

ప్రతి గురువారం సాక్షిలో ఉచితం

సాక్షి

భవిత

5-3-2015

స్వర్ణయా వర్ణితే విద్య

ఈ వారం

'కరెంట్ అఫైర్స్'

నేటి సాక్షి 'విద్య' పేజీలో...



ONLINE EDITION

www.sakshieducation.com/apbhavitha.aspx

BIOLOGY

One Mark Questions & Answers
Chapterwise Important Bits
Important Questions

10th Class

భద్రత... బాధ్యత... భరోసా...
ఇవే శ్రీగాయత్రి రెసిడెన్షియల్స్ ప్రత్యేకత!

అందుకే, బాలురైనా...బాలికలైనా...రెసిడెన్షియల్ క్యాంపస్లో చేరి ఇంటర్నల్ పాటూ, ఇంజనీరింగ్...మెడికల్...సిపి సిపిటి వంటి తాము ఎంచుకున్న ఇతర పోటీపరీక్షలలో విజయం సాధించాలనుకునే దూరప్రాంత విద్యార్థుల మొదటి ఎంపికగా నిలిచాయి శ్రీగాయత్రి రెసిడెన్షియల్స్

మూలిన నేటి ఇంటర్ విద్యావిధానానికి చిరునామా

SRIGAYATRI
EDUCATIONAL INSTITUTIONS

పూర్వ వివరాలకు www.srigayatri.com వుండు గారే లేదా 9581991018/1019 సంప్రదించండి.
 Residential: • Hyderabad: 9581991247, 9581636688 • Vijayawada: 9581991133
 • Kurnool: 9581991065 • Tirupati: 9581000419 • Nellore: 9581991179

• Hyderabad • Karimnagar • Vijayawada • Guntur • Vizag • Kurnool • Kadapa • Tirupati • Nellore

Biological Science.. Way to success



Prepared by:
S. Karunakar Reddy,
PGT - Biology.

1. NUTRITION

- The food synthesized by the plant is stored as ____.
- ____ are the sites of photosynthesis.
- Pancreatic juice contains enzymes for carrying the process of digestion of ____ and ____.
- The finger-like projections which increase the surface area in small intestine are called ____.
- The gastric juice contains ____ acid.
- ____ vitamin is synthesized by bacteria present in intestine.
- Grana are stacks of ____ membranes.
- ____ are the organisms capable of synthesizing food materials.
- The process of ____ makes plants the universal food providers
- The light reaction of photosynthesis takes place ____ of chloroplast.
- ATP and NADPH are called ____ powers.
- Finally glucose is converted to ____.
- Dark reactions occurs in ____.
- The process of taking food into the body is called ____.
- The process of converting fats into small globule like forms by bile juice is called ____.
- Vitamin B-complex and vitamin C are called ____ vitamins.
- ____ can be avoided by having plenty of roughages in the diet.
- Eating of food that does not have one or more than one nutrients in required amount is known as ____.
- Chemical name of vitamin D is ____.
- ____ are micro nutrients required in small quantities.

ANSWERS

- Carbohydrates; 2) Chloroplasts; 3) Protein, fats; 4) Villi; 5) HCl; 6) Cyanocobalamin; 7) Thylakoid; 8) Autotrophs; 9) Photosynthesis; 10) Grana; 11) Assimilatory; 12) Starch; 13) Stroma; 14) Ingestion; 15) Emulsification; 16) Water soluble; 17) Constipation; 18) Malnutrition; 19) Calciferol; 20) Vitamins.

IMPORTANT QUESTIONS

1 Mark

- Why photosynthesis is considered as the basic energy source for most of the living world?

A. All living things constantly need energy to be alive. They get the energy in the form of food. The food directly or indirectly comes from the green plants through photosynthesis. Hence photosynthesis can be considered as the basic energy source for most of the living world.

- Why is it better to call the dark phase of photosynthesis as a light independent phase?

A. The term dark reaction doesn't mean that they occur when it is dark at night. It only means that the reactions don't depend on light. Hence we call the dark phase of photosynthesis as the light independent phase.
- Why is it necessary to destarch a plant before performing any experiment on photosynthesis?

A. It is necessary to destarch a plant before performing any experiment on photosynthesis because if starch is present it may interfere with the experiment.
- What is the role of acid in stomach?

