



ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION
Annual Examination- 2018

Sub: Life Science

Class: IX

F. M.-75

Duration: 2hrs 30mins

Date:05.11.2018

SOLUTION

All questions are compulsory

GROUP A(MULTIPLE CHOICE QUESTIONS-10 MARKS)

(1x10=10)

1. Write the answer in complete sentence by choosing the correct answer for each:

- 1.1 b. Muscles
- 1.2 a. Leech
- 1.3 a. Virus
- 1.4 d. ATP
- 1.5 c. 1
- 1.6 c. Autophytes
- 1.7 c. Rainfall
- 1.8 b. Whittaker
- 1.9 a. Heart
- 1.10 c. *Shigella*

GROUP B(VERY SHORT ANSWER TYPE QUESTIONS-22 MARKS)

Fill up the blanks with proper words (any six).

(1x6=6)

- 2.1 DNA
- 2.2 Heart
- 2.3 Ascorbic acid
- 2.4 Iron
- 2.5 Parietal cells of stomach
- 2.6 Family
- 2.7 Raynold Lindemann

State whether the following are True or False: (any five)

(1x5=5)

- 2.8 False
- 2.9 False
- 2.10 True
- 2.11 False
- 2.12 False
- 2.13 False

Match the words in column A with those which are most appropriate in column B and rewrite the correct pairing mentioning the serial number of both the column.

(1x5=5)

- 2.14 Trachea e.Spiracles
 2.15 SER d. production & synthesis of steroids
 2.16 Nucleoid b.Bacteria
 2.17 *Volvox* c.Producer
 2.18 Cardiac muscle a.Involuntary muscle

Answer the following questions in 1-2 words (any six) : (1x6=6)

- 2.19 Glycosidic bond
 2.20 PGA(Phosphoglyceric acid)
 2.21 Roundworm
 2.22 Thyroxine /Thyroid hormone
 2.23 Embden Meyerhoff Parnes
 2.24 Cerebrospinal Fluid(CSF)
 2.25 Basophil
 2.26 Tetanus

GROUP C (SHORT ANSWER TYPE QUESTIONS-18 MARKS)

3. Answer in 2-3 sentences any 9 questions out of 14 questions given below. The marks for each question is 2. (2x9=18)

- 3.1 i. Produces female reproductive cells or ovum.
 ii. Produces & secretes oestrogen & progesterone hormones.
 3.2 Plasmodesmata are direct cytoplasmic connections between adjacent plant cells for passage of materials through them.
 3.3 Phylum Porifera. Coelom-The body cavity present in animals which remains lined by mesoderm is called coelom.
 3.4 Helps promote a healthy immune system ,help make collagen protein which holds cells together.
 3.5 Energy flows from producers to different trophic levels. The law states that each organism at a trophic level can only utilize 1/10th of the total food consumed .For example a deer consuming 100 kg of food ,can utilize 10kg only.
 3.6 The microorganisms which float passively in water are called Planktons.
 3.7 Diphtheria: Causative agent :*Corynebacterium diphtheriae*
 Symptoms:thick gray coating on throat & tonsils,difficulty breathing or swallowing ,swollen lymph nodes in the neck,chill,fever.
 3.8 toxoid based vaccine-*tetanus & diphtheria*
 Live attenuated vaccine-BCG vaccine
 3.9 i. Blood connects different parts of the body. ii. Blood plasma is not formed by the secretion of the blood cells. iii. Volume of plasma is greater than the corpuscles.
 3.10 Several amino acids placed side by side bonded to each other by peptide bonds forms a peptide chain,several of which together form a three dimensional structure called proteins
 Consisting of primary,secondary,tertiary & quaternary structures.

3.11 Prokaryotic cell	Eukaryotic cell
i. True membrane bound nucleus is absent ii. Circular DNA present.	i. True membrane bound nucleus is present ii. Linear DNA is wrapped around Histone proteins

3.12 Open Circulation

Closed Circulation

<p>i. Capillaries are absent ii. Haemocoel is present iii. Heart is of primitive type.</p>	<p>i. Capillaries are present ii. Haemocoel is absent iii. Heart is of advanced type</p>
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3.13 The ability of an organism to resist a particular infection or toxin by the action of specific antibodies or sensitized white blood cells.

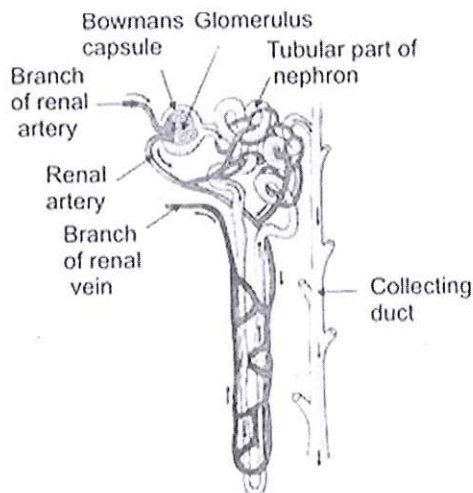
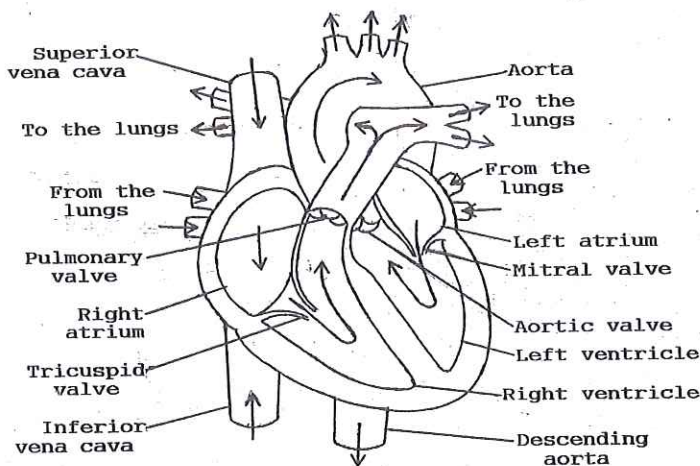
Importance of blood clotting :i. prevents excessive bleeding when a blood vessel is ruptured.
 ii. prevents entry of germs into our body.

