

Nutrition in Human Beings

Very short answer type questions

1. Define nutrition.
2. Name the most common method of ingestion in *Amoeba*.
3. Why is food vacuole of *Amoeba* called temporary stomach ?
4. Which structure prevents the entry of food particles into wind pipe ?
5. Name the enzyme present in human saliva. What type of food material is digested by this enzyme ?
6. Name different types of teeth present in man.
7. Define peristalsis.
8. Define assimilation.
9. Name the enzymes present in gastric juice.
10. Name the largest digestive gland in human body.
11. What is emulsification of fat ?
12. Which part of alimentary canal is adapted for complete digestion and absorption of food ?
13. What is succus entericus ?
14. Which part of the body secretes bile ? Where is bile stored ?
15. Name the protein-digesting enzymes present in pancreatic juice of man.
16. What are the end-products of fat digestion ?
17. Give the importance of bile during digestion process, also write from where it is secreted and what is its site of action ?
18. Name five different types of glands present in human digestive system

Short answer type questions

1. Describe various modes of nutrition.
2. What are the differences between autotrophic nutrition and heterotrophic nutrition ?
3. Mention various steps of nutrition in *Amoeba*.
4. What is the role of hydrochloric acid in our stomach?
5. State two functions of large intestine of man.
6. What is the difference between ingestion and egestion?
7. What criteria do we use to decide whether something is alive?

8. How is the small intestine designed to absorb digested food ?
9. How can dental caries be prevented ?
10. What is the function of digestive enzymes?

Long answer type questions

1. Draw a well labelled diagram of human alimentary canal. Mention the functions of liver.
2. Explain how does the major nutrients in chapatti eaten by you in your food get digested and finally absorbed by the alimentary canal ?
3. Explain various digestive glands present in man along with their secretions & functions.
4. How are fats digested in our bodies? Where does this process take place?

Fill in the blanks

1. Hard palate has transverse ridges called _____
2. Human teeth are thecodont, _____ and _____
3. Man bears 4 kinds of teeth :
 - (i) _____
 - (ii) _____
 - (iii) _____
 - (iv) _____
4. Bile and pancreatic ducts open into _____
5. Villi are found in _____
6. Appendicitis is inflammation of _____
7. Three pairs of salivary glands in humans are _____, _____ and _____
8. Succus entericus is the secretion of _____
9. Enzyme enterokinase activates _____
10. _____ is the J shaped large bag like structure in upper left part of abdominal cavity.
11. Inferior most part of pharynx is _____
12. The opening of stomach into duodenum is guarded by _____
13. Large intestine has three parts
 - i. _____
 - ii. _____
 - iii. _____

14. A narrow finger like tubular projection attached to caecum is _____
15. Pancreas secretes _____ and _____ hormones.
16. _____ stores and concentrates bile juice.
17. Maximum absorption occurs in _____
18. Food mixed with saliva is called _____
19. Iodine help in the synthesis of _____ hormone.
20. Pellagra is due to the deficiency of _____

True/False questions

State whether the following statements are true or false.

1. Some organisms like bread moulds, yeast and mushrooms break-down the food material outside the body and then absorb it.
2. In *Amoeba*, the food may be taken in by the entire surface while in *Paramoecium*, food is taken in at a specific spot.
3. Mechanical break-down of food is done with the help of biological catalysts called enzymes.
4. Peristalsis starts in oesophagus of gut due to rhythmic contraction of muscles in order to push the food forward.
5. Hydrochloric acid creates an acidic medium which facilitates the action of the enzyme trypsin.
6. The longest part of alimentary canal which is fitted into a compact space is called large intestine.
7. The length of the small intestine differs in various animals depending on their size only.
8. Small intestine of herbivores is shorter while that of carnivores is longer.
9. Bile salts helps in emulsification of fats for increasing the efficiency of enzyme action.
10. The enzymes present in pancreatic juice finally convert the proteins to amino acids, complex carbohydrates into glucose and fats into fatty acids and glycerol.
11. The inner lining of the small intestine has numerous finger-like projections called villi which increase the surface area for digestion.
12. Large intestine helps to absorb water from unabsorbed food entering it.
13. Dental caries begins when bacteria acting on sugars produce acids that soften or demineralise the enamel.
14. The organism getting food from dead and decaying organic matter, are called parasites.
15. Amoeba takes food by holozoic mode of nutrition.
16. The food entering intestine has alkaline nature.

