gluconeogenesis is not a reversal of glycolysis? Explain your answer

Answer:

Point: Not Checked

Question N22 Two molecules of ATP is synthesized during pentose phosphate pathway

Answer:

0

Point: 0.25

Question N23 In pentose phosphate pathway 5-phosphogluconolactone is aproduct of a reaction catalysed by glucose 6-phosphate dehydrogenase

Answer:

1

Point: 0.25

Question N24 Which of the following products of PPP is needed for normal glutathion antioxidant activity?

Answer:

NADPH

Point: 0.4

Question N25 Which of the following is a final product of oxidative phase of PPP?

Answer:

Ribulose 5-phosphate

Point: 0.4

Question N26 Which enzyme is a regulated site in PPP?

Answer:

Glucose 6-phosphate dehydrogenase

Point: 0.4

Question N27 Which phase is irreversible in PPP?

Answer:

Oxidative

Point: 0.4

Question N28 Write down the step of the oxidative phase in pentose phosphate pathway that results in production of pentose sugar phosphate

Answer:

Point: Not Checked

Question N29 Increasing the chain length of a fatty acid decreases the melting temperature of that fatty acid

Answer:

0

Point: 0.25

Question N30 Double bonds of most of the unsaturated fatty acids are in cis configuration

Answer:

1

Point: 0.25

Question N31 Which of the following lipids is stored as fat in adipose tissue?

Answer:

Triacylglycerols

Point: 0.4

Question N32 Monounsaturated fatty acids:

Answer:

Contain one double bond

Point: 0.4

Question N33 In most of the unsaturated fatty acids, double bond has:

Answer:

Cis configuration

Point: 0.4

Question N34 What if the name of the following structure: Glycerol 2 fatty acids Phosphate

Answer:

Phosphatidic acid

Point: 0.4

Question N35 Release of FFA-s from adipose tissue is catalysed by lipoprotein lipase

Answer:

0

Point: 0.25

Question N36 Long chain fatty acids are transported into the mitochondria by carnitine shuttle

Answer:

1

Point: 0.25

Question N37 Which hormone activates the hormone-sensitive lipase?

Answer:

Both of them

Point: 0

Question N38 Which enzyme catalyzes the first oxidation reaction in beta-oxidation process?

Answer:

Pyruvate dehydrogenase

Point: 0

Question N39 Which hormone activates the hormone-sensitive lipase?

Answer:

None of them

Point: 0

Question N40 Which enzyme catalyzes the activation of fatty acids?

Answer:

Acyl coA acyltransferase

Point: 0

Question N41 Explain the function and mechanism of carnitine shuttle

Answer:

Point: Not Checked

Question N42 acetyl coA carboxilase recuires vitamin B5 as coenzyme

Answer:

0

Point: 0.25

Question N43 Acetyl coA carboxilase is allosterically activated by citrate

Answer:

1

Point: 0.25

Question N44 Which enzyme catalyzes the reaction that uses acetyl-coA and produces malonyl-coA?

Answer:

Acetyl-coA~nbsp; carboxilase

Point: 0.4

Question N45 Which enzyme catalyzes isomerization of citrate to isocitrate?

Answer:

Citrate synthase

Point: 0

Question N46 How many NADPH molecules are required in 1 cycle of the Fatty acid synthase?

Answer:

2

Point: 0

Question N47 Citrate molecule, that leaves the mitochondria and goes to cytoplasm, gives rise to which molecule after cleavage, besides acetyl coA?

Answer:

Oxaloacetate

Point: 0.4

Question N48 Besides acetyl-coAs, what is the product of the oxidation of fatty acids with odd number of carbons? And how is it used? Explain your answer

Answer:

Point: Not Checked

Question N49 Ceramide contains sphingosine

Answer:

1

Point: 0.25

Question N50 NANA ( N-acetylneuraminic acid )~nbsp; is present is Gangliosides

Answer:

1

Point: 0.25

Question N51 A neonate presents with eruptive xanthomas and pancreatitis. Blood tests show extremely high triglyceride levels, and genetic testing indicates lipoprotein lipase deficiency. Question: This enzyme deficiency impairs the hydrolysis of triglycerides in which lipoproteins?

Answer:

VLDL only~nbsp;

Point: 0

Question N52 A 40-year-old patient develops progressive neurodegeneration. Examination reveals accumulation of sphingolipids in neural tissue. Genetic testing shows deficiency of ceramidase. Question: Deficiency of ceramidase causes accumulation of which lipid?

Answer:

Ceramide~nbsp;

Point: 0.4

Question N53 During Tay-Sachs Disease whoch one is accumulated?

Answer:

Ganglioside GM2~nbsp;

Point: 0.4

Question N54 Which pathway can the glycerol get involved in after being released from TAGs?