A. 1. HCl found in the stomach helps in killing harmful germs which may have come along with the food.
2. HCl creates an acidic medium which facilitates the action of enzyme pepsin.
3. Pepsin is active in the presence of HCl.
- What is the role of saliva in the digestion of food?

A. 1. Saliva is secreted by three pairs of salivary glands in the mouth.
2. Human saliva contains an enzyme called amylase (ptyalin) that converts starch into maltose (sugar).
3. The food is mixed thoroughly with saliva and moved around the mouth while chewing by the muscular tongue.
- Why do you think that carbohydrates are not digested in the stomach?

A. 1. For the digestion of carbohydrates, enzyme ptyalin or amylase are required.
2. The gastric juice produced by stomach do not contain the enzyme ptyalin or amylase. It contains only pepsin which digests proteins.
3. Hence carbohydrates are not digested in the stomach.
4. They are digested partially in the mouth and completely in small intestine.

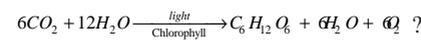
2 Marks

- Explain the necessary conditions for autotrophic nutrition and what are its by-products?
- Where do plants get each of the raw materials required for photosynthesis?
- What will happen to protein digestion as the medium of intestine is gradually rendered alkaline?
- What is the role of roughages in the alimentary track?
- How do nongreen plants such as fungi and bacteria obtain their nourishment?
- What happens to plant if the rate of respiration becomes more than the rate of photosynthesis?
- What food habits are you going to follow after reading this chapter? Why?

4 Marks

- Differentiate between a) Light reaction - dark reaction, b) Chlorophyll- chloroplast, c) Autotrophic nutrition- heterotrophic nutrition, d) Ingestion - digestion?
- Explain the process of photosynthesis as

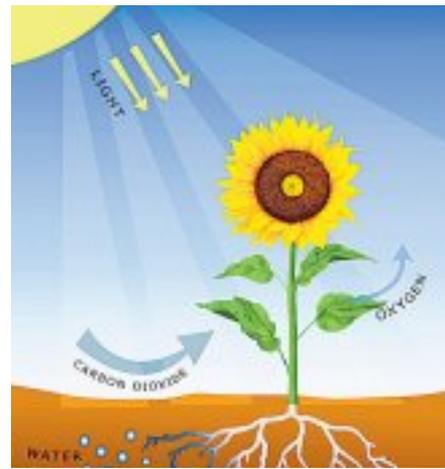
studies by you with the help of



- Explain the structure of cell organelle responsible for photosynthesis with a neatly labelled diagram?
- State in what way small intestine designed to absorb the digested food?
- How can we test the presence of starch in leaves? Explain?

5 Marks

- Draw a neatly labeled diagram of chloroplast found in leaf, and its role in photosynthesis?
- Draw the label diagram of human digestive system? List out the parts where peristalsis take place?



2. RESPIRATION

- Exhaled air contains ____ and ____.
- A flap like muscular valve controls movement of air and food is ____.
- Energy currency of the cell is called ____.
- Lenticels are the respiratory organs that exists in ____.
- Mangroves trees respire with their ____.
- The term ____ was derived from a Latin word 'respire'.
- The word 'respire' means ____.
- A textbook of 'Human Physiology' was written by ____ a renowned chemist around mid 19th century.
- ____ and ____ did a comprehensive work on properties of gases.
- The presence of ____ in exhaled air turns lime water into milky white.
- Air usually enters the body through ____.
- Air is filtered in ____ which removes dirt in the air.
- ____ is a stiff box that contains vocal cords.
- The interior lungs are divided into millions of small chambers called ____.
- A flap like valve that controls movement of food & air towards their respective passages is ____.
- ____ is important in guiding the function of epiglottis and passage of food and air.
- A flexible flattened muscle called ____ help the lungs in moving air into and of them.
- Our lungs are spongy and ____ in nature.