Objective type questions

In the following questions, four options are given out of which only one is correct.

1. On the basis of food material consumed, humans are
 (1) Omnivorous (2) Herbivorous
 (3) Carnivorous (4) Sanguivorous
2. How many among the following show parasitic nutritive strategy?
 Bread mould, amar-bel, ticks, mushroom, lice, leech, tapeworm, yeast
 (1) two (2) three
 (3) four (4) five
3. What is true for *Paramoecium* ?
 (1) unicellular organism
 (2) it has definite shape
 (3) food is taken in at a specific spot
 (4) all of above
4. Ingestion of food in *Amoeba* occurs with the help of
 (1) cilia (2) pseudopodia
 (3) food vacuole (4) flagella
5. Which of the following is true for extracellular digestion?
 (1) More efficient
 (2) Occurs in humans
 (3) Occurs inside the cells
 (4) Both (1) & (2)
6. If egestion, absorption, digestion, assimilation and ingestion are arranged in chronological sequence, which would be at third position ?
 (1) Digestion (2) Absorption
 (3) Assimilation (4) Egestion
7. In humans, each tooth is embedded in the socket of jaw bone, such type of dentition is called
 (1) Diphyodont (2) Heterodont
 (3) Thecodont (4) Homodont
8. Wisdom teeth in humans are
 (1) premolars (2) canines
 (3) last molars (4) molars
9. Which of the following structure closes internal nostrils during swallowing of food?
 (1) Uvula (2) Epiglottis
 (3) Soft palate (4) Glottis
10. Find incorrect statement
 (1) Tongue is attached to the sides of buccal cavity by lingual frenulum
 (2) Upper surface of tongue has papillae
 (3) Only some papillae bear taste buds
 (4) Tongue is the main organ of taste
11. In humans, dentition is
 (1) heterodont, thecodont
 (2) homodont, diphyodont
 (3) thecodont, diphyodont
 (4) both (1) & (3)
12. Tooth is nourished by blood vessels present in
 (1) enamel (2) dentine
 (3) crown (4) pulp cavity

