BIOLOGY

NEET & AIIMS

DIGESTION AND ABSORPTION

Example

1. Where are teeth and tongue present in the alimentary canal?

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2. Define the term thecodont dentition.

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3. Name the structure by which prevents the tongue from falling backward.

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4. Which sphincter regulates the opening of stomach into duodenum?

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5. Name the various parts of the large intestine of human.

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6. Name the outermost layer of the alimentary canal.

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7. How many pairs of salivary glands are present in man?

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8. Which is the largest gland in human body?

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9. Name a compound gland which secretes hormone insulin.

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10. What is the function of buccal cavity

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11. What is the role of intrinsic factor secreted by the cells of gastric glands?

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12. Name the agent which converts inactive pepsinogen into active pepsin.

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13. Name the secretions which are released into small intestine.

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14. What is the optimum pH required for pancreatic amylase?

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15. What is the function of enzyme nuclease in the pancreatic juice?

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16. Does any digestive activity occur in large intestine?

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17. What is the target/action site of cholecystokinin (CCK)?

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18. What is facilitated transport?

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19. What are chylomicrons?

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20. Write down the role of large intestine in terms of absorption.

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Try Yourself

1. Write down dental formula of a child.

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2. Name the tooth meant for tearing .

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3. The stomach of humans is considered : (i) Simple or (ii) Compound

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4. During swallowing _____ prevents food from entering wind pipe and _____ prevents it from entering nasal cavity.

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5. Which sphincter will prevent regurgitation of food into oesophagus?

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6. The uppermost part of the stomach is _____ .

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7. Which vestigial organ from caecum in humans?

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8. Which will have a longer intestine? (i) Cow or (ii) Tiger.

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9. What function villi perform in intestine?

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10. Which layer is responsible for the formation of crypts in between the bases of villi in the intestine?

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11. Name the salivary gland in human, which produces maximum saliva?

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12. Name the smallest salivary gland in human.

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13. Name the structure and functional unit of liver.

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14. What is Glisson's capsule?

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15. Which part of pancreas secretes enzyme?

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16. Pancreas is what type of gland?

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17. What is the other name of enzyme salivary amylase?

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18. What is the optimum pH for the action of enzyme salivary amylase?

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19. Name the condition when there is no secretion of HCl in stomach.

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20. Deficiency of parietal cell secretion lead to which type of anaemia?

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21. Which enzyme will be absent in gastic secretion of a 22 years old man-pepsin, pepsinogen, mucus rennin?

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22. Will pepsin function at a pH 8?

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23. Choose odd one out w.r.t. source of secretions. Trypsinogen, Chymotrypsinogen, Nucleases, Enterokinase.

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24. Name the bile pigments.

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25. Another name of pancreatic amylase.

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26. What are peptones?

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27. Which enzyme converts sucrose into glucose and fructose?

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28. Which enzyme will act on milk sugar?

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29. Where are faecal matter (faeces) temporarily stored ? If they continue to remain there it will lead to ?

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30. Name the substances which are absorbed in the large intestine.

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31. Name of source of hormone secretin.

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32. Secretion of which hormone is stimulated by strong acid in stomach and intestine?

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33. Which amongst glucose, amino acids fructose and chloride ions are generally not absorbed by simple diffusion?

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34. Name the transport mechanisms by which absorption of digested food take place.

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35. Why fatty acids and glycerol cannot be absorbed into the blood?

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36. In which part of the alimentary canal maximum absorption takes place?

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37. Name the site for the absorption if some one is drinking beer?

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38. Why certain cartain cardiovascular drugs designed for subingual administration?

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Exercise

1. When each tooth embedded in a socket of jaw bone, then this type of attachment is called

A. Thecodont

B. Thecodont

C. Lophodont

D. Secodont

Answer: A

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2. Oral cavity leads into a short pharynx which serves as a common passage for

A. Food only

B. Air only

C. Food and air

D. Digestive juices

Answer: C

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3. Arrangement of teeth in each half of the upper and lower jaw in the order I, C, PM, M is represented by a dental formula which in humans is

A. $\frac{2132}{2132}$

B. $\frac{2123}{2123}$

C. $\frac{2312}{2312}$

D. $\frac{3212}{3212}$

Answer: B

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4. Which of the following prevents the entry of food into the wind pipe?

A. Glottis

B. Pharynx

C. Epiglottis

D. Both (1) & (2)

Answer: C

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5. Frenulum is/are

A. Adenoid present on pharyngeal wall

B. Tonsils found on lateral walls of soft palate

C. V-shaped sulcus dividing tongue into pharymgeal and oral parts

D. Fold attaching tongue to the floor of oral cavity

Answer: D

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6. Chewing is required for

A. Solbilisation of food

B. Enjoying the taste of food

C. Decreasing the surface area of food

D. Increasing the surface area of food

Answer: D

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7. Hard chewing surface of teeth, made up of _____ . helps in the mastication of food

A. Dentine

B. Cementum

C. Enamel

D. Both (1) & (2)

Answer: C

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8. Wharton's duct is associated with

A. Brunner's gland

B. Sublingual salivary gland

C. Submaxillary salivary gland

D. Parotid salivary gland

Answer: C

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9. Thecodont, diphyodont and heterodont teeth are the characteristic of

A. Reptiles

B. Aves

C. Amphibians

D. Mammals

Answer: D

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10. Adenoids are

A. Tubal tonsils

B. Palantine tonsils

C. Lingual tonsils

D. Pharyngeal tonsils

Answer: D

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11. Stomach has major portions. In which portion of stomach does the oesophagus open?

