

DPP

DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 2

Topic :- Digestion & Absorption

- 1 (a)
During starvation, *i. e.*, when food requirement of body is not fulfilled by ingested food, reserve carbohydrates is used up first by the body and after carbohydrates, fat is used as energy source and at last when both carbohydrates and fats are completely consumed, proteins are used as energy sources. Proteins are used as last because proteins are main structural component of body.
- 2 (a)
The 'islets of Langerhans' are the clusters of cells of the endocrine portion of pancreas. These contain four types of cells (i) Alpha cells (32-38%) secreting glucagon (ii) Beta cells (60-70%) secreting insulin, (iii) Delta cells secreting somatostatin and (iv) F-cells secreting pancreatic polypeptide hormone to control somatostatin.
- 3 (b)
A tooth consists of three region, *i.e.*, crown, neck and root. The exposed part, crown is surrounded by the hardest material of the body. This hardest material is enamel which is the secretion of cells of ameloblast
- 4 (c)
Liver is the largest exocrine gland. Each liver lobe is formed of hexagonal lobules surrounded by a connective tissue sheath called Glisson's capsule. Kupffer's cells of liver act as phagocytes.
- 5 (c)
peristalsis is always towards anus. This is called 'Law of gut' The peristalsis is minimum in oesophagus and maximum in duodenum (12 per min). There is no peristalsis in rectum.
- 6 (a)
Digestive enzymes are hydrolases.
- 7 (d)
Scurvy disease is caused due to deficiency of **vitamin-C**. The disease is characterized by spongy and bleeding gums, loose and falling teeth, fragility of blood vessels, bones and nervous breakdown.
- 8 (b)
Brunner's glands secrete large amount of mucus and bicarbonates to protect duodenal mucosa and to neutralize the acidic chyme. It also secretes two hormones :
(i) Secretin (ii) Cholecystokinin (CCK)
- 9 (b)
Lacteals are found in villi. These are many intestinal lymph vessels that absorb fat from digested food.
- 10 (b)
Pepsin remains active below pH 5 and became inactive at pH 5. Proteins are hydrolysed by pepsin. The optimum pH of pepsin is about 2, so it is more active in acidic medium of gastric juices. However, it remains inactivated in the basic medium, *i.e.*, above pH-7
- 11 (a)
Lacteals absorb fatty acids and glycerol in the small intestine of human. Fatty acids and glycerol are insoluble in water so, they cannot be absorbed in blood stream directly. They are first broken down into small, water soluble droplets with the action of bile salts called micelles. The later are

absorbed by the intestinal cells where these are resynthesised in the endoplasmic reticulum and are transferred in form of smaller fat droplets – chylomicrons through lacteals. Due to the dilation of intestinal lacteals lymph gets, lost into the lumen of small intestinal, which results into lymphopenia, hypoproteinemia, etc.

- 12 (a)
Cyanocobalamine or simply cobalamine (vitamin-B₁₂) deficiency causes pernicious anaemia. Vitamin-B₁₂ is required for RBCs maturation. DNA synthesis, myelin formation, etc. It acts as a co-enzyme. Its sources are fish liver, egg and milk white. It can be best obtained from *Spirulina* alga (SCP) and mutton. It is the only vitamin, which is not found in vegetables
- 13 (c)
Fats can be classified as saturated and unsaturated fats. Plant lipids contains unsaturated fatty acids, while animal lipids have saturated fatty acids. Excess intake of both saturated and unsaturated fats is responsible for increasing blood cholesterol level. So, excess of fats particularly, saturated fats should not be taken by old person and patients of heart disease and high blood pressure
- 14 (a)
Flavin adenine dinucleotide (FAD) is a coenzyme derived from riboflavin or vitamin-B₂
- 15 (b)
When food in the form of bolus reaches into the stomach by involuntary movement of muscular coat from oesophagus, it mixes thoroughly with the gastric juices present in the stomach. This thoroughly mixed food is called chyme
- 16 (a)
Pancreas is a yellowish, leaf like mixed gland which is located posterior to the stomach in abdominal cavity. It is composed of two parts namely, an exocrine part and an endocrine part. The exocrine part secretes a slightly alkaline juice, which is known as pancreatic juice. This pancreatic juice contains trypsinogen, chymotrypsinogen, and carboxypeptidase (proenzyme) and sodium bicarbonate. Pancreatic lipase, pancreatic-amylase, DNase and RNase are also present in little amount in gastric juices
- 17 (a)
The graph indicates that cholesterol is an essential dietary requirement of Khapra beetle because weigh of insect larva increases with the increase in amount of cholesterol and weight becomes static at 6 µg cholesterol/g basal diet. If the growth rate would have been directly proportional to the cholesterol concentration then the graph would have been straight line.
- 18 (b)
Throat (pharynx) can be divided into three parts, *i.e.*, nasopharynx, oropharynx and laryngopharynx. The later part loads into the oesophagus behind and into the larynx (middle portion), which is a common passage for both food and air
- 19 (c)
Horse.
Elephant, snakes and crocodile exhibits polyphyodont dentition
- 20 (b)
About 90% of the total water is absorbed in the small intestine, while balance 10% are absorbed in the stomach and large intestine. Large intestine also absorbs some minerals, drugs and products of bacterial digestion like amino acids and vitamins B-complex and vitamin-K. It secretes mucous which, lubricate faeces and facilitate its flow into the rectum, where it is stored temporarily.
Electrolytes and amino acids are absorbed in the duodenum and jejunum

ANSWER-KEY

Q.	1	2	3	4	5	6	7	8	9	10
A.	A	A	B	C	C	A	D	B	B	B



Q.	11	12	13	14	15	16	17	18	19	20
A.	A	A	C	A	B	A	A	B	C	B



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