13. The nutrition in mucor is
 (1) parasitic (2) autotrophic
 (3) saprophytic (4) holozoic
14. In *Amoeba* the digestion is intracellular because it is
 (1) multicellular
 (2) fresh water organism
 (3) microscopic organism
 (4) unicellular
15. Which of the following statement is incorrect for viruses?
 (1) They are basically intracellular parasites
 (2) They are living cells
 (3) They do not show any molecular movement until they infect certain cells
 (4) Both (2) and (3)
16. Which of the following organisms breakup their food outside the cells ?
 (1) Bread mould (2) yeast
 (3) mushrooms (4) all of above
17. The part of pharynx which has openings of eustachian tube is
 (1) nasopharynx (2) oropharynx
 (3) laryngopharynx (4) all of above
18. Which of the following statement is incorrect w.r.t. oesophagus?
 (1) 25 cm long, thin tube
 (2) located in front of trachea and heart
 (3) extends posteriorly through neck, thorax and diaphragm
 (4) open into stomach at a sharp angle
19. The muscular sphincter which regulates the opening between oesophagus and stomach is
 (1) Cardiac sphincter
 (2) Gastro-oesophageal sphincter
 (3) Pyloric sphincter
 (4) Both (1) & (2)
20. J-shaped bag like structure present in upper left part of abdominal cavity is
 (1) Liver (2) Duodenum
 (3) Stomach (4) Jejunum
21. Distal part of small intestine opens into which part of large intestine?
 (1) Colon (2) Caecum
 (3) Rectum (4) Jejunum
22. Vermiform appendix is
 (1) vestigial in humans
 (2) narrow finger like
 (3) attached to caecum
 (4) all of above
23. Which of the following statement is incorrect?
 (1) Length of small intestine is longer in herbivores than in carnivores
 (2) Transverse colon is present between caecum and ascending colon
 (3) Faeces are temporarily stored in rectum
 (4) Large intestine helps in the absorption of some water, minerals and some drugs
24. External anal sphincter is made up of ____ muscles and is ____
 (1) smooth, voluntary
 (2) striated, involuntary
 (3) Skeletal, voluntary
 (4) smooth, involuntary
25. Chewing is an example of
 (1) chemical digestion
 (2) mechanical digestion
 (3) biochemical digestion
 (4) hydrolysis
26. Food we eat is broken down into smaller molecules with the help of
 (1) enzymes
 (2) biological catalysts
 (3) inorganic catalysts
 (4) both (1) and (2)
27. The main function of intestinal villi is
 (1) lubrication
 (2) to control peristalsis
 (3) mixing of food with digestive juices
 (4) to increase surface area for absorption
28. Number of salivary glands in human is
 (1) 5pairs (2) 3
 (3) 2 pairs (4) 3 pairs
29. pH of saliva in humans is
 (1) 7.8 (2) 1.8
 (3) 6.8 (4) 4.8
30. Salivary amylase acts on
 (1) proteins (2) starch
 (3) fats (4) nucleic acids
31. Saliva contains
 (1) lysozyme (2) salivary amylase
 (3) mucus (4) all of these
32. What will happen if mucus is not secreted in the stomach?
 (1) There will be no absorption of food
 (2) It can lead to erosion of stomach lining
 (3) It can result in acidity and ulcer formation in stomach
 (4) Both (2) & (3)
33. Function of HCl of gastric juice is
 (1) to provide acidic medium for the action of pepsin
 (2) to kill microbes present in the food
 (3) activation of pepsinogen to pepsin
 (4) all of these
34. Emulsification of fats is done by
 (1) pancreatic lipase (2) bile salts
 (3) bile pigments (4) intestinal lipase
35. Digestive enzyme lipase is present in
 (1) saliva (2) bile
 (3) pancreatic juice (4) both (2) and (3)
36. Fats $\xrightarrow{(X)}$ Fatty acids + Glycerol
 Identify (x) in the above reaction
 (1) pepsin (2) trypsin
 (3) lipase (4) amylase