A. Fundic

B. Pyloric

C. Cardiac.

D. Fundic and Pyloric.

Answer: C

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12. Which of the following statement is incorrect w.r.t. histology of alimentary canal?

A. Serosa is the outermost layer made up of a thin mesothelium with some connective tissue

B. Muscularis layer is formed by smooth muscles usually arranged into an inner longitudinal layer and outer circular layer

C. Submucosal layer is formed of loose connective tissue

D. An oblique muscle layer may be present in stomach

Answer: B

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13. Brush border columnar epithelium is the lining of

A. Stomach

B. Oesophagus

C. Proximal convoluted tubules

D. Small intestine

Answer: D

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14. Duct of the gall bladder is called

A. Hepatic duct

B. Common bile duct

C. Cystic duct

D. Stenson's duct

Answer: C

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15. Opening of hepatopancreatic duct into the duodenum is guarded by

A. Pyloric sphincter

B. Sphincter of boyden

C. Sphincter of oddi

D. Cardiac sphincter

Answer: C

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16. Ileum is is characterised by the presence of

A. Brunner's glands and villi

B. Brunner's gland and Peyer's patches

C. Peyer's patches and vili

D. Brunner's gland and Taeniae coli

Answer: C

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17. In which layer of stomatch are the gastric glands located?

A. Serosa

B. Mucosa

C. Submucosa

D. Muscularis mucosa

Answer: B

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18. The toxic substances in the diet are detoxified in human body by

A. Liver

B. Kidney

C. Lungs

D. Stomach

Answer: A

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19. Which of the following does not produce any digestive enzyme?

A. Pancreas

B. Colon

C. Stomach

D. Duodenum

Answer: B

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20. Which of the following structure controls the peristaltic movement of alimentary canal?

A. Myenteric plexus

B. Auerbach plexus

C. Meissner's plexus

D. Both (1) & (2)

Answer: D

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21. Which of the following sphincter controls the passage of food into the stomach ?

A. Upper oesophageal sphincter

B. Gastro-oesophageal sphincter

C. Pyloric sphincter

D. Oesophageal sphincter

Answer: B

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22. Which of the following is not a component of saliva?

A. Electrolytes Na^+, K^+, Cl^- and HCO_3^- ions

B. Ptyalin / α- salivary amylase

C. Mucin, lysozyme and thiocyanate ions

D. Antibody (IgG)

Answer: D

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23. Tick mark the false statement.

A. About 60% starch is hydrolysed in buccal cavity by the enzyme salivary amylase

B. Salivary amylase acts on starch and is converted into maltose

C. Salivary amylase acts at optimum ph 6.8

D. Stomach stores the food for 4-5 hours

Answer: A

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24. Which of the following is mismatched regarding the cells of gastric glands and their functions?

A. Mucus neck cells : Secrete mucus

B. Chief cells : Secrete proenzyme (pepsinogen)

C. Parietal cells : Secrete intrinsic factor for the absorption of vitamin B_{12} ?

D. Peptic cells : Secrete HCl

Answer: D

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25. Choose the correct answer among the following :

Gastric juice contains

A. Pepsin, rennin, lipase

B. Trypsin, rennin, pepsin

C. Pepsin, rennin, amylase

D. Pepsin, lipase, trypsin

Answer: A

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26. Succus entericus is the name given to

A. A junction between ileum and large intestine

B. Intestinal juice

C. Swelling in gut

D. Appendix

Answer: B

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27. Match Column I with Column II

	Column I		Column II
$a.$	Pancreatic juice	(i)	Bilirubin and biliverdin
$b.$	Intestinal juice	(ii)	Maltase
$c.$	Bile juice	(iii)	Trypsin, Carboxypeptidase
$d.$	Succus entericus	(iv)	Enterokinase

A. a(iv), b(iii), c(ii), d(i)

B. a(iii), b(iv), c(ii), d(i)

C. a(iii), b(iv), c(i), d(ii)

D. a(ii), b(iii), c(i), d(iv)

Answer: C

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28. Which of the following reaction is not catalysed by brush border enzymes ?

A. $\text{Maltose} \xrightarrow{\text{Maltase}} \text{glucose} + \text{glucose}$

B. $\text{Lactose} \xrightarrow{\text{Lactase}} \text{glucose} + \text{galactose}$

C. $\text{Nucleotides} \xrightarrow{\text{Nucleotidase}} \text{Nucleosides}$

D. $\text{Nucleic acids} \xrightarrow{\text{Nucleases}} \text{Nucleotides}$

Answer: D

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29. The enzymes of which of the following juice acts on the end products of reactions to form simple absorbable forms?

A. Pancreatic juice

B. Succus entericus

C. Saliva

D. Bile juice

Answer: B

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30. Which of the following is not a function of large intestine?

