Wednesday, 28th January 2009
Time: 8^{00}-10^{00}

University of Buea

Faculty of Health Sciences ***Programme in Medicine***

MED 303

(Gastrointestinal Physiology)

EXAMS (2008-2009)

Identify the letter of the choice that best completes the statement or answers the question.

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(1) .Mixing movements
a. promote digestion by mixing food with digestive juices.
b. facilitate absorption by exposing luminal contents to absorptive surfaces.
c. take place only in the stomach.
d. promotes digestion by mixing food with digestive juices and facilitates absorption by exposing luminal contents to absorptive surfaces.
e. All of these answers.

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(2) .Digestive motility
a. is accomplished by smooth muscle contractions.
b. is accomplished by smooth and voluntary muscle contractions.
c. may be propulsive in nature.
d. Both (a) and (b) above.
e. Both (a) and (c) above.

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(3).Which of the following statements concerning the intrinsic plexuses is incorrect?
a. The myenteric plexus is located in the submucosa.
b. The plexuses innervate smooth muscle cells and exocrine and endocrine gland cells.
c. The plexuses are influenced by extrinsic nerves.
d. The plexuses coordinate local digestive tract activity.
e. There are two major networks of nerve fibers forming the plexuses of the gut.

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(4).Which tissue layer provide for primary digestive motility?
a. mucosa.
b. submucosa.
c. muscularis mucosae.
d. muscularis externa.
e. mesentery.

(5).The intrinsic nerve plexuses
a. produce spontaneous depolarization of the smooth muscle cells in the wall of the digestive tract.
b. are located in the mucosa.
c. coordinate local activity in the digestive tract.
d. Both (a) and (c) above.
e. All of these answers.

(6).Which of the following statements concerning parasympathetic innervation of the digestive tract is incorrect?

a. in general, parasympathetic stimulation is excitatory to the digestive system.
b. parasympathetic innervation to the digestive tract comes primarily through the vagus nerve.
c. parasympathetic innervation is part of the extrinsic nerve supply to the digestive tract.
d. parasympathetic stimulation of the salivary glands produces a saliva rich in mucus.
e. parasympathetic stimulation increases salivary, gastric, pancreatic, and biliary secretion.

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(7).The enteric nervous system

a. includes the myenteric plexes.
b. includes the submucosal plexes.
c. includes vagal nerve efferents.
d. Both (a) and (b) above.
e. Both (a) and (c) above.
e. metabolic water.

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(8).Which statement regarding control of digestive processes is incorrect?

a. short reflexes influence motility and secretion in localized areas.
b. all elements of the short reflexes are contained within the digestive organ's wall.
c. hormones play a role.
d. osmorectors monitor the acidity of the luminal contents.
e. there are stretch receptors in the walls of digestive organs.

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(9).Salivary secretion is

a. entirely under neural control (i.e., there is no hormonal control of salivary secretion).
b. a passive secretion.
c. stimulated by the parasympathetic nervous system and inhibited by the sympathetic nervous system.
d. Two of these answers.
e. All of these answers.

(10).Which of the following is entirely under nervous control and has no hormonal regulatory component?

a. salivary secretion.
b. gastric secretion.
c. pancreatic secretion.
d. liver secretion.
e. All of these answers have a hormonal regulatory component.

(11).The pharyngoesophageal sphincter is normally closed to prevent

a. air from entering the esophagus during breathing.
b. gastric contents from refluxing back into the esophagus.
c. vomiting.
d. esophageal secretions from leaking into the stomach.
e. food from entering the pharynx.

(12).If peristalsis in the esophagus is insufficient to carry an especially large bolus of food through the esophagus to the stomach. What happens to dislodge this trapped food?

a. a secondary peristaltic wave is initiated by the swallowing center.
b. a secondary peristaltic wave is initiated by distention of the esophagus, mediated by the intrinsic nerve plexuses.
c. the food remains in the esophagus until the swallowing mechanism is voluntarily initiated once again.

d. increased esophageal mucus secretion occurs to lubricate the stuck bolus so that it can slide to the stomach.
e. food never becomes stuck in the esophagus because it is very distensible.

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(13).The gastroesophageal sphincter is normally closed to prevent
a. air from entering the esophagus during.
b. gastric contents from refluxing into the esophagus.
c. vomiting.
d. esophageal leaking into the stomach.
e. food from entering the pharynx.

(14).Gastric mixing
a. occurs primarily in the body of the stomach.
b. occurs as a result of the stomach's contents being tumbled back and forth in the antrum because of vigorous peristaltic contractions.
c. mixes the food with gastric secretions to convert it to a finely divided liquid form known as chyme.
d. Both (b) and (c) above.
e. All of these answers.

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(15).Which of the following factors is the most potent stimulus for inhibition of gastric motility?
a. fat in the duodenum.
b. acid in the duodenum.
c. acid in the stomach.
d. distention of the stomach.
e. hypertonicity of the duodenal contents.

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(16).Which of the following factors will not influence the rate at which a meal will empty from the stomach?
a. fat in the duodenum.
b. acid in the duodenum.
c. caffeine in the duodenum.
d. hypertonicity of the duodenal contents.
e. distention of the duodenum.

(17).Which statement regarding gastric motility and emptying is incorrect?
a. increased fluidity allows more rapid emptying.
b. presence of acid and fat in the stomach initiates the enterogastric reflex.
c. increased gastric volume stimulates motility.
d. vagal activity stimulates motility.
e. distention of the stomach initiates short reflexes.

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(18).Hormones acting in the small intestine include
a. secretin and cholecystokinin.
b. secretin and gastrin.
c. cholecystokinin and gastrin.
d. All of these answers.
e. None of these answers.

(19).Which of the following is not secreted by the stomach in response to parasympathetic (acetylcholine) stimulation?
a. pepsinogen
b. HCl
c. gastrin

d. histamine
e. Both gastrin and histamine are not secreted in response to parasympathetic stimulation.

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(20).During the cephalic phase of gastric secretion,
a. thinking about, seeing, smelling, and chewing food reflexly increases gastric secretion.
b. vagal stimulation of the gastric glands occurs.
c. gastrin is released.
d. Both (a) and (b) above.
e. All of these answers.

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(21).The chief cells of the gastric mucosa secrete
a. bicarbonate ions.
b. HCl.
c. pepsinogen.
d. sucrase.
e. trypsin.

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(22).The parietal cells of the gastric mucosa secrete
a. HCl.
b. pepsinogen.
c. intrinsic factor.
d. Both HCl and pepsinogen.
e. Both HCl and intrinsic factor.

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(23).Which of the following statements concerning HCl secretion by the stomach is correct?
a. HCl inactivates salivary amylase and the pancreatic enzymes.
b. HCl activates pepsinogen.
c. it establishes a low pH in the stomach.
d. Both (a) and (b) above.
e. All of these answers.

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(24).Which factor below does not slow down gastric activities?
a. enterogastric reflex.
b. entergastrones.
c. secretin.
d. gastrin.
e. cholecystokinin.

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(25).Stomach acid
a. is neutralized in the duodenum.
b. Is neutralized with biocarbonate.
c. Is neutralized by solutions secreted by the pancreas.
d. Both (a) and (b) above.
e. All of these answers.

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(26).Intrinsic factor is
a. secreted by the parietal cells in the stomach.
b. necessary for absorption of vitamin B12.
c. abundant in pernicious anemia.
d. Two of these answers.
e. All of these answers.

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(27).Pernicious anemia can occur when

a. the stomach has been removed.
b. the terminal ileum has been removed.
c. there is a deficiency of intrinsic factor.
d. Both the stomach has been removed and there is a deficiency of intrinsic factor.
e. All of these answers.

(28).As food leaves the stomach, gastric secretion is reduced. Which of the following factors does not contribute to this reduction?
a. fat in the duodenum
b. low gastric pH
c. distention of the duodenum
d. high concentration of acid in the stomach or duodenum
e. pepsinogen in the duodenum

(29).Peptic ulcers
a. are usually caused by excessive neural stimulation.
b. are usually caused by bacterial infection.
c. compromise the mucosal barrier and stomach wall.
d. Both (a) and (b) above
e. Both (b) and (c) above.

(30).Which of the following accurately describes chymotrypsinogen?
a. chymotrypsinogen is activated by enterokinase.
b. once activated, chymotrypsinogen is involved in protein digestion.
c. chymotrypsinogen is secreted by the endocrine pancreas.
d. All of these answers.
e. None of these answers.

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(31).The intestinal hormone secretin is released by endocrine cells in the duodenal mucosa in response to

a. distention of the stomach.
b. carbohydrate in the duodenum.
c. acid in the duodenum.
d. gastrin secreted by the pyloric gland area of the stomach.
e. None of these answers.

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(32).Which statement regarding control of pancreatic secretion is correct?
a. gastrin stimulates release of neutralization solution.
b. CCK stimulates release of enzymes.
c. secretin stimulates release of bicarbonate.
d. Both (a) and (b) above.
e. Both (b) and (c) above.

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(33).Bile salts
a. aid fat digestion through their detergent action.
b. aid fat absorption through micelle formation.
c. are lost in the feces once secreted into the bile.
d. Both (a) and (b) above.
e. All of these answers.

(34).Absorption of which of the following is linked to active sodium absorption at the basolateral border of the epithelial cell
a. water.

b. glucose.
c. galactose.
d. amino acids.
e. All of these answers.

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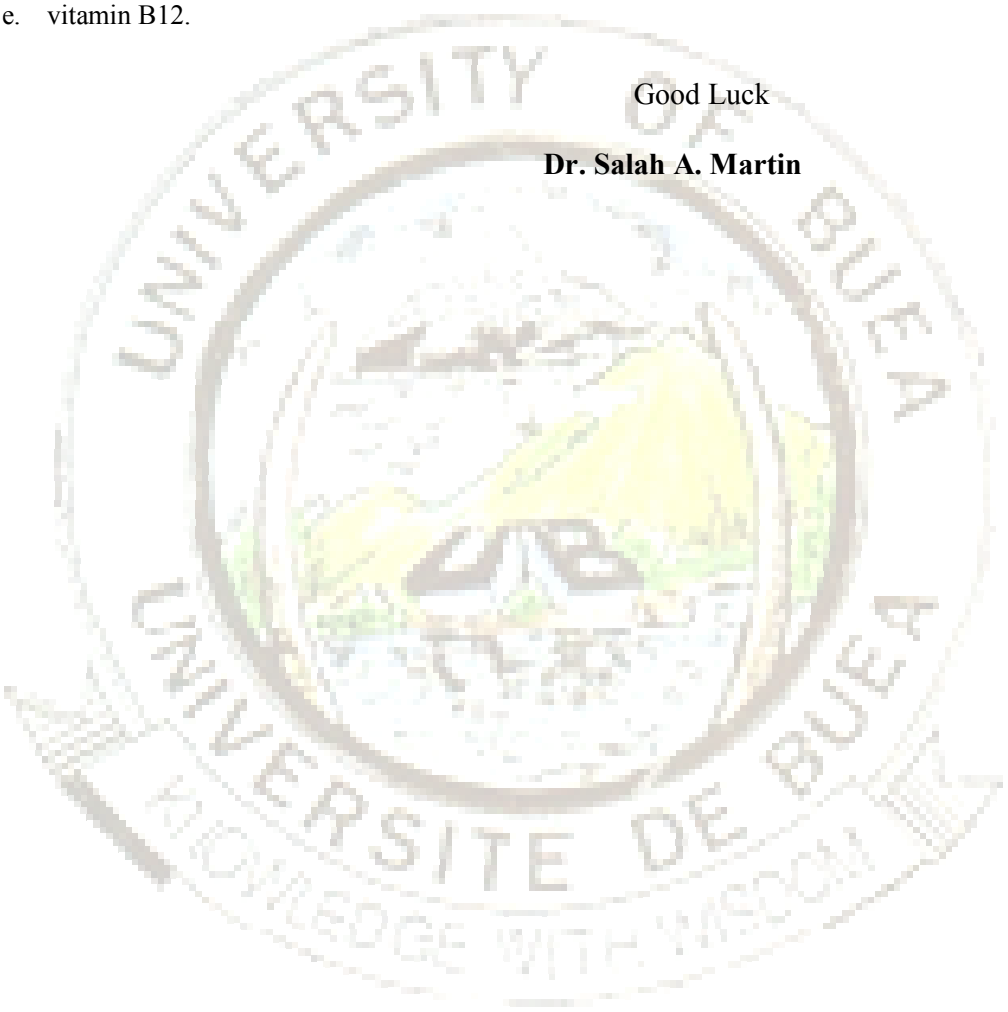
(35).Which of the following does not directly enter the blood upon being absorbed from the digestive tract?

a. glucose.
b. monoglycerides and free fatty acids.
c. amino acids.
d. alcohol.
e. vitamin B12.



Good Luck

Dr. Salah A. Martin