37. Proteins $\xrightarrow{\text{Pepsin}}$ A + B
A and B in the above reaction are respectively
(1) proteoses, peptones
(2) maltose, isomaltose
(3) fatty acids, glycerol
(4) peptones, maltose
38. Pancreas is type of
(1) Exocrine gland (2) Compound gland
(3) Heterocrine gland (4) Both (2) and (3)
39. How many of the following are exocrine secretions of pancreas?
Trypsin, Lipase, Amylase, Pepsin, Insulin, Glucagon
(1) 3 (2) 5
(3) 6 (4) 2
40. Acidity in stomach can be due to
(1) stress
(2) smoking
(3) consumption of spicy food
(4) all of these
41. Both villi and microvilli are found in
(1) stomach (2) small intestine
(3) large intestine (4) both (1) and (2)
42. Main site of absorption of food in humans is
(1) stomach (2) large intestine
(3) small intestine (4) oesophagus
43. Longest part of small intestine is
(1) duodenum (2) jejunum
(3) ileum (4) colon
44. Digestion of food starts in
(1) stomach (2) buccal cavity
(3) duodenum (4) oesophagus
45. Duct of gall bladder is called
(1) bile duct
(2) hepatic duct
(3) cystic duct
(4) hepato pancreatic duct
46. Bile helps in
(1) digestion of carbohydrates
(2) digestion of proteins
(3) emulsification of fat
(4) absorption of proteins
47. Largest digestive gland in the human body is
(1) pancreas (2) liver
(3) stomach (4) salivary
48. Enzyme free juice is
(1) gastric (2) bile
(3) intestinal (4) saliva
49. Bile is stored and concentrated in
(1) Pancreas (2) Liver
(3) Spleen (4) Gall bladder
50. Digestion of starch starts and completes in _____ and _____ parts of alimentary canal respectively
(1) Buccal cavity, stomach
(2) Buccal cavity, small intestine
(3) stomach, small intestine
(4) small intestine, small intestine
51. Which of the following protein digesting enzyme(s) is/are found in pancreatic juice?
(1) Trypsin
(2) Chymotrypsin
(3) Carboxypeptidase
(4) All of these
52. Maltose breaks down into
(1) Glucose + galactose
(2) Glucose + fructose
(3) 2Glucose
(4) Galactose + fructose
53. Lactose upon digestion will break down into
(1) Glucose and fructose
(2) Glucose and galactose
(3) Glucose and glucose
(4) Galactose and fructose
54. Inner lining of the stomach is protected from the action of acid by
(1) HCl (2) Pepsin
(3) Mucus (4) Amylase
55. Longest part of alimentary canal in human is
(1) oesophagus (2) small intestine
(3) large intestine (4) stomach
56. Site of complete digestion of carbohydrates, proteins and fats is
(1) stomach (2) small intestine
(3) buccal cavity (4) large intestine
57. Trypsin is found in the secretions of
(1) gastric juice (2) pancreatic juice
(3) intestinal juice (4) saliva
58. End products protein digestion are
(1) fatty acids (2) glycerol
(3) amino acids (4) simple sugars
59. End product /s of fat digestion is / are
(1) amino acids
(2) proteoses
(3) glucose
(4) fatty acids and glycerol
60. Which of the following function is not performed by calcium?
(1) muscle contraction
(2) blood clotting
(3) Strengthening of bones and teeth
(4) Formation of thyroxine
61. Find correct match for the given vitamin and disease caused by its deficiency
- | Vitamin | – | Deficiency |
|----------------|---|---------------------|
| (1) Retinol | – | Beri-beri |
| (2) Niacin | – | Scurvy |
| (3) Calciferol | – | Rickets in children |
| (4) Thiamine | – | Night blindness |

Answers

Fill in the blanks

1. Rugae
2. Heterodont, Diphyodont
3. (i) Incisors (ii) Canines (iii) Premolars (iv) Molars
4. Duodenum
5. small intestine
6. Vermiform Appendix
7. Parotid, Sublingual and submaxillary
8. Intestinal glands
9. Trypsinogen
10. Stomach
11. Laryngopharynx
12. Pyloric sphincter
13. (i) Caecum (ii) Colon (iii) Rectum
14. Vermiform appendix
15. Insulin and glucagon
16. Gall bladder
17. Small intestine
18. Bolus
19. Thyroxine
20. Niacin

True/False

1. True
2. True
3. False
4. True
5. False
6. False
7. False
8. False
9. True
10. False
11. False
12. True
13. True
14. False
15. True
16. False

Objective type questions

1. (1) 34. (2)
 2. (4) 35. (3)
 3. (4) 36. (3)
 4. (2) 37. (1)
 5. (4) 38. (4)
 6. (2) 39. (1)
 7. (3) 40. (4)
 8. (3) 41. (2)
 9. (1) 42. (3)
 10. (1) 43. (3)
 11. (4) 44. (2)
 12. (4) 45. (3)
 13. (3) 46. (3)
 14. (4) 47. (2)
 15. (2) 48. (2)
 16. (4) 49. (4)
 17. (1) 50. (2)
 18. (2) 51. (4)
 19. (4) 52. (3)
 20. (3) 53. (2)
 21. (2) 54. (3)
 22. (4) 55. (2)
 23. (2) 56. (2)
 24. (3) 57. (2)
 25. (2) 58. (3)
 26. (4) 59. (4)
 27. (4) 60. (4)
 28. (4) 61. (3)
 29. (3)
 30. (2)
 31. (4)
 32. (4)
 33. (4)
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