A. Absorption of water, minerals and certain drugs

B. Secretion of mucus which helps in adhering the waste particles together and lubricating it for an easy passage

C. Faeces enters into the caecum of the large intestine through ileocaecal valve

D. Significant digestive activity occurs in large intestine

Answer: D

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31. Which of the following are absorbed by the mechanism of facilitated transport with the help of the carrier proteins

A. Glucose and amino acids

B. Fructose and alcohol

C. Fats and glucose

D. Fats and amino acids

Answer: B

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32. Protein coated fat globules are called ___(i)___, which are transported into ___(ii)__ in villi. Select the option which correctly fills up both the blanks.

A. Cholesterol, capillaries

B. Chylomicrons, lacteals

C. Chylomicrons, capillaries

D. Phospholipids, lacteals

Answer: B

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33. Which of the following hutrient(s) is/are absorbed in stomach?

A. Water

B. Simple sugar

C. Alcohol

D. All of these

Answer: D

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34. In jaundice, skin and eyes turn yellow due to the deposition of bile pigments. This disease is due to malfunctioning of which organ?

A. Liver

B. Intestine

C. Brain

D. Pancreas

Answer: A

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35. Vomiting is a reflex action and is controlled by the vomit centre.

This is present in _____

A. Cerebrum

B. Hypothalamus

C. Medulla

D. Cerebellum

Answer: C

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36. In which of the following disorder of digestive system there is abnormal frequency of bowel movement and increased liquidity of the faecal discharge?

A. Vomiting

B. Diarrhoea

C. Constipation

D. Indigestion

Answer: B

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37. Which of the following can cause indigestion?

A. Inadequate enzyme secretion

B. Food poisoning and spicy food

C. Anxiety and over eating

D. All of these

Answer: D

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38. In which of the following disorder of faeces are retained within the rectum as the bowel movements occur irregularly?

A. Constipation

B. Vomiting

C. Diarrhoea

D. Jaundice

Answer: A

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39. When breast feeding is replaced by less nutritive food low in proteins and calories, the infants below the age of one year are likely to suffer from

A. Pellagra

B. Marasmus

C. Rickets

D. Kwashiorker

Answer: B

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40. Which of the following pairs is not correctly matched ?

A. Vitamin B_{12} - Pernicious anaemia

B. Vitamin B_6 - Loss of appetite

C. Vitamin B_1 - Beri-beri

D. Vitamin B_1 - Pellagra

Answer: D

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Assignment Section A

1. The major components of food are

A. Cabohydrates

B. Proteins

C. Fats

D. All of these

Answer: D

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2. In which type of dentition, each tooth in the buccal cavity is embedded in a socket of jaw bone?

A. Heterodont

B. Thecodont

C. Diphyodont

D. Monophyodont

Answer: B

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3. Dental formula in human beings is

A. $\frac{2123}{2123}$

B. $\frac{2021}{2021}$

C. $\frac{2321}{2321}$

D. $\frac{2133}{2133}$

Answer: A

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4. The common passage for food and air is

A. Oesophagus

B. Pharynx

C. Trachea

D. Glottis

Answer: B

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5. All of the following are the parts of large intestine, except

A. Caecum

B. Colon

C. Ileum

D. Rectum

Answer: C

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6. Oesophagus opens in which part of the stomach?

A. Pyloric

B. Cardiac

C. Fundic

D. Caecum

Answer: B

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7. How many pairs of salivary glands are present in human beings?

A. 2 pairs

B. 3 pairs

C. 4 pairs

D. 5 pairs

Answer: B

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8. Which gland is both exocrine and endocrine?

A. Liver

B. Gall bladder

C. Glisson's capsule

D. Pancreas

Answer: D

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9. Glisson's capsule is associated with :

A. Liver

B. Pancreas

C. Lung

D. Pharynx

Answer: A

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10. Endocrine portion of pancreas secretes

A. Insulin

B. Glucagon

C. Both (1) & (2)

D. HCl

Answer: C

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11. Bile is stored and concentrated in

A. Liver

B. Pancreas

C. Lungs

D. Gall bladder

Answer: D

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12. Which organ of the following present in abdominal cavity, just below diaphragm.

A. Pharynx

B. Pancreas

C. Liver

D. Tongue

Answer: C

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13. Which is the largest gland in human body?

A. Liver

B. Pancreas

C. Gall bladder

D. Lung

Answer: A

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14. The wall of alimentary canal from oesophagus to rectum possesses _____ layers.

A. 2 layers

B. 3 layers

C. 4 layers

D. 5 layers

Answer: C

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15. The major functions of buccal cavity is/are

A. Mastication of food

B. Facilitation of swallowing

C. Help in the secretion of glucagon

D. Both (1) & (2)

Answer: D

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16. The antibacterial enzyme, present in the saliva that prevents infections is

A. Maltose

B. Salivary amylase

C. Lysozyme

D. Pepsinogen

Answer: C

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17. HCl secreting cells presents in the stomach are

A. Oxyntic cells

B. Peptic cells

C. Chief cells

D. Mucus neck cells

Answer: A

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18. Which enzyme gets activated by HCl, secreted from gastric glands?