3.14 Commensalism: An association between two organisms in which one benefits and the other derives neither benefit nor harm. Example: the remoras that ride attached to sharks and other fishes. Both remora and pilot fish feed on the leftovers of their hosts' meals.

GROUP D (LONG ANSWER TYPE QUESTION-25 MARKS)

4. Write the five questions or the alternatives given below. The mark for each question is 5. (5x5=25)

4.1



(Structure of a nephron)

4.2 ATP is called the energy currency of the cell because it is the molecule that all living organisms use for energy. Cells need energy to power the various chemical reactions that are going on

continuously, and they use ATP to store and then produce the energy for these reactions. About 32 ATP molecules are created from each molecule of glucose, and the cell stores ATP until it needs the energy. Once the energy is required, the cell breaks the bonds of one of the phosphate groups, releasing energy that the cell can use. Then the cell is left with ADP (adenosine diphosphate), which is used as part of cellular respiration to create ATP.

DNA	RNA
<ul style="list-style-type: none"> i. Deoxyribonucleic acid ii. Double stranded consisting of deoxyribose sugar iii. It is the genetic material carrying genetic information. 	<ul style="list-style-type: none"> i. Ribonucleic acid ii. Single stranded consisting of Ribose sugar iii. Helps in protein synthesis

OR

Structure of Liver: Liver is the largest internal organ & largest gland in the human body. It weighs 1.2 to 1.5 kg & has both endocrine & exocrine parts consists of a larger right lobe & smaller left lobe.

Position: It is located in the right upper quadrant of the abdomen, beneath the right side of the diaphragm & right lower rib cage.

Functions:

- i. Filters blood coming from the digestive tract before passing it to the rest of the body.
- ii. Liver also detoxifies chemicals & metabolizes drugs.

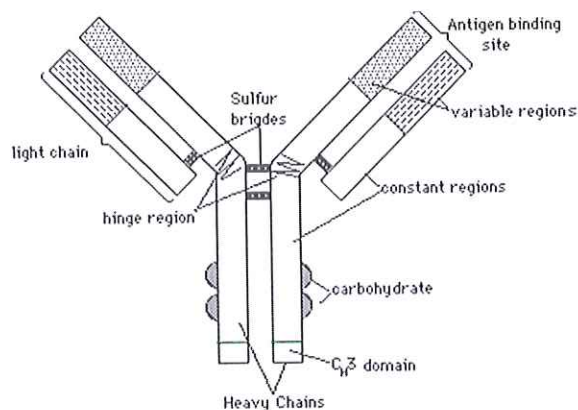
4.3 Energy Flow in Ecosystem: The process by which the solar energy is trapped by producers & modified solar energy is passed through different trophic levels of food chain is called energy flow.

Stages of energy flow:

- i. Fixation of energy by producers
- ii. Accumulation of energy by producers
- iii. Energy flow from producer to successive trophic levels.

Green plants trap solar energy & change it into chemical energy. Energy is flowing through successive trophic levels but cannot return to the solar system. It can only be reverted back after the decomposition process but can never retrace its path & go back to its source. So the energy flow is strictly unidirectional from producer to tertiary consumers.

OR



Edward Jenner is the Father of Immunology.

4.4 A balanced diet is one that gives our body the nutrition it needs in its proper proportion to function properly.

BMR is the rate of energy expenditure by humans & other animals at rest & are measured in KJ per hour per kg body mass.

Factors that affect our BMR :Age, genetics, weight, heredity, body fat percentage & gender.

OR

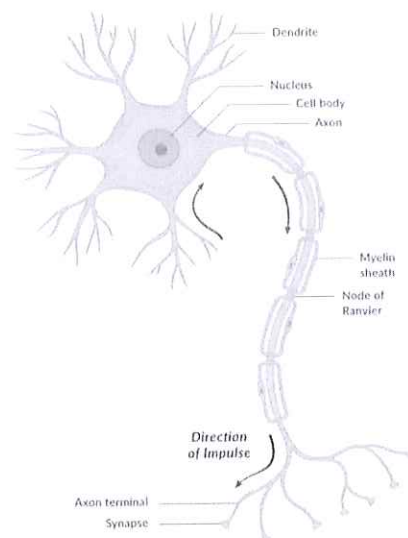
Mechanical digestion is the physical breakdown of large pieces of food into smaller pieces. This begins with the chewing of food by the teeth, & muscular mixing of food by the stomach & intestines. Saliva secreted by the salivary glands moistens the food. Bile produced by the liver is used to mechanically break fats into smaller globules.

Pancreatic amylase-Pancreas, Continues the breakdown of starch.

Trypsin-pancreas, Continues the breakdown of proteins.

Lipase-pancreas, Breaks down fats.

4.5



OR

Structure of Nervous Tissue: nervous tissue is composed of neurons (nerve cells) which consists of cell body & processes extending from the cell body (one to multiple dendrites & a single long axon) & Neuroglia which do not generate or conduct nerve impulse but have other important supporting function.

Distribution: nervous tissue is distributed in Brain, Spinal cord & Nerves.

Function: exhibits sensitivity to various types of stimuli; convert stimuli into nerve impulse (action potentials); conduct nerve impulses to other neurons, muscle fibres or glands.