

?What is the function of bile salts in lipid digestion *1

- .a- Acidification of intestinal content
- .b- Emulsification of lipids and formation of micelles
- .c- Breaking the ester bonds of triacylglycerol
- .d- Protection of the intestinal epithelium against digestive enzymes

The main end products of *2

:triacylglycerol digestion in the intestinal lumen are

- .a- fatty acids and glycerol
- .b- fatty acids and 2-monoacylglycerols
- .c- fatty acids and 3-monoacylglycerols
- .d- fatty acids and 1,3-diacylglycerols

What is the main enzyme *3

?responsible for lipid digestion

- .a- Lipase
- .b- Cholesterol esterase
- .c- Phospholipase
- .d- Lipoprotein lipase

Which of the following*4

?should be present for lipid digestion and absorption

- .a- Bile salts
- .b- Bile pigments
- .c- Acidic pH
- .c- All the above

Lipids are digested in *5

- .a- stomach
- .b- intestine
- .c- stomach and intestine
- .d- mouth and intestine

Enzymes of lipid *6

: digestion are excreted mainly from glands of the

- .a- stomach
- .b- mouth
- .c- intestine
- .d- pancreas

ATP is required for which*7

?step of de novo fatty acid synthesis

- .a- Mitochondrial synthesis of acetyl CoA
- .b- Formation of malonyl CoA
- .c- Formation of citrate
- .d- Formation of the ketoacyl residue

What is the main route of *8

?lipids absorbed from the intestine

- .a- As chylomicrons, to the portal circulation
- .b- As chylomicrons, through the lymph, to the systemic circulation
- .c- As free fatty acids and glycerol, to the portal circulation
- .d- As free fatty acids and glycerol, to the systemic circulation

Cholesterol esterase *9

: produces

- .a- cholesterol ester
- .b- cholesterol
- .c- cholesterol conjugate
- .d- cholesterol hydrolysate

: Pepsinogen is activated by*10

- .a-alkaline pH
- . .b- pepsin
- .c- both a and b
- .d- neither a nor b

Which of the *11

?following enzymes may be produced by auto-activation

- .a- Pepsin
- .b- Trypsin
- .c- Both a and b
- .d- Neither a nor b

What type of lipoproteins that dietary fats after absorption appear in the -12
?circulation

- a. Chylomicrons
- b. HDL
- C. LDL
- d. VLDL

?How does glucose transport from intestinal lumen to blood .13

- a- by GLUT1 glucose transporter
- b. by GLUT2 glucose transporter
- c. by GLUT3 glucose transporter

d. by GLUTA glucose transporter

?What do the neutral amino acids need for absorption-14

- a. NAD
- b) NADP
- C. Vitamin B2
- d. Vitamin B6 and PO4

: GLUT 1 and GLUT 3 *15

- .a- are present in most tissues, especially brain and erythrocytes
- .b- have a low Km (high affinity to glucose)
- .c- guarantee basal uptake of glucose
- .d-all the above

GLUT 2 in liver cells and *16

: pancreatic B-cells

- .a- has a low Km (high affinity to glucose)
- .b- is suitable for glucose uptake during fasting
- .c- acts as a glucose sensor, along with glucokinase, in B-cells of pancreas
- .d- all the above

: Sucrase produces *17

- .a- glucose
- .b- glucose and fructose
- .c- glucose and galactose
- .d-galactose and fructose

: Maltase produces *18

- .a- glucose
- .b- glucose and fructose
- .c- glucose and galactose
- .d- galactose and fructose

Which of the following is *19
?true about de novo fatty acid synthetic pathway

- .a- It is bidirectional
- .b- It is monodirectional due to involvement of NADPH
- c- It is irreversible because the condensation reaction releases CO₂
- .d- It can proceed in reverse direction only if NADP⁺ is provided

Which of the following is *20
?true about xenobiotics

- ."a- The term is derived from the Greek word xenos, which means "stranger"
- b- They include drugs, insecticides, industrial chemicals, etc. that amount to more than 200,000 compounds
- .c- Both a and b
- .d- Neither a nor b

What is the toxic effect of *21
?xenobiotics on the body

- .a- Over-inhibition of intended enzymes or other enzymes
- .b- DNA changes leading to cancer
- .c- Oxidant effect leading to various pathological changes
- .d- All the above

: Diet proteins are digested in *22

- .a- mouth and stomach
- .b- stomach and intestine
- .c- mouth and intestine
- .d- intestine

: Rennin is *23

- .a- gastric enzyme
- .b- important for coagulation of milk casein, especially in infants
- .c- both a and b
- .d- neither a nor b

: Pepsinogen is activated by*24

- .a- alkaline pH
- .b- pepsin
- .c-both a and b
- .d- neither a nor b

Which of the following is *25
?true about cytochrome P450 enzymes

- a- They metabolize at least 50% of drugs and O various pollutants and carcinogens as well as endogenous compounds
- b- At least 6 isoforms exist in liver endoplasmic reticulum with wide and overlapping substrate specificity
- .c- In the adrenal mitochondria, they are important for steroid synthesis
- .d- All the above

Which of the following *26
?is true about phase 1 reactions of xenobiotic metabolism

- a-The major reaction is hydroxylation catalyzed by cytochrome P450 monooxygenases
- b- Other reactions catalyzed by cytochrome O P450 enzymes include deamination, dehalogenation, de-sulfuration, epoxidation, peroxidation, and reduction
- c- Hydrolysis and some other O non-cytochrome P450-catlayzed reactions occur in phase
- .d- All the above

Phase 2 reactions include *27
conjugation to

- .a- glucuronte or sulfate
- .b- glutathione or certain aminoacids
- .c- acetyl or methyl groups
- .d- any of the above

Which of the following* 28

?may not participate in a conjugation reaction with xenobiotics

- .a- asparagine
- .b-glucuronic acid
- .c- sulfate
- .d- glycine

is increased in blood in case of myocardial infarction in liver disease (29

- a) AST
- b) ALT
- c) ASL

The predominant amino group acceptor in human intermediary Metabolism (30
:is

- a. a-ketoglutarate
- b. Arginosccinate
- c. a-ketoisocaproate
- d. Cystathionine

Biosynthesis is catalyzed by an enzyme which Converts ATP to ADP ----- (31
: .and Pi

- a. Glutamine
- b. Asparagine
- c. Glycine
- d. Tyrosine

:The organ which is extremely sensitive to ammonia toxicity is (32

- .a. brain
- .b. liver
- .c. heart
- .d. muscle

:Low blood urea occurs in (33

- a) liver disease
- b) renal disease
- .c) high protein diet

:Flapping tremors are seen in (34

- a) diabetic coma
- b) traumatic coma
- c) hepatic encephalopathy (NH₃ intoxication)

:The standard drug in treatment of NH₃ intoxication is (35

- a) lactulose
- b) sucrose
- c) glucose
- d) lactose

:helpful in prevention of hyperammonemia (36

- a) aromatic amino acids
- b) branched chain amino acids
- c) tyramine

.is the key enzyme of urea cycle (37

- a) CPS-1
- b) CPS-11
- c) ASL

?Which of the following proteins are given to hyperammonemic Patients (38

- a. milk proteins
- b. plant proteins
- c. a and b
- d. meat

The major site of urea synthesis is (39

- a. brain
- b. kidneys
- c. liver
- d. muscles

:The enzyme carbamoyl phosphate synthetase requires (40

- a) Mg
- b) Na
- c) Ca
- d) K

:The nitrogen atoms of urea are provided by (41

- .a. NH₃
- .b. NH₃ and ornithine
- .C. NH₃ and aspartate
- .d. NH₃ and glutamate

:Enzymes of urea cycle are found in (42

- a) cytosol
- b) mitochondria
- c) nucleus
- d) both mitochondria and cytosol

wers

Pharmacia
78) a
88) a
08) a
18) a
58) b

- B(1
- b(2
- A(3
- a(4
- C(5
- d(6
- B(7
- B(8
- B(9
- B (10
- c (11
- A (12
- B (13
- d (14
- D (15
- c (16
- B (17
- a (18
- C (19
- C (20
- d (21
- B (22
- c (23
- B (24
- D (25
- D (26
- D (27
- a (28
- A (29
- A (30
- A (31
- A (32
- A (33
- c (34
- a (35
- b (36



- a. brain a (37)
- b. kidneys C (38)
- c. liver c (39)
- d. muscle a (40)
- c (41)
- d (42)

Answers

- a) Na
 - b) K
 - c) Ca
 - d) K
- The nitrogen atoms of urea are provided by (41)
- a. NH₃
 - b. NH₃ and ornithine
 - c. NH₃ and aspartate
 - d. NH₃ and glutamate
- Enzymes of urea cycle are found in (42)
- a) cytosol
 - b) mitochondria
 - c) nucleus
 - d) both mitochondria and cytosol