A. Trypsinogen

B. Pepsinogen

C. Renin

D. Chymotrypsin

Answer: B

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19. All of the following juices contain enzymes, except

A. Pancreatic juice

B. Intestinal juice

C. Bile juice

D. Gastric juice

Answer: C

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20. The breakdown of biomoleculses i.e. dipeptides, tactose, maltose and sucrose etc. occur mainly in the

A. illum

B. Pyloric region of stomach

C. Duodenum region of small intestine

D. Caecum region of large intestine

Answer: C

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21. Absorption of substances takes place in different parts of the alimentary canal. However maximum absorption takes places in

A. Small intestine

B. Large intestine

C. Transverse colon

D. Ascending colon

Answer: A

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22. Absorption of water, simple sugars and alcohol etc. takes place in

A. Mouth

B. Stomach

C. Rectum

D. Large intestine

Answer: B

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23. Enzyme lactase is responsible for the breakdown of lactose into

A. Glucose + Fructose

B. Glucose + Galactose

C. Glucose + Glucose

D. Fatty acids + Glycerol

Answer: B

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24. Crypts of lieberkuhn are present in

A. Stomach

B. Pharynx

C. Oesophagus

D. Intestine

Answer: D

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25. In intestine, the function of micorvilli is to

A. Secrete gastric juice

B. Secrete pancreatic juice

C. Increase absorptive surface area

D. Secrete hormones

Answer: C

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26. The main function of bile is to

A. Eliminate the waste products

B. Emulsify the fats

C. Digest proteins by enzymatic activity

D. Regulate the digestion process

Answer: B

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27. The wave like muscular contractions of the digestive tract is called

A. Mastication

B. Assimilation

C. Peristalsis

D. Stimulation

Answer: C

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28. Abnormal frequency of bowel movement and increased liquidity of the faecal discharge is known as

A. Vomiting

B. Diarrhoea

C. Constipation

D. Indigestion

Answer: B

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29. Enzyme trypsinogen is a component of

A. Mucus

B. Saliva

C. Pancreatic juice

D. Intestinal juice

Answer: C

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30. The food that enters into intestine from stomatch is

A. Alkaline chyle

B. Fundus

C. Acidic chyme

D. Bolus

Answer: C

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Assignment Section B

1. Pyloric sphincter regulates the opening of

A. Pharynx into oesophagus

B. Oesophagus into stomach

C. Stomach into duodenum

D. Ileum into large intestine

Answer: C

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2. The structural and functional unit of liver is

A. Cystic duct

B. Hepatic lobule

C. Hepatopancreatic duct

D. Sphincter of Oddi

Answer: B

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3. Match the following

	Column I (Salivary gland)		Column II (Their location)
$a.$	Parotids	(i)	Below tongue
$b.$	Sub-maxillary/sub-mandibular	(ii)	Lower jaw
$c.$	Sub-linguals	(iii)	Cheek

A. a(i), b(ii), c(iii)

B. a(i), b(iii), c(ii)

C. a(ii), b(i), c(iii)

D. a(iii), b(ii), c(i)

Answer: D

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4. Which carbohydrate splitting enzyme initiates the chemical process of digestion in the oral cavity ?

A. Lysozyme

B. Salivary amylase

C. Pepsin

D. Rennin

Answer: B

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5. The type of cells present in the gastric glands which secretes intrinsic factor?

A. Peptic cells

B. Chief cells

C. Parietal cells

D. Both (1) & (2)

Answer: C

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6. The proteolytic enzyme found in fastric juice of infants which hepls in digestion of milk protein is

A. Renin

B. Rennin

C. Salivary amylase

D. Lysozyme

Answer: B

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7. The pencreatic juice contains various enzymes, except

A. Pepsinogen

B. Trypsinogen

C. Chymotrypsinogen

D. Procarboxypeptidases

Answer: A

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8. Select the incorrect option

A. Bilirubin and biliverdin are the bile pigments

B. Emulsification is the breakdown of the fats into very small droplets

C. Rennin is a proteolytic enzyme found in the pancreatic juice of infants which helps in the digestion of milk protein

D. Mucus and bicarbonates protect mucosal epithelium from excoriation by highly conc. HCl

Answer: C

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9. Select the incorrect option regarding digestion and absorption of substances in different parts of digestive system

A. In large intestine, absorption of water, some minerals and drugs takes place

B. Absorption of water, simple sugars and alcohol takes place in stomach

C. Small intestine is the principal organ for absorption of nutrients

D. The digestion is completed in large intestine

Answer: D

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10. Bile can be prevented to pass into duodenum by

A. Sphincter of Oddi

B. Cardiac sphincter

C. Pyloric sphincter

D. Ileo-caecal valve

Answer: A

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11. The main enzymes present in the gastric juice are

A. Trypsin, pepsin and lipase

B. Pepsin, amylase and trypsin

C. Pepsin, rennin and carboxypeptidase

D. Pepsin, lipase and rennin

Answer: D

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12. Match the following columns

	Column I		Column II
$a.$	Lysozyme	(i)	HCl
$b.$	Peptic cells	(ii)	Antibacterial enzyme
$c.$	Saliva	(iii)	Sublingual gland
$d.$	Oxyntic cells	(iv)	Pepsinogen

A. a(i), b(ii), c(iii), d(iv)

B. a(ii), b(iv), c(iii), d(i)

C. a(i), b(ii), c(iv), d(iii)

D. a(ii), b(iv), c(i), d(iii)

Answer: B

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13. The digestion of which food component is affected if pancreas is removed?

A. Carbohydrates

B. Proteins

C. Fats

D. All of these

Answer: D

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14. At which site the emulsification of fat takes place?