- Lungs are protected by two membranes called ____.
- Gaseous exchange takes place within the ____ by diffusion.
- The total lung capacity of human beings is nearly ____.
- The percentage of oxygen in inhaled air is ____.
- Oxygen combines with hemoglobin to form ____.
- ____ is present in hemoglobin and ____ is present in chlorophyll.
- In Eukaryotic cells, cytoplasm and ____ are the sites of the reactions.
- Each ATP molecule gives ____ calories of energy.
- Energy is stored in the form of ____ bonds.
- ____ is the most commonly used sugar for deriving energy in living things.
- The first stage in respiration is called ____.
- In mangrove plants, oxygen enters in, through specialized structures called ____.
- Photosynthesis is a ____ process.
- Respiration is a ____ process.

ANSWERS

- Carbon dioxide, water vapor; 2) Epiglottis; 3) ATP (Adenosine tri phosphate); 4) Wet places or marshes; 5) Aerial roots; 6) Respiration; 7) To breathe; 8) John Dapper; 9) Lavoisier, Priestly; 10) Carbon dioxide; 11) Nostril; 12) Nasal cavity; 13) Larynx; 14) Alveoli; 15) Epiglottis; 16) Nervous regulation; 17) Diaphragm; 18) elastic; 19) Pleura; 20) Lungs; 21) 5800ml; 22) 21%; 23) Oxyhemoglobin; 24) Iron, Magnesium; 25) Mitochondria; 26) 7200; 27) Phosphate; 28) Glucose; 29) Glycolysis; 30) Breathing roots; 31) Anabolic; 32) Catabolic.

IMPORTANT QUESTIONS

1 Mark

- What is respiration?

A. It is the process by which food is broken down for release of energy.
- In Latin what does the respiration mean?

A. It means "to breathe".
- What is vitiated air?

A. It is a term used to show air from which the component needed for burning had been removed.
- What is the function of epiglottis?

A. It controls the movement of air and food towards their respective passages.

In the year 1816, Rene Laennac discovered the Stethoscope. Laennac found that paper tube helps to hear the heart beat perfectly. Then he used a bamboo instead of paper tube to hear heart beat. Laennac called it stethoscope.



5. What is breathing?
- A. 1. It is the process of inhaling and exhaling.
2. The mechanism by which organisms obtain O_2 from the environment and release CO_2 is called 'breathing'.
6. What are pleura?
- A. Pleura are the two membranes that protect the lungs from injury.
7. What is cellular respiration?
- A. Oxidation of glucose or fatty acids takes place in the cells releasing energy. Hence this process is known as "cellular respiration".
8. What is main reason for feeling pain in muscles after strenuous exercise?
- A. Due to the anaerobic respiration in muscles large amounts of lactic acid accumulates and this results in muscular pain.
9. What is the full form of ATP? How is it formed?
- A. 1. ATP stands for adenosine triphosphate.
2. The energy released during respiration process is used to make an ATP molecule from ADP and inorganic phosphate[P].
10. What are the substances that are used for the production of energy in all living organisms? or What are respiratory substrates?
- A. Glucose and Fatty acids are used for the production of energy. The substances which are oxidised to liberate energy are called 'Respiratory substrates'.

2 Marks

- How does choking of wind pipe is caused by food?
- Why does the rate of breathing increase while walking uphill at a normal pace in the mountains? Give two reasons?
- Why does a deep sea diver carry O_2 on his/her back?
- Where will the release of energy from glucose in respiration take place? Mala writes lungs while Jiya writes muscles. Who is correct and why?
- How are alveoli designed to maximize the exchange of gases?

4 Marks

- Differentiate between:
 - Inspiration and expiration
 - Aerobic and anaerobic respiration
 - Respiration and combustion
 - Photosynthesis and respiration
- Write your observations in combustion of sugar activity?
- Write an experiment to prove that CO_2 is evolved during respiration?
- With the help of an experiment show that heat is liberated during respiration?

5 Marks

- Draw a block diagram showing events in respiration. Write what you understood about cellular respiration?

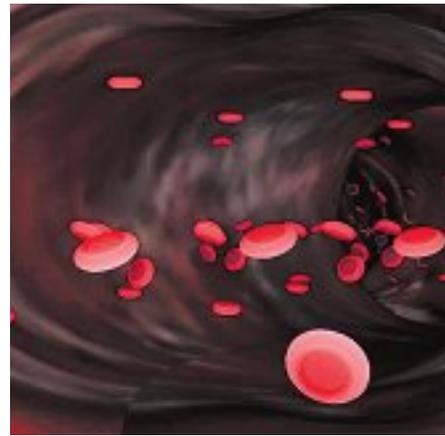
3. TRANSPORTATION

- The _____ in above cells and the _____ in below cells causes to continues column of moving water.
- If we remove all tissues from the cambium outwards _____ will not occur.
- In B.P 120/80, the numerator indicates _____.
- Hypertension is due to _____.