Answer:

Gluconeogenesis

Point: 0.4

Question N55 Which hormones activate lipolysis?

Answer:

]

Point: Not Checked

Question N56 LPL lipoprotein lipase is synthesized in adipocytes.

Answer:

1

Point: 0.25

Question N57 Apo B-100 is a specific apoprotein for chylomicrons

Answer:

0

Point: 0.25

Question N58 Which of the following is used as a reducing agent in reduction reactions during fatty acid synthesis?

Answer:

NADPH

Point: 0.4

Question N59 Which pathway can provide glycerol for acylglycerol synthesis?

Answer:

Glycolysis

Point: 0.4

Question N60 Which enzyme transforms fatty acids into an activated form? ~nbsp;

Answer:

Fatty acyl coA synthetase

Point: 0.4

Question N61 High amount of insulin:

Answer:

Inhibits the lipogenesis

Point: 0

Question N62 Phosphatidic acid contains: ~nbsp;

Answer:

Three acyl chains

Point: 0

Question N63 Glucose is the indirect source of glycerol for TAG synthesis in:

Answer:

In liver and adipose tissue

Point: 0

Question N64 Where and how is VLDL transformed into LDL?

Answer:

Point: Not Checked

Question N65 LDL is produced in liver

Answer:

1

Point: 0

Question N66 Which apoprotein is not characteristic for chylomicrons?

Answer:

Apo E

Point: 0

Question N67 How many carbon units does lanosterol molecule consist of?

Answer:

27

Point: 0

Question N68 How many molecules of NADPH are used during reduction of HMG-coA to mevalonate?

Answer:

Two

Point: 0.4

Question N69 Which of the following hormones stimulate the gene expession of HMG-coA reductase?

Answer:

All of the above

Point: 0

Question N70 How many carbons do bile acids contain?

Answer:

27

Point: 0

Question N71 An individual with hypothyroidism exhibits elevated serum cholesterol levels. What is the most likely mechanism?

Answer:

All of the above~nbsp;

Point: 0

Question N72 Explain the role of LDL receptors in maintaining cholesterol homeostasis

Answer:

Point:

Question N73 Cholesterol is the precursore of all steroid hormones

Answer:

1

Point: 0.25

Question N74 Which enzyme is responsible for the conversion of testosterone to estradiol?

Answer:

21-Hydroxylase~nbsp;

Point: 0

Question N75 The enzyme involved in the final step of aldosterone synthesis is

Answer:

Aldosterone synthase (CYP11B2)

Point: 0.4

Question N76 The enzyme aromatase catalyzes

Answer:

The conversion of androgens to estrogens

Point: 0.4

Question N77 The synthesis of mineralocorticoids occurs mainly in which zone of the adrenal cortex

Answer:

~nbsp;Zona fasciculata

Point: 0

Question N78 Write down at least 3 androgenic hormones

Answer:

Point:

Question N79 Which one is very important for nervous tissue? ~nbsp;

Answer:

sphingomyelin

Point: 0

Question N80 How is the cardiolipin made ? ~ndash; Phosphaditic acid + ----? ~nbsp;

Answer:

glycerol

Point: 0

Question N1 Glucokinase has a higher affinity to glucose than hexokinase

Answer:

0

Point: 0.25

Question N2 Reaction catalyzed by Phosphoglucose isomerase is the rate-limiting step in glycolysis

Answer:

0

Point: 0.25

Question N3 Which of the following enzymes catalyze the reaction which results in trapping the glucose inside of the cell?

Answer:

Hexokinase

Point: 0.4

Question N4 ATP is an allosteric inhibitor of which glycolytic enzyme?

Answer:

Phosphofructokinase

Point: 0.4

Question N5 Which of the following cell use only glycolysis?

Answer:

Red blood cells

Point: 0.4

Question N6 Which of the following enzymes catalyzes phosphorylation of the glucose in the cell?

Answer:

Hexokinase

Point: 0.4

Question N7 Write down the three irreversible steps of glycolysis

Answer:

1. Glucose to Glucose - 6- phosphate by the enzyme Hexokinase

2. Fructose - 6 - phosphate to Fructose - 1,6 - bisphosphate by Phosphofructokinase

3. Phosphoenolpyruvate to Pyruvate by Pyruvate kinase

Point: 1.5

Question N8 Glycogen phosphorylase is activated by insulin

Answer:

0

Point: 0.25

Question N9 Glycogen synthesis is active during fed state

Answer:

1

Point: 0.25

Question N10 Which enzyme transforms glucose 6-phosphate into glucose 1-phosphate?

Answer:

Phosphoglucomutase

Point: 0.4

Question N11 To which nucleotide is glucose attached to in order to go into glycogenesis?

Answer:

UDP

Point: 0.4

Question N12 cAMP pathway provides:

Answer:

Inactivation of glycogen phosphorylase

Point: 0

Question N13 Which of the following statements is correct?

Answer:

Glycogen synthase is activated by phosphorylation and Glycogen phosphorylase is inactivated by it

Point: 0

Question N14 Explain substrate level phosphorylation of TCA cycle.

Answer:

Succinyl coA is converted into Succinate by th enzyme Succinyl coA synthase

Point: 1.5

Question N15 Gluconeogenesis is a simple reverse of the glycolysis

Answer:

0

Point: 0.25

Question N16 Fructose 1,6-bisphosphatase bypasses the glycolytic reaction catalyzed by phosphofructokinase

Answer:

1

Point: 0.25

Question N17 Which of the following can be used for gluconeogenesis?

Answer:

All of them

Point: 0.4

Question N18 Which of the following enzymes catalyzes the reaction in gluconeogenesis when GTP is used as a phosphate donor?

Answer:

PEP carboxykinase

Point: 0.4

Question N19 How does fructose 2,6-bisphosphate affect the gluconeogenesis?

Answer:

It activates it

Point: 0

Question N20 Which of the following compounds is not glucogenic?

Answer:

Odd chain fatty acids

Point: 0

Question N21 Why gluconeogenesis is not a reversal of glycolysis? Explain your answer

Answer:

beacuse glycolysis contains 3 irreversible reaction

1. Glucose to Glucose - 6- phosphate by the enzyme hexokinase

2. Fructose - 6 - phosphate to fructose - 1,6 - bisphosphate by the enzyme Phosphofructokinase

3. Phosphoenolpyruvate to Pyruvate by Pyruvate kinase

Point: 1.5

Question N22 NAD is a coenzyme in redox reactions in Pentose phosphate pathway

Answer:

1

Point: 0

Question N23 Ribulose-5-phosphate is a product of oxidative part of pentose phosphate pathway

Answer:

1

Point: 0.25

Question N24 Which of the following enzymes catalyzes the reversible step in pentose phosphate pathway?

Answer:

Transketolase

Point: 0.4

Question N25 Which enzyme catalyzes the reaction where a ketopentose is produced in pentose phosphate pathway?

Answer:

Transketolase

Point: 0

Question N26 Which of the following is the cofactor of glutathion reductase?

Answer:

NADPH

Point: 0.4

Question N27 Which enzyme catalyzes the commited step of pentose phosphate pathway?

Answer:

Transketolase

Point: 0

Question N28 Which glycolytic intermediates can be produced During PPP?

Answer:

glucose - 6- phosphate and fructose - 6 - phosphate

Point: 1.2

Question N29 Fatty acids are amphipathic molecules

Answer:

1

Point: 0.25

Question N30 Saturated fatty acids contain one or more double bond

Answer:

0

Point: 0.25

Question N31 Fatty acids with more that one doeble bonds are called:

Answer:

Polyunsaturated

Point: 0.4

Question N32 How many carbons do eicosanoids contain?

Answer:

20

Point: 0.4

Question N33 Which alcohol backbone do glycolipids contain?

Answer:

Glycerol

Point: 0

Question N34 Cholesteryl esters contain cholesterol and:

Answer:

Fatty acid

Point: 0.4

Question N35 Fatty acid thiokinase provides the activation of fatty acids before beta-oxidation

Answer:

0

Point: 0

Question N36 Acetone is the first one out of the ketone bodies to be synthesized

Answer:

0

Point: 0.25

Question N37 For fatty acid beta-oxidation acylcarnitine is transported through the mitochondrial membrane in exchange of:

Answer:

Carnitine

Point: 0.4

Question N38 How does malonyl coA affect the carnitine palmytoiltransferase-1 activity?

Answer:

It inhibits it

Point: 0.4

Question N39 Which hormone activates the hormone-sensitive lipase?

Answer:

Both of them

Point: 0

Question N40 Which enzyme catalyzes the first oxidation reaction in beta-oxidation process?

Answer:

Acyl-coA dehydrogenase

Point: 0.4

Question N41 Which coenzymes are being reduced during the oxidative phases of FFA beta-oxidation?

Answer:

NAD+ is reduced to NADH and FAD is reduced to FADH2

Point: 1.5

Question N42 Vitamin B7 is a coenzyme for acetyl-coA carboxylase

Answer:

1

Point: 0.25

Question N43 acetyl coA carboxilase recuires vitamin B5 as coenzyme

Answer:

1

Point: 0

Question N44 How is acetyl coA transported from mitochondria to cytosol for fatty acid synthesis?

Answer:

As citrate

Point: 0.4

Question N45 What is the coenzyme for acetyl coA carboxylase?

Answer:

Biotin

Point: 0.4

Question N46 Which of the following activates acetyl coA carboxylase?

Answer:

All of them

Point: 0

Question N47 Where does fatty acid elongation take place?

Answer:

Mitochondria

Point: 0

Question N48 Besides acetyl-coAs, what is the product of the oxidation of fatty acids with odd number of carbons? And how is it used? Explain your answer

Answer:

propionyl coA is the other product which is later converted into Succinyl coA

Point: 1.5

Question N49 Insulin activates triacylglycerol synthesis

Answer:

1

Point: 0.25

Question N50 Ceramide contains sphingosine

Answer:

1

Point: 0.25

Question N51 What is the product of acyl coA combining with glycerol 3-phosphate?

Answer:

Phosphatidate

Point: 0.4

Question N52 Which enzyme transforms glycerol into an activated form?

Answer:

Glycerol kinase

Point: 0.4

Question N53 High amount of glucagon:

Answer:

Promotes the lipogenesis

Point: 0

Question N54 Which enzyme catalyzes breakdown of dietary lipids?

Answer:

Lipoprotein lipase

Point: 0

Question N55 What is the fate of glycerol after it is released from TAG due to lipolysis?

Answer:

Glycerol is then transported to the liver which is then later used up for glycolysis , gluconeogenesis.

Point: 1.5

Question N56 Apo B-100 is a specific apolipoprotein for HDL

Answer:

0

Point: 0.25

Question N57 LPL lipoprotein lipase is synthesized in adipocytes.

Answer:

0

Point: 0

Question N58 Which of the following is used as a reducing agent in reduction reactions during fatty acid synthesis?

Answer:

NADPH

Point: 0.4

Question N59 Which pathway can provide glycerol for acylglycerol synthesis?

Answer:

Glycolysis

Point: 0.4

Question N60 Which enzyme transforms fatty acids into an activated form? ~nbsp;

Answer:

Fatty acyl coA synthetase

Point: 0.4

Question N61 High amount of insulin:

Answer:

Inhibits the lipogenesis

Point: 0

Question N62 Phosphatidic acid contains: ~nbsp;

Answer:

Two acyl chaind

Point: 0.4

Question N63 Glucose is the indirect source of glycerol for TAG synthesis in:

Answer:

In liver and adipose tissue

Point: 0

Question N64 Describe the process of absorption and transport of dietary lipids

Answer:

dietary lipids are absorbed and reaassembled by the intestinal mucosal cells into chylomicrons which then is realeased into the bloostream and then lipids are transported to different orrgans

Point: 1.5

Question N65 High sterol levels promote HMG-coA reductase activity

Answer:

1

Point: 0

Question N66 Which apoprotein is not characteristic for chylomicrons?

Answer:

APO B-100

Point: 0.4

Question N67 How many carbon units does lanosterol molecule consist of?

Answer:

30

Point: 0.4

Question N68 How many molecules of NADPH are used during reduction of HMG-coA to mevalonate?

Answer:

Two

Point: 0.4

Question N69 Which of the following hormones stimulate the gene expession of HMG-coA reductase?

Answer:

Insulin

Point: 0.4

Question N70 How many carbons do bile acids contain?

Answer:

14

Point: 0

Question N71 An individual with hypothyroidism exhibits elevated serum cholesterol levels. What is the most likely mechanism?

Answer:

All of the above~nbsp;

Point: 0

Question N72 Which hormone/s activate SREBP and which hormone/s inhibits it ?

Answer:

insulin activates while glucagon inhibits it

Point: 1.5

Question N73 DHEA is female sex hormone

Answer:

1

Point: 0

Question N74 The enzyme involved in the final step of aldosterone synthesis is

Answer:

Aldosterone synthase (CYP11B2)

Point: 0.4

Question N75 The enzyme aromatase catalyzes

Answer:

The conversion of androgens to estrogens

Point: 0.4

Question N76 The synthesis of mineralocorticoids occurs mainly in which zone of the adrenal cortex

Answer:

Zona glomerulosa

Point: 0.4

Question N77 Which hormone stimulates the production of cortisol in the adrenal cortex?

Answer:

~nbsp;Adrenocorticotropic hormone (ACTH)

Point: 0.4

Question N78 Write down at least 3 androgenic hormones

Answer:

testesterone

dihydrotestesterone

androsteredione

Point: 1.5

Question N79 Which one has ether bond? ~nbsp;

Answer:

plasmalogen

Point: 0.4

Question N80 Which one is very important for nervous tissue? ~nbsp;

Answer:

Cardiolipin

Point: 0.4