A. Pancreas

B. Gall bladder

C. Liver

D. Duodenum

Answer: D

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15. Which of the following is a modification of mucosa of alimentary canal.

A. Villi

B. Microvilli

C. Rugae

D. All of these

Answer: D

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16. Dental formula for the monophyodont teeth of human is

A. $\frac{0021}{0021}$

B. $\frac{0003}{0003}$

C. $\frac{2120}{2120}$

D. $\frac{2102}{2102}$

Answer: A

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17. Upper molars in human dentition have

A. Four roots

B. Three roots

C. Two roots

D. Single root

Answer: B

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18. Which of the following can be taken as true stomach in ruminants

A. Rumen

B. Reticulum

C. Omasum

D. Abomasum

Answer: D

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19. Oblique muscle layer is present in

A. Stomach

B. Duodenum

C. Colon

D. All of these

Answer: A

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20. One of the following ions is used for activation of ptyalin

A. Sodium ions

B. Potassium ions

C. Chloride ions

D. None of these

Answer: C

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21. In acute constipation, purgatives that are common to stimulate intestinal peristalsis and evacuation of fluid feces contain salts of

A. Sodium

B. Magnesium

C. Potassium

D. Calcium

Answer: B

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22. A prolonged constipation may cause

A. Hemorrhoids

B. Ulcers

C. Cholera

D. Dysentry

Answer: A

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23. Mark the odd one out

A. Gastrin

B. Trypsin

C. Secretin

D. Enterocrinin

Answer: B

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24. When a piece of bread is chewed it tastes sweet because

A. The sugar contents are drawn out

B. Saliva converts starch into maltose

C. It does not taste sweet

D. The taste buds are stimulated by chewing

Answer: B

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25. The blood capillaries of intestinal villi cannot absorb

A. Glucose

B. Salts

C. Fatty acids and glycerides

D. Amino acids

Answer: C

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26. Vitamin-containing cobalt cyanide linkage is

A. A

B. B_1

C. B_6

D. B_{12}

Answer: D

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27. Pernicious anaemia is caused by deficiency of vitamin

A. B_1

B. B_{12}

C. C

D. D

Answer: B

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28. Beri-beri is caused by the deficieny of vitamin

A. B_7

B. A

C. C

D. B_1

Answer: D

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29. Which of the following papillae are without taste buds in human tongue?

A. Vallate

B. Fungiform

C. Foliate

D. Filiform

Answer: D

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30. Sphincter of Boyden which helps in the filling up of gall bladder is present in

A. Ductus choledoccus

B. Duct of Wirsurg

C. Ampulla of Vater

D. Duct of Santorini

Answer: A

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31. Thecodont teeth are present in

a. Sphenodon

b. Crocodiles

c. Mammals

d. Scoliodon

A. c only

B. b & c only

C. a, b & c only

D. a, b, c & d

Answer: B

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32. Cholecystitis refers to inflammation of

A. Gall bladder

B. Stomach

C. Spleen

D. Lungs

Answer: A

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33. Digestion is completed in

A. Duodenum

B. Ileum

C. Stomach

D. Cloaca

Answer: B

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Assignment Section C

1. Which cells of crypts of Lieberkuhn secrete antilbacterial lysozyme

A. Argentaffin cells

B. Paneth cells

C. Zymogen cells

D. Kupffer cells

Answer: B

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2. Lungs are made up of air-filled sacs, the alveoli . They do not collapse even after forceful expiration because of

A. Residual Volume

B. Inspiratory Reserve Volume

C. Tidal Volume

D. Expiratory Reserve Volume

Answer: A

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3. The Primary denition in human differ from permanent denition is not having one of the folloiwn type of teeth

or

A baby boy aged two years years is admitted to play school and passes through a dental observed that boy that had twenty teeth. Which teeth were absent absent

A. Incisors

B. Canines

C. Pre-molars

D. Molars

Answer: C

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4. Which of the following options best represents the enzymes composition of pancreatic juice?

A. Amylase, peptidase, trypsinogen, rennin

B. Amylase, pepsin, trypsinogen, maltase

C. Peptidase, amylase, pepsin, rennin

D. Lipase, amylase, trypsinogen, procarboxy-peptidase

Answer: D

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5. Which of the following gurads the opening of hepatopancreatic duct into the duodenum?

A. Sphincter of Oddi

B. Semilunar valve

C. Ileocaecal valve

D. Pyloric sphincter

Answer: A

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6. In the stomach, gastric acid is secreted by the

A. Acidic cells

B. Gastrin secreting cells

C. Parietal cells

D. Peptic cells

Answer: C

Watch Video Solution

7. The primary dentition in human differs from permanent dentition in not having one of the following type of teeth

A. Incisors

B. Canine

C. Premolars

D. Molars

Answer: C

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8. The enzyme that is not present in succus entericus is

A. Lipase

B. Maltase

C. Nucleases

D. Nucleosidase

Answer: C

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9. Which of the following statement is not correct?

A. Acini are present in the pancreas and secrete carboxypeptidase

B. Brunner's glands are present in the submucosa of stomach and secrete pepsinogen

C. Goblet cells are present in the mucosa of intestine and secrete mucus

D. Oxyntic cells are present in the mucosa of stomach and secrete HCl

Answer: B

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10. Gastric juice of infants contains

A. Amylase, rennin, pepsinogen

B. Maltase, pepsinogen, rennin

C. Nuclease, pepsinogen, lipase

D. Pepsinogen, lipase, rennin

Answer: D

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11. The intitial step in digestion of milk in infant is carreid out by

A. Lipase

B. Trypsin

C. Rennin

D. Pepsin

Answer: C

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12. Fructose is abosrbed into the blood through mucosa cells of intestine by process called

A. Active transport

B. Facilitated transport

C. Simple diffusion

D. Co-transport mechanism

Answer: B

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13. Select the correct match of the digested products in humans given in column I with their absorption site and mechanism in Column II

	Column I	Column II
(a)	Cholesterol, maltose	Large intestine, active absorption
(b)	Glycine, glucose	Small intestine, active absorption
(c)	Fructose, Na^+	Small intestine, passive absorption
(d)	Glycerol, fatty acids	Duodenum, move as chilomicrons

A. Column I: Fructose, Na^+ — Column II: Small intenstine, passive absorption

B. Column I: Glycerol, fatty acids — Column II: Duodenum, move as chylomicrons

C. Column I: Cholesterol, maltese — Column II: Large intestine, active absorption

D. Column I: Glycine, glucose — Column II: Small intestine, active absorption

Answer: D

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14. Where do certain symboitic microorganisms normally occur in human body

A. Duodenum

B. Caecum

C. Oral lining and tongue surface

D. Vermiform appndix and rectum

Answer: B

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15. Anxiety and eating spicy food together in an otherwise normal human, may lead to

A. Vomiting

B. Indigestion

C. Jaundice

D. Diarrhoea

Answer: B

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16. Which one of the following enzymes carries out the initial step in the digestion of milk in humans?

A. Trypsin

B. Pepsin

C. Rennin

D. Lipase

Answer: C

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17. Two friends are eating togeather on a dinning table. One of them suddenly starts coughing while swallowing some food. This coughing would have been due to improper movement of

A. Tongue

B. Epiglottis

C. Diaphragm

D. Neck

Answer: B

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18. Which one of the following correctly represents the normal adult human formula:

A. $\frac{2}{2}, \frac{1}{1}, \frac{2}{2}, \frac{3}{3}$

B. $\frac{3}{3}, \frac{1}{1}, \frac{3}{3}, \frac{3}{3}$

C. $\frac{3}{3}, \frac{1}{1}, \frac{3}{2}, \frac{1}{1}$

D. $\frac{2}{2}, \frac{1}{1}, \frac{3}{2}, \frac{3}{3}$

Answer: A

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19. In humnas one of the constituents of the pancreatic juice which is poured into the doudenum is

A. Trypsin

B. Enterokinase

C. Trypsinogen

D. Chymotrypsin

Answer: C

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20. If for some reason our goblet cells are non-functional, this will adversely effect

A. Smooth movement of food down the intestine

B. Productin of somatostatin

C. Secretion of sebum from the sebaceous glands

D. Maturation of sperms

Answer: A

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21. Carrier ions like Na^+ facilitate the absorption of substance like

A. Fructose and some amino acids

B. Amino acids and glucose

C. Glucose and fatty acids

D. Fatty acids and glycerol

Answer: B

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22. If the some reason the parietal cells of the gut epithelium become partially non-functional, what is likely to happen

A. The pancreatic enzymes and specially the trypsin and lipase will not work efficiently

B. The pH of stomach will fall abruptly

C. Steapsin will be more effective

D. Proteins will not be adequately hydrolysed by pepsin into proteoses and peptones

Answer: D

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23. Jaundice is a disorder of :

A. Excretory system

B. Skin and eyes

C. Digestive system.

D. Circulatory system

Answer: C

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24. When breast feeding is replaced by less nutritive food low in proteins and calories, the infants below the age of one year are likely to suffer from

A. Rickets

B. Kwashiorkor

C. Pellagra

D. Marasmus

Answer: D

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25. A young infant may be feeding entirely on mother's milk which is white in colour but the stools which the infant passes out is quite yellowish. The yellow colour of stool is due to

A. Bile pigments passed through bile juice

B. Undigested milk protein casein

C. Pancreatic juice poured into duodenum

D. Intestinal juice

Answer: A

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26. Which one of the following statements is true regarding digestion and absorption of food in humans?

A. Fructose and amino acids are absorbed through intestinal mucosa with the help of carrier ions like Na^+.

B. Chylomicrons are small lipoprotein particles that are transported from intestine into blood capillaries.

C. About $60\ \%$ of starch is hydrolysed by salivary amylase in our mouth.

D. Oxyntic cells in our stomatch secrete the proenzyme pepsinogen.

Answer: A

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27. Which one of the following pairs of food components in human reaches the stomach totally undigested

A. Starch and fat

B. Fat and cellulose

C. Starch and cellulose

D. Protein and starch

Answer: B

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28. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor?

A. Enterokinase will not be released from the duodenal mucosa and so trypsinogen is not converted to trypsin

B. Gastric juice will be deficient in chymosin

C. Gastric juice will be deficient in pepsinogen

D. In the absence of HCl secretion, inactive pepsinogen is not converted into the active enzyme pepsin.

Answer: D

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29. Which one of the following is the correct mathcing of the site of action on the given substrate, the enzyme acting upon it and the end producrt?

A. $\text{Stomach} \quad : \quad \text{Fats} \xrightarrow{\text{Lipase}} \text{micelles}$

B. $\text{Duodenum} \quad : \quad \text{Triglycerides} \xrightarrow{\text{Trypsin}} \text{monoglycerides}$

C. $\text{Small intestine} \quad : \quad \text{Starch} \xrightarrow{\alpha\text{Amylase}} \text{Disaccharide (Maltose)}$

D. $\text{Small intestine} \quad : \quad \text{Proteins} \xrightarrow{\text{Pepsin}} \text{Amino acids}$

Answer: C

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30. Which one of the following is a fat-soluble vitamin and its related deficiency disease

A. Calciferol - Pellagra

B. Ascorbic acid - Scurvy

C. Retinol - Xerophthalmia

D. Cobalamine - Beri-beri

Answer: C

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31. A person on long hunger strike and surviving only on water will have

A. Less urea in his urine

B. More sodium in his urine

C. Less amino acids in his urine

D. More glucose in his blood

Answer: A

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32. Examination of blood of a person suspected of having anaemia, shows large, immature, nucleated erythrocytes without haemoglobin. Supplementing his diet with which of the following is likely to alleviate his symptoms

A. Thiamine

B. Folic acid and cobalamine

C. Riboflavin

D. Iron compounds

Answer: B

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33. A patient is advised to specially consume more meat ,lentil ,milk and eggs in diet when the patient suffers from

A. Kwashiorkor

B. Rickets

C. Anaemia

D. Scurvy

Answer: A

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34. Secretin and cholecystokinin are digestive hormones. They are secreted in :

A. Oesophagus

B. Ileum

C. Duodenum

D. Pyloric stomach

Answer: C

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35. Which group of three of the following five statement (1-5) contain is all three correct statements regarding beri-beri

1 . A crippling disease prevalent among the native population of sub-Saharan Africa

2. A deficiency disease caused by lack of thiamine (vitamin B_1)

3. A nutritional disorder in infants and young children when the diet is persistenly deficient in essential protein

4 . Occurs in those countries where the staple diet is polished rice

5 . The symptoms are pain from neuritis , paralysis , muscle wasting , progressive oedema mental deterioration and finally heart failure .

A. A, B and D

B. B, D and E

C. A, C and E

D. B, D and E

Answer: D

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36. Protective components of food are

A. Minerals, vitamins and water

B. Minerals, carbohydrate and proteins

C. Minerals, carbohydrate and fats

D. Vitamin, water and carbohydrate

Answer: A

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37. Which of the following is correct location and function of Meissner's plexus of intestine?

A. Muscularis externa - Peristalsis

B. Muscularis interna - Peristalsis

C. Submucosa - Mucosal secretions

D. Mucosa - Mucosal secretions

Answer: C

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38. Which of the following is true regarding the source and nature of the enamel?

A. Odontoblast, mesodermal

B. Odontoblast, ectodermal

C. Ameloblast, mesodermal

D. Ameloblast, ectodermal

Answer: D

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39. Choose the correct enzyme-substrate pair

A. Lipase (carbohydrate)

B. Maltase (lactose)

C. Rennin (casein)

D. Amylase (protein)

Answer: C

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40. The following are absent in case of upper one third part of oesophagus, except

A. Visceral peritoneum (Serosa)

B. Degestive gland

C. Myenteric plexus

D. Skeletal muscles

Answer: D

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41. Mark the correct statement

A. In lower one third part of oesophagus both Myenteric and Meissner's plexus are absent

B. Carboxypeptidase is exopeptidase acting on 'N' terminal end of peptide chain

C. Galactosemia is metabolic genetic disorder due to deficiency of the enzyme uridyl transferase

D. Nucleotidase and nucleosidase enzymes are present in pancreatic juice

Answer: C

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42. Sphincter of Oddi guards

A. Hepato-pancreatic duct

B. Common bile duct

C. Pancreatic duct

D. Cystic duct

Answer: A

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43. Which of the following is correct pairing of the site of action and the substrate of renin

A. Mouth-starch

B. Small intestine-protein

C. Stomach-casein

D. Stomach-fat

Answer: C

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44. If liver is removed, the compound which is not absorbed by mucosa of intestine.

A. Proteins

B. Carbohydrates

C. Fats

D. Lactose

Answer: C

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45. What is common among amylase, rennin and trypsin?

A. These are produced in stomach

B. These act at a pH lower than 7

C. These all are proteins

D. These all are proteloytic enzymes

Answer: C

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46. Hydrolytic enzyme which acts at low pH is

A. Lipases

B. α-Amylase

C. Hydrolases

D. Peroxidase

Answer: C

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47. Which one of the following hydrolyses internal phosphodiester, bonds in a polynucleotide chain

A. Lipase

B. Protease

C. Endonuclease

D. Exonuclease

Answer: C

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48. Brunner's glands are found in

A. Stomach

B. Oesophagus

C. Ileum

D. Duodenum

Answer: D

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Watch Video Solution

49. The enzyme enterokinase helps in the conversion of

A. paracasein into casein

B. Trypsinogen into trypsin

C. Pepsinogen into pepsin

D. Proteins into polypeptides

Answer: B

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50. Activation of pro-carboxypeptidase into carboxypeptidase is brought about by

A. Enterokinase

B. Endopeptidase

C. Exopeptidase

D. Trypsin

Answer: D

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51. Which of the following is the function of enterogastrone?