- In B. P 120/80 , the denominator indicates _____.
- Blood is collected from upper parts of the body by _____.
- In man, caval veins open into _____.
- The largest artery in the body of man is _____.
- The left ventricle receives _____ blood from _____ atrium.
- Right _____ pumps _____ blood to lungs.
- From the left ventricle of man _____ arises.
- Pulmonary aorta arises from _____.
- The contraction phase of the chambers of heart is _____.
- The relaxation phase of the chambers of heart is _____.
- Hemoglobin is the most efficient carrier of _____.
- In man _____ fluid present in pericardium protects the heart from injury.
- Chambers present below the atria are _____.
- The _____ atria is smallest than _____ atria.
- Heart attack is due to _____.
- Doctors measure blood pressure with the instrument called _____.
- _____ discovered blood capillaries.
- _____ end in capillaries.
- _____ start in blood capillaries.
- Valves are present in _____.
- An oak tree transpires as much as _____ liters of water per day.
- The rate of the pulse will be equal to _____.
- _____ has taken up the transporting system in Nematelminthes.
- If blood flows through heart only once for completing one circulation is called _____.
- If blood flows through heart twice for completing one circulation is called _____.
- Systolic pressure means _____.
- People who have high B.P during rest period are said to have _____.
- The enzyme released by the platelets _____.
- Thrombokinase converts _____ into thrombin.
- Thrombin acts on dissolved fibrin to form _____.
- _____ vitamin helps in the coagulation of blood.
- The evaporation of water through leaves is called _____.

ANSWERS

- Transpiration pull, root pressure; 2) Transportation of food; 3) Systolic pressure; 4) Constant strain and stress, smoking and alcohol consumption; 5) Diastolic pressure; 6) Superior vena cava; 7) Right atria; 8) aorta; 9) oxygenated, left; 10) ventricle, deoxygenated; 11) Systemic aorta; 12) right ventricle; 13) Systole; 14) diastole; 15) O_2 and CO_2 ; 16) Pericardial; 17) Ventricles; 18) Left, right; 19) The blocking of coronary artery; 20) Sphygmomanometer; 21) Marcello Malpighi; 22) Artery; 23) Vein; 24) Veins; 25) 900; 26) the number of heart beats; 27) Pseudocoelom; 28) Single circulation; 29) Double circulation; 30) strongest pressure the time blood is forced out of the ventricles; 31) Hypertension; 32) Thrombokinase; 33) Prothrombin; 34) Insoluble fibrin; 35) K; 36) Transpiration.

**IMPORTANT QUESTIONS****1 Mark**

- What is heart beat?
- A. The word heart beat represents one contraction and one relaxation of heart. The contraction phase is called systole and relaxation phase is called diastole.
- Why is there more pressure in arteries than veins?
- A. The arteries receive blood from heart. So blood pressure is more.
- The wall of left ventricle is thicker than the wall of the right ventricle. Give reason?
- A. As it pumps blood to more distant parts of



- the body (such as fingers and toes) the left ventricle is thicker than the right ventricle.
- What is transpiration?
- A. The process of loss of water from plants in the form of water vapour through stomata is called transpiration.
- How does opening and closing of stomata take place?
- A. When guard cells are filled with water, the walls of the cells are pulled away and the pores open up. When the water content is low the walls of guard cells collapse and close the stomata.
- What happens to your feet after overnight journey in sitting position without moving?
- A. Lower part of the legs gets swollen. It is clearly seen in elders.
- Why is it advised to take low amount of salt in food?
- A. Because the salt (sodium) levels will be more in accumulated water at the time of edema. If salt is not reduced, the salt levels increase.
- What precaution will be taken by edema effected people while sleeping?
- A. People with swollen feet or legs can keep the legs elevated above the level of heart while sleeping.
- What is the reason for edema?
- A. Edema may occur due to inactivity. Fluid

retention develops after fluid flows down into the lower extremities causing swelling.

2 Marks

- Which type of blood vessels carry blood away from the heart?
- Which is the largest artery in the body? Why is it big in size?
- Describe the blood vessels that carry away blood from human heart?
- What is coagulation of blood? Which type of blood cells are helpful for this?

4 Marks

- What is the relationship between blood and plasma?
- What is the use of platelets?
- Write differences between
 - Systole - diastole
 - Veins-arteries
- What is root pressure? How is it useful to the plant?
- Phloem is a food source for some animals. How can you justify this statement?
- What is your inference about experiment with aphids?
- After reading this lesson what precautions you would suggest to your elders about edema?
- Give an account of valves in the human heart?

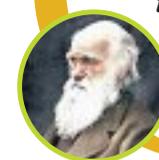
5 Marks

- Draw a block diagram to explain single and double circulation. Write differences between them?
- Prepare a block diagram showing from water absorption by roots to transpiration by leaf?

4. EXCRETION

- Earthworm excretes its waste material through _____.
- The dark colored outer zone of kidney is called _____.
- The process of control of water balance and ion concentration within organism is called _____.
- Re-absorption of useful product takes place in _____ nephron.
- Gums and resins are the _____ product of the plants.
- Bowman's capsule and glomerulus taken together make a _____.
- The alkaloid used for malaria treatment is _____.
- Renal artery brings _____ blood.
- In the L.S of kidney, the pale colored inner zone is called _____.
- _____ are the structural and functional units of the kidney.
- Squamous epithelial cells are called _____.

Charles Darwin (1809-1882) was born in England. He proposed "Natural Selection" the famous "Theory of evolution". He voyaged for five years, gathered a lot of information and evidences.



12. The first part of the renal tubule is called ____.
13. ____ leads to the ureter.
14. The peritubular capillaries join to form renal ____.
15. The ____ hormone is secreted only when concentrated urine is to be passed out.
16. Deficiency of vasopressin causes the disease ____.
17. The process of transplantation of organs from brain dead patients is called ____.
18. ____ are the excretory organs in Platyhelminthes.
19. The chemical name of tobacco is ____.
20. Latex from ____ is the source of bio diesel
21. Distal convoluted tubule opens into ____.
22. ____ secretion is active secretion.

ANSWERS

- 1) Nephridia; 2) Cortex; 3) Osmo regulation; 4) Tubular; 5) Secondary metabolic; 6) Malpighian tubule; 7) Quinine; 8) Oxygenated; 9) Medulla; 10) Nephrons; 11) podocyte cells; 12) Proximal convoluted tubule; 13) pelvis; 14) Venule; 15) Vasopressin; 16) Diabetes insipidus; 17) Cadaver transplantation; 18) Flame cells; 19) Nicotiana tobacum; 20) Jatropha; 21) Collecting tubule; 22) Tubular.

IMPORTANT QUESTIONS

1 Mark

1. What is the most poisonous of all waste products?
 - A. Ammonia is the most poisonous of all waste products of metabolism.
2. What is the meaning of excretion in Latin?
 - A. In Latin 'ex' means out, crenere means shift. Excretion is the biological process involved in separation and removal of wastes from body.
3. In which animals excretion takes place by diffusion?
 - A. In the animals belonging to the phylum Protozoa, Coelenterata and Echinodermata dissolved wastes are eliminated by diffusion through body surface.
4. What are the excretory organs in all vertebrates?
 - A. In all vertebrates kidney are the excretory organs.
5. What are the other excretory organs of human body?
 - A. Kidneys are the chief excretory organs of human body. Lungs, Skin, Liver have their own specific functions, but they carry out excretion as a secondary function.
6. How can you appreciate the 18 years old H.S. Yaswanth kumar's father for donating the organs of his brain dead son?
 - A. We can appreciate the father for his human act, where no one can accept to take or think such a decision of donating the organs of his brain dead son.
7. What are sebaceous glands? What is their function?
 - A. Sebaceous glands are also called oil glands in skin. They eliminate sebum an oily substance which contains waxes, sterols, hydrocarbons and fatty acids.
8. When was the first kidney transplantation performed?
 - A. The first kidney transplantation was performