

QB365 - Question Bank Software

October Month Syllabus - Study Materials

9th Standard

Science

Multiple Choice Question

- 1) In current electricity, a positive charge refers to,
(a) presence of electron (b) presence of proton (c) **absence of electron** (d) absence of proton
- 2) Electric field lines _____ from positive charge and _____ in negative charge.
(a) start; start (b) **start; end** (c) start: end (d) end; end
- 3) In an electrolyte the current is due to the flow of
(a) electrons (b) positive ions (c) **both (a) and (b)** (d) neither (a) nor (b)
- 4) The resistance of a conductor is R. If its length is doubled, then its new resistance will be _____
(a) R (b) 2R (c) **4R** (d) 8R
- 5) **Assertion (A)** Electric current will not flow between two charged bodies when connected if their charges are same.
Reason (R) Current is the rate of flow of charge.
(a) If both assertion and reason are true and reason is the correct explanation of assertion (b) If both assertion and reason are true but reason is not the correct explanation of assertion. (c) If assertion is true but reason is false (d) **If assertion is false but reason is true.**
- 6) Sodium having atomic number 11, ready to _____ electron/electrons to attain the nearest noble gas electronic configuration.
(a) gain one (b) gain two (c) **lose one** (d) lose two
- 7) The element that would form anion by gaining electrons in a chemical reaction is _____
(a) Potassium (b) Calcium (c) **Fluorine** (d) Iron
- 8) _____ compounds have high melting and boiling points.
(a) Covalent (b) Coordinate (c) **Ionic** (d) Coordinate
- 9) **Statement (A)** Ionic compounds do not conduct electricity in solid state.
Reason (B) The ions in ionic compounds are tightly held together by strong electrostatic force of attraction and they can not move freely
(a) **B explains A** (b) B do not explain A (c) B is wrong A (d) A is right B is wrong
- 10) **Statement (A)** : Covalent compounds are bad conductor of electricity.
Reason (B) Covalent compounds contain charged particles (ions)
(a) B explains A (b) **B does not explain A** (c) Both A & B are right (d) Both A & B are wrong
- 11) Which of the following is not a salivary gland?
(a) Sublingual (b) **Lachrymal** (c) Submaxillary (d) Parotid
- 12) Stomach of man mainly digests
(a) carbohydrates (b) **proteins** (c) fat (d) sucrose
- 13) Excretion means _____

- (a) taking in oxygen from the air and giving out carbon dioxide (b) disposal of harmful germs and worms from our body (c) distribution of digested food to the body tissues through blood (d) **removal of nitrogenous wastes generated in the body**
- 14) In the dental formula $\frac{2}{2}, \frac{1}{1}, \frac{2}{2}, \frac{3}{3}$ refers to _____
 (a) incisors (b) **molars** (c) premolars (d) canines
- 15) _____ is the smallest gland
 (a) Pancreas (b) **Sublingual** (c) Parotid (d) Submaxillary
- 16) Gastric glands do not secrete _____
 (a) renin (b) pepsin (c) **lipase** (d) none of the above
- 17) Which one of the following is an output device?
 (a) **Mouse** (b) Keyboard (c) Speaker (d) Pendrive
- 18) Which one of the following is an example for wireless connections?
 (a) **Wi-Fi** (b) Electric wires (c) VGA (d) USB
- 19) Pen drive is _____ device.
 (a) Output (b) Input (c) **Storage** (d) connecting cable
- 20) _____ plays an important role in a computer as an input device
 (a) **Keyboard** (b) Scanner (c) Printer (d) Mouse
- 21) _____ is an essential part of the computer
 (a) Keyboard (b) CPU (c) **Mouse** (d) Wi-Fi
- 22) Personal computer comes under the _____ computer.
 (a) mainframe (b) super (c) **micro** (d) super
- 23) _____ cable transmits high quality and high bandwidth streams of audio and video
 (a) VGA (b) USB (c) Data (d) **HDMI**
- 24) _____ is used to connect the speaker to the computer
 (a) **Audio jack** (b) Power card (c) Data cable (d) USB cable
- 25) _____ cable helps to establish internet connectivity.
 (a) Power card (b) Audio jack (c) **Ethernet** (d) USB

2 Marks

- 26) A bird sitting on a high power electric line is still safe. How?
Answer : Birds can sit on power lines and not get electric shocks because the electricity is always looking for a way to get to the ground (i.e.) the current is not flowing out of its body to any other material. Current flows in a loop (which means the circuit is closed). A bird sitting on a transmission line does not complete the circuit. If the same bird keeps one leg on one line and another leg or any part of its body on another line or the neutral points, then it will get burnt.
- 27) How is the small intestine designed to absorb digested food?
Answer : Ileum is the longest part of the small intestine. It contains minute finger like projections called villi (one millimeter in length) where absorption of food takes place. They are approximately 4 million in number. Internally, each villus contains fine blood capillaries and lacteal tubes.
- 28) State any two vital functions of human kidney.
Answer : 1. Maintain the fluid and electrolytes balance in our body.
 2. Regulate acid-base balance of blood.
 3. Maintain the osmotic pressure in blood and tissues.
 4. Help to retain the important plasma constituents like glucose and amino acids.

29) What is chyme?

Answer : The action of the gastric juice and churning of food in the stomach convert the bolus into a semi digested food called chyme

30) What is succus entericus?

Answer : The intestinal glands secrete intestinal juice called succus entericus which contains enzymes like maltase, lactase, sucrase, lipase etc.

3 Marks

31) Suppose, 25 C of charge is determined to pass through a wire of any cross section in 50 s, what is the measure of current?

Answer :

32) Give reasons for the following:

- Scrotum remains outside the body of human males.
- The wall of the stomach is not digested by its own enzyme.

Answer : a. The two testes lie in the respective scrotal sacs. The scrotum acts as a thermoregulator organ and provides an optimum temperature for the formation of sperms. The sperms develop at a temperature of 1-3°C lower than the normal body temperature. Hence scrotum remains outside the body of human males.
b. The wall of the stomach is protected by mucus. Hence the wall of the stomach is not digested by its own enzymes. Further the gastric enzyme pepsinogen is present only in inactive form and converted into active pepsin only when food enters the stomach

33) Why your doctor advises you to drink plenty of water?

Answer : Lot of water is needed by the body.

- It is necessary to maintain balance of fluids and electrolytes in the body.
- When muscle cells don't get enough water it results in muscle fatigue.
- Functioning of kidneys also requires lot of water.

34) What is homeostasis

Answer : The tendency of the body to seek and maintain a balance condition or equilibrium within its internal environment, even when faced with external challenges is called homeostasis

35) Name the parts of a computer

Answer : Three parts of the computer are:

- Input Unit
- Central Processing Unit (CPU)
- Output Unit.

5 Marks

36) Distinguish e.m.f and potential difference.

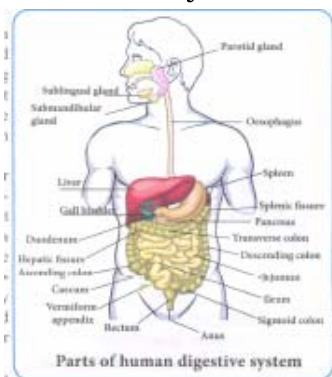
Answer : As both e.m.f and potential difference are measured in volt, they may appear the same. But they are not. The e.m.f refers to the voltage developed across the terminals of an electrical source when it does not produce current in the circuit. Potential difference refers to the voltage developed between any two points (even across electrical devices) in an electric circuit when there is current in the circuit

37) Some common symbols in the electrical circuit.

Symbol	Device	Symbol	Device	Symbol	Device
	Switch		Wires joined		galvanometer
	Cell		Wires crossed		ammeter
	Battery		Fixed resistor		Voltmeter
	D.c. power supply		variable resistor (rheostat)		Two-way switch
	A.c. power supply		fuse		Earth connector
	Light bulb		Coil of wire		capacitor
	Potentiometer		transformer		thermistor
	light-dependant resistor (LDR)		Semiconductor diode		bell

Answer :

38) Describe the alimentary canal of man



Answer :

Alimentary canal of man:

Alimentary canal is a muscular coiled, tubular structure. It consists of mouth, buccal cavity, pharynx, oesophagus, stomach, small intestine (consisting of duodenum, jejunum and ileum), large intestine (consisting of caecum, colon and rectum) and anus.

Mouth: The mouth leads into the buccal cavity. The buccal cavity is a large space bound above by the palate (which separates the wind pipe and food tube), below by the throat and on the sides by the jaws. The jaws bear teeth.

Teeth: Teeth are hard structures meant for holding, cutting, grinding and crushing the food. In human beings two sets of teeth (Diphyodont) are developed in their life time.

Each tooth has a root fitted in the gum (Thecodont). Permanent teeth are of four types (Heterodont), according to their structure and function namely incisors, canines, premolars and molars.

Dental formula represents the number of different type of teeth present in each half of a jaw (upper and lower jaw).

For Permanent teeth in each half of upper and lower jaw:

$$\frac{2, 1, 2, 3}{2, 1, 2, 3} = 16 \times 2 = 32$$

Salivary glands: Three pairs of salivary glands are present in the mouth cavity. They are: parotid glands, sublingual glands and submaxillary or submandibular glands

- Parotid glands are the largest salivary glands, which lie in the cheeks
- Sublingual glands are the smallest glands and lie beneath the tongue.
- Submaxillary or Submandibular glands lie at the angles of the lower Jaw.

Tongue: The tongue is a muscular, sensory organ which helps in mixing the food with the saliva.

Pharynx: The pharynx is a membrane lined cavity behind the nose and mouth, connecting them to the oesophagus. It serves as a pathway for the movement of food from mouth to oesophagus. Oesophagus: Oesophagus or the food pipe is a muscularmembranous canal about 22 cm length. It conducts food from pharynx to the stomach by peristalsis (wavelike movement) produced by the rhythmic contraction and relaxation of the muscularwalls of alimentary canal.

Stomach: The stomach is a wide J-shaped muscular organ located between oesophagus and the small intestine. Small intestine: The small intestine is the longest part of the alimentary canal, which is a long coiled tube measuring about 5 - 7 m. It comprises three parts duodenum, jejunum and ileum.

1. Duodenum is C-shaped and receives the bile duct (from liver) and pancreatic duct (from pancreas).
2. Jejunum is the middle part of the small intestine. It is a short region of the small intestine.
3. Ileum forms the lower part of the small intestine and opens into the large intestine. Ileum is the longest part of the small intestine. It contains minute finger like projections called villi (one millimeter in length) where absorption of food takes place. Internally, each villus contains fine blood capillaries and lacteal tubes. The small intestine serves both for digestion and absorption. It receives (i) the bile from liver and (ii) the pancreatic juice from pancreas in the duodenum.

Liver: It is the largest digestive gland of the body which is reddish brown in colour. Bile salts help in the digestion of fats by bringing about their emulsification (conversion of large fat droplets into small ones).

Pancreas: It is a lobed, leaf shaped gland situated between the stomach and duodenum. Pancreas acts both as an exocrine gland and as an endocrine gland.

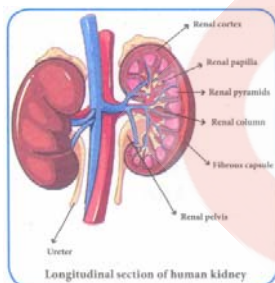
Large intestine: The unabsorbed and undigested food is passed into the large intestine. It extends from the ileum to the anus. It is about 1.5 meters in length. has three parts- caecum, colon and rectum .

The caecum is a small blind pouch like structure situated at the junction of the small and large intestine. From its blind end a finger - like structure called vermiform appendix arises. It is a vestigial (functionless) organ in human beings

The colon is much broader than ileum. It passes up the abdomen on the right (ascending colon), crosses to the left just below the stomach (transverse colon) and down on the left side (descending colon).

The rectum is the last part which opens into the anus. It is kept closed by a ring of muscles called anal sphincter which opens when passing stools.

39) Explain the structure of kidney and the steps involved in the formation of urine



Answer :

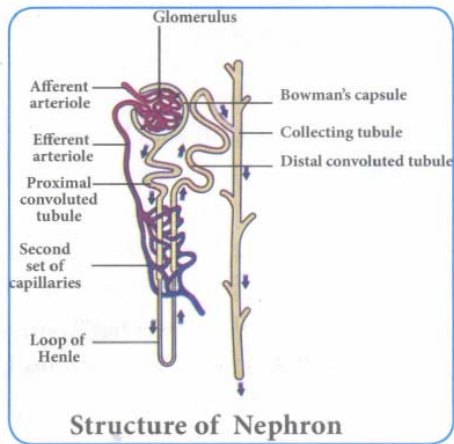
Kidneys:

- (i) Kidneys are bean-shaped organs brown in colour.
- (ii) The kidneys lie on either of the vertebral column in the abdominal cavity attached to the dorsal body wall.
- (iii) The kidney is placed lower on the left side as the liver takes up much space on the right side.
- (iv) Each kidney is about 11cm long, 5 cm wide and 3 cm thick.
- (v) Internally the kidney consists of an outer dark region, the cortex and an inner lighter region, the medulla.
- (vi) The medulla consists of multilobular conical masses called the medullary pyramids or renal pyramids whose base are adjacent to cortex.
- (vii) On the inner concave side of each kidney, a notch called hilum is present through which blood vessels and nerves enter in and the urine leaves out.

Process of Urine formation:

The process of urine formation includes the following three stages.

- (i) Glomerular filtration
- (ii) Tubular reabsorption and
- (iii) Tubular secretion



Glomerular filtration: Urine formation begins with the filtration of blood through epithelial walls of the glomerulus and Bowman's capsule. The filtrate is called as the glomerular filtrate. Both essential and non-essential substances present in the blood are filtered.

Tubular reabsorption: The filtrate in the proximal tubule consists of essential substances such as, amino acids, vitamins, sodium, potassium, bicarbonates and water that are reabsorbed into the bloody by a process of selective reabsorption.

Tubular secretion: Substances such as H^+ or K^+ ions are secreted into the tubule. Certain substances like potassium and a large number of drugs like penicillin and aspirin are passed into the filtrate in the distal convoluted tubule. This tubular filtrate is finally known as urine, which is hypertonic in man. Finally the urine passes into collecting ducts to the pelvis and through the ureter into the urinary bladder by urethral peristalsis (waves of constriction in the ureters). When the urinary bladder is full the urine is expelled out through the urethra. This process is called micturition

40) Write a note on functions of liver in digestion.

Answer : (i) It is the largest digestive gland of the body which is reddish brown in colour.

(ii) It is divided into two main lobes, right and left lobes. The right lobe is larger than the left lobe.

(iii) On the under surface of the liver, gall bladder is present. The liver cells secrete bile which is temporarily stored in the gall bladder.

(iv) Bile is released into small intestine when food enters in it. It has bile salts (sodium glycolate and sodium tauraglycolate) and bile pigments (bilirubin and biliverdin).

(v) Bile salts help in the digestion of fats by bringing about their emulsification (conversion of large fat droplets into small ones).