A. It inhibits the secretion of gastric juice

B. It stimulates the secretion of digestive juice in the stomach

C. It stimulates the flow of pancreatic juice

D. It regulates the flow of bile

Answer: A

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52. Contraction of gall bladder is induced by

A. Cholecystokinin

B. Enterogastrone

C. Gastrin

D. Secretin

Answer: A

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53. Hormone that stimulates stomach to secrete gastric juice is

A. Enterokinase

B. Enterogastrone

C. Gastrin

D. Rennin

Answer: C

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54. Cholecystokinin and duocrinin are secreted by

A. Adrenal cortex

B. Thyroid gland

C. Intestine

D. Pancreas

Answer: C

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55. Which part of body secretes the hormone secretin?

A. Stomach

B. Oesophagus

C. Ileum

D. Duodenum

Answer: D

Watch Video Solution

56. Which of the following hormones is not secreted by duodenum to inhibit the gastric motility?

A. GIP

B. Enterogastrone

C. Secretin

D. Enterokinase

Answer: D

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57. Which of the following carries glucose form digestive tract to liver

A. Pulmonary vein

B. Hepatic artery

C. Hepatic portal vein

D. None of these

Answer: C

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58. In case of vertebrates, lacteals are found in

A. Oesophagus

B. Ear

C. Small intestine

D. Ischium

Answer: C

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59. The movement of Ions against the concentration gradient will be -

A. Active transport

B. Osmosis

C. Diffusion

D. All of these

Answer: A

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60. Vomitting centre is located in the

A. Medulla oblongata

B. Stomach and sometimes in duodenum

C. GI tract

D. Hypothalamus

Answer: A

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61. Which one of the following vitamins can be synthesized by bacteria inside the gut

A. D

B. A

C. B_1

D. C

Answer: C

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62. Which one of the following is a protein deficiency disease?

A. Kwashiorkor

B. Night blindness

C. Eczema

D. Cirrhosis

Answer: A

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63. Stool of a person is whitish grey coloured due to malfunction of which of the following organs?

A. Pancreas

B. Spleen

C. Kidney

D. Liver

Answer: D

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64. Constipation can be prevented or removed by

A. Taking more roughage

B. Taking purgatives rich in magnesium salt

C. Taking distilled water

D. Both (1) & (2)

Answer: D

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65. During prolonged fasting,the sequence of organic compound used by body is

A. First carbohydrates, next fats and lastly proteins

B. First fats, next carbohydrates and lastly proteins

C. First carbohydrates, next proteins and lastly lipids

D. First Proteins, next lipids and lastly carbohydrates

Answer: A

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66. A normal human being requires how much calories per day?

A. 2000 kcal

B. 1000 kcal

C. 750 kcal

D. 2800 kcal

Answer: D

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Assignment Section D Assertion Reason Type Questions

1. Assertion: Gastrectomy can lead to iron-deficiency or anaemia.

Reason: HCl of gastric juice converts Fe^{3+} into Fe^{2+} which makes iron absorbabale.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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2. Assertion: Cholagogues are substances that cause the contraction of gall bladder.

Reason: These substances cause release of CCK-PZ from duodenum

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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3. Assertion: Aptyalism patients have higher than normal incidences of dental caries.

Reason: Aptyalism is caused by the action of parasympa- thetic nervous system

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: C

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4. Assertion: In humans, the duct of Wirsung from pancreas combines with bile duct before opening into duodenum.

Reason: Blockage in the duct of Wirsung will hamper the endocrine function of pancreas

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: C

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5. Assertion: In acute constipation, purgative containing magnesium salts are generally used.

Reason: The osmotic effect of Mg^{2+} in the intestinal lu- men prevents Water reabsorption from intestine. Mg^{2+} increases the solute concentration in the intestinal lumen because Mg^{2+} is absorbed very slowly

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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6. A : Liver assist in digestion of fat.

R : Hepatic secretion contains bile salts which emulsify fat

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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7. A : Vomiting is the forcible expulsion of the contents of the upper gastrointestinal tract through the mouth.

R : The strongest stimuli for vomiting are irritation and distension of the stomach.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: B

8. A : Gastric emptying is slowest after a fat-laden meal containing large number of triglycerides.

R : Fatty acids in chyme stimulate release of both CCK and GIP, which slow stomach emptying.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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9. A : Trypsin is secreted in pancreatic juice as trypsinogen.

R : Zymogenic forms protect pancreas from autodigestion.

R : Zymogenic forms protect pancreas from autodigestion.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion, then mark (1).

B. If both Assertion is true but the reason is not the correct explanation of the assertion, then mark (2).

C. If Assertion is true statement but Reason is false, then mark (3).

D. If both Assertion and Reason are false statements, then mark (4).

Answer: A

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10. A : Trypsin is an example of endopeptidase and is present in the pancreatic juice.

R : Trypsin acts on the interior peptide of a protein molecule.

A. If both Assertion & Reason are true and the reason is the correct explanation of the assertion

B. If both Assertion is true but the reason is not the correct explanation of the assertion,

C. If Assertion is true statement but Reason is false

D. If both Assertion and Reason are false statements

Answer: A

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