

- Deficiency of glucose-6-phosphatase leads to GSD type I a
- It is that the use of aspirin and other salicylates after a viral infection trigger Reye's syndrome
- The most known mutation of HFE is C282Y
- Wilson disease is caused by mutation in ATP73 gene
- In glycogen storage disease type II the glycogen is abnormal

- **56. Bile acid and bile salts, choose the wrong statement ?**
- A- Primary bile acids are steroids consisting of 24 C atoms carrying one carbonyl group and several hydroxyl groups
- B- In bile acid the arrangement of A and B rings is in cis form
- C- The cholic acid conjugates with glycine to form lithocholic acid
- D- Bile salts are more amphipathic than the primary bile acids
- E- Taurochenodeoxycholic acid is a bile salt

- **51. A – amylase, choose the wrong statement ?**
- A . is an endoglucosidase
- B . secreted by mouth and pancreas
- C . is not functional in high acidic medium like stomach
- **D . hydrolyze all  $\alpha$ -1,4 glycosidic bondd**
- E . has no activity toward the  $\alpha$ -1,6 bond

• **45. Choose the wrong statement of the following?**

- A . if triacylglycerols directly entered the blood they would coalesce impeding blood flow
- B . only essential fatty acids are required in our diet
- C . the major enzyme that digests dietary triacylglycerols is pancreatic lipase
- D . bicarbonate raises the PH of the contents of the intestinal lumen
- E . pancreatic lipase hydrolyzes triacylglycerols producing free fatty acids and free glycerol

**19. Which of the following is found in milk?**

a. beta-1,4 - glucose - glucose

B. Alpha -1,4 glucose, galactose

C. beta-1,6 glucose, glucose

D. beta 1,4, glucose, galactose

C. Alpha 1,4 glucose, glucose



78) Hemochromatosis, choose the wrong statement?

Select one:

- A) a. Resulted from mutations to gene HFE
- B) b. Our body has no natural way to rid itself of the excess iron
- C) c. Transferrin saturation values greater than 45 percent are considered too high
- D) Patients who inherit one defective gene are normal and have normal

69) Pancreatic secretion in carbohydrates digestion, choose the wrong statement?

Select one:

- A) Pancreatic alpha-amylase hydrolyze the starches and glycogen
- B) Secrets approximately 1.5 L,/day that enter the duodenum
- C) Alpha-amylase is an endo-glucosidase
- D) Bicarbonate neutralizes the acidic pH of stomach contents
- E) Pancreatic alpha-amylase hydrolyze all alpha-1, 4 bonds

5) Choose the wrong statement?

Select one:

- A) Esterases produced by pancreas function to remove fatty acids from compounds such as cholesterol esters
- B) Bile salts are more effective detergents than bile acids because of their enhanced amphipathic nature
- C) Fats digestion enzymes are produced in mouth, stomach and pancreas
- D) Bicarbonate secretion is stimulated by the hormone secretin
- E) Deoxycholic acid has a hydroxyl group at position 7 and 12



**18. After digestion of a piece of cake that contains flour, milk and sucrose, the fastest sugar that enters the blood is?**

- a. Glucose
- b. Fructose
- c. Galactose
- d. Mannose
- e. Isomaltose

26. Dietary fibers choose the wrong answer?

- a. They consists principally of oligosaccharides and polysaccharide derivatives and lignan..
- b. They are resistant to digestion by human digestive enzymes
- c. Water insoluble fiber includes cellulose. Lignin and hemicellulose
- d. Pectins slow the rate of absorption of simple sugars
- e. Pectins may lower blood cholesterol levels by binding bile acids

64) Choose the incorrect statement?

Select one

- A) Deficiency of glucose-6-phosphatase leads to GSD type I a
- B) It is that the use of aspirin and other salicylates after a viral infection trigger Reye's syndrome
- C) The most known mutation of HFE is C282Y
- D) Wilson disease is caused by mutation in ATP73 gene
- E) In glycogen storage disease type II the glycogen is abnormal

22) In cytochrome P450 reactions for drugs detoxification, choose the incorrect statements?

Select one:

- A) CYP450 reaction converts hydrophobic substrate to hydrophilic substrate
- B) When  $O_2$  accepts one electron it become superoxide a reactive oxygen species
- C)  $O_2$  splits so one oxygen atom binds with  $2H$  to form water and the other oxygen binds to the hydrophobic substrate
- D) NADPH donate one electron to ferric thus is converted to ferrous
- E) Fe (III) can't bind  $O_2$

1123  
D

31) Glucoamylase, choose the incorrect statement?

Select one:

- A) Is an exoglucosidase
- B) Cleaves all alpha—1,4 bonds in disaccharides
- C) Its two catalytic sites have similar activities
- D) Is heavily glycosylated with oligosaccharides to protect it from digestive proteases
- E) Has two catalytic sites



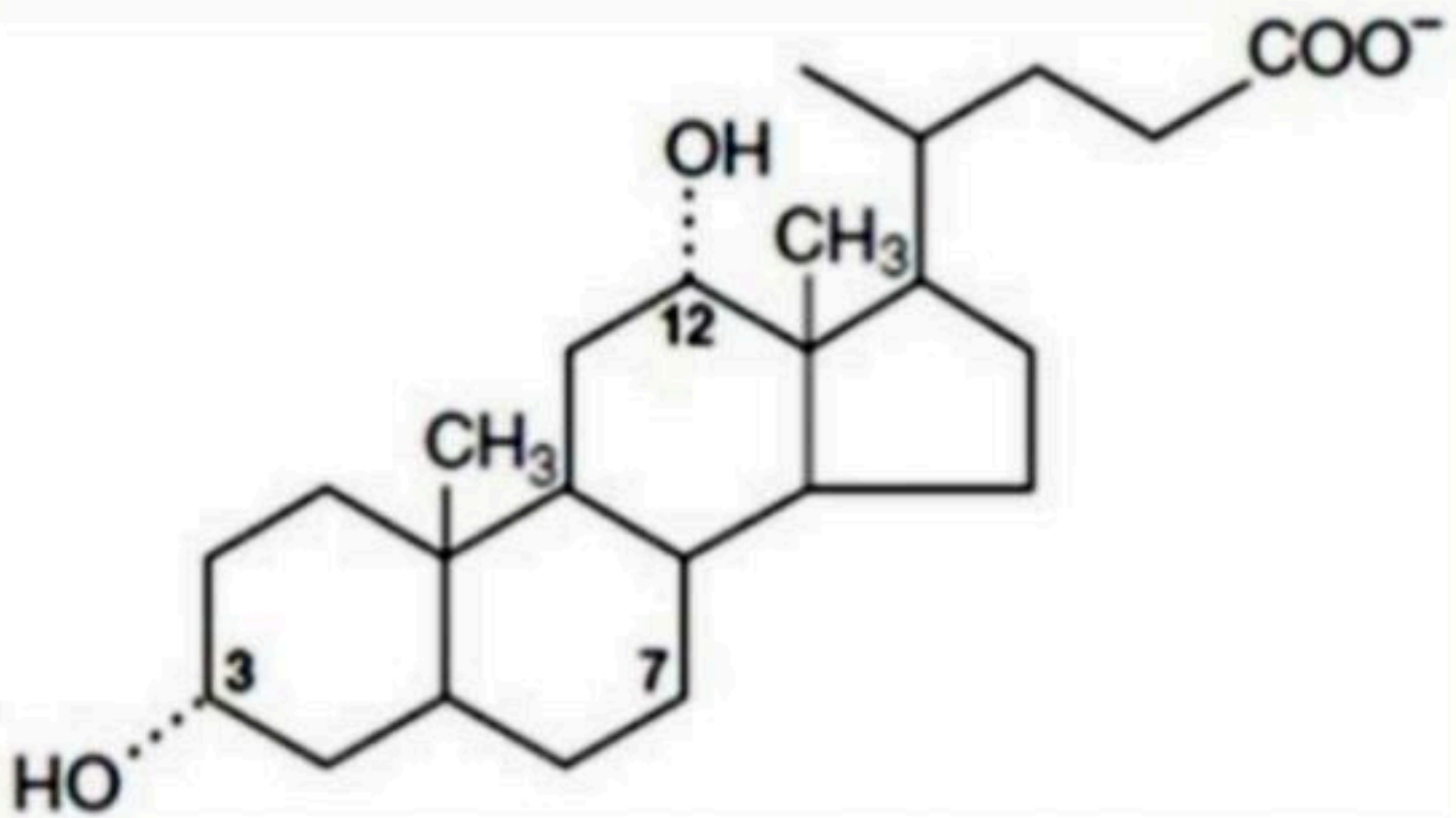
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- A) Tyrosine becomes essential amino acid if phenylalanine intake is inadequate
  - B) The trypsinogen is activated by enteropeptidase to trypsin
  - C) Secretin stimulates the secretion of bicarbonate which raises the PH.
  - D) Chymotrypsinogen is converted to active form chymotrypsin when

**5. Reye syndrome, choose the incorrect statement?**

- a. Is extremely rare genetic disease that can affect the brain and liver
- b. Occurs most commonly in kids between 4 and 14 years old
- c. There is no cure for Reye syndrome
- d. involve mitochondrial dysfunction that inhibits oxidative phosphorylation

**43. Which of the following statements is not correct?**

- a. Glucoamylase is an exoglucosidase
- b. Glucose is an essential sugar and must be present in our food...
- c. Trehalase has one catalytic site
- d. B-glycosidase has two catalytic sites



Choose the WRONG statement regarding the structure shown.

Select one:

- a. It has 24 carbon atoms.
- b. It is a secondary bile acid.
- c. Its created from primary bile acids cholic acid.
- d. Its bile salts are glycocholic and taurocholic.
- e. Mostly will be excreted in the feces.

(E)

5. All the following are correct about (Von Gierks disease) EXCEPT:

- a. normal in structure but present in abnormally
- b. Deficiency of Alpha 1,4 phosphatase
- c. deficiency of liver Glucose 6- phosphatase

Answer: B

6. phospholipase A2?

- a. remove fatty acids from compounds
- b. digests dietary triacylglycerols producing 2 free fatty acids and 2-monoacylglycerol
- c. Digests phospholipids to free fatty acid and a Lysphospholipid

Answer: C



Which amino acids are deleted from chymotrypsinogen to form chymotrypsin?

Select one:

- a. Serine15 - Arginine16 and Threonine147- Asparagine148.
- b. Arginine15 - Isolleucine, Threonine147 Asparagine148.
- C. Tyrosine14 - Arginine15 and Serine147 Asparagine148.
- d. Serine 14- Arginine15 and Threonine147 Asparagine148.
- e. Asparagine15- Serine16 and Tyrosine144 - Arginine 149.

(D)

Hemochromatosis, choose the WRONG statement?

Select one:

- a. ✓ People with hemochromatosis absorb up to 30 percent of iron.
- b. ✓ Transferrin saturation values greater than 45 percent are considered too high.
- c. Caused by defect in the gene ATP7B. *C282Y*
- d. Over time, hemochromatosis patients absorb and retain between 5 to 20 times more iron than the body needs.
- e. Ferritin is an intracellular protein that stores and releases iron.

All of the followings are true regarding protein digestion EXCEPT?

Select one:

- a. Both trypsin and chymotrypsin split protein into small polypeptides.
- b. Carboxypolypeptidase cleaves individual amino acids from the carboxyl end of polypeptides.
- c. Pepsin initiates the process of protein digestion.
- d. Most proteins are digested all the way to amino acid by pancreatic juice.
- e. Most of protein remains as dipeptides and tripeptides that are easily transported through the microvillar membrane.

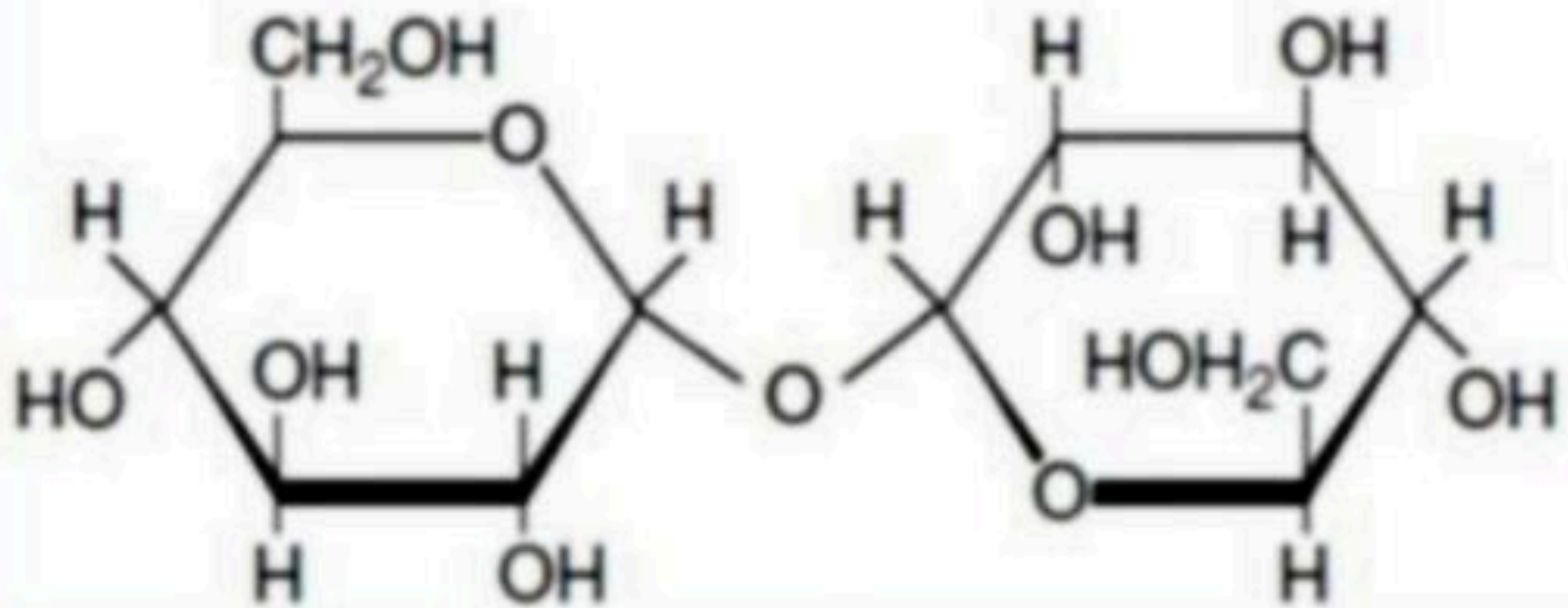
(D)

2. The secondary bile salt that is excreted by feces

**Lithocolic acid**

3. One of the following is true about enteropeptidase

**It cleaves the protein inside the chain not outside**



Which of the following enzymes digest the disaccharide shown?

Select one:

a. Sucrase-maltase.



7. Fat digestion, choose the wrong statement?

- a. Lingual lipase hydrolyze short- and medium-chain fatty acids in triacylglycerols
- b. The pancreas produces esterases that remove fatty acids from compounds like cholesterol esters
- c. Chylomicrons are synthesized in the liver and transport lipids in blood to adipose tissue, heart, and skeletal muscles...
- d. Pancreatic lipase is the major enzyme that digests dietary triacylglycerols
- e. The essential fatty acids alpha-linolenic and alpha linolenic acid are supplied by dietary plant oils

*should be in the int*

1. Which enzyme is secreted actively

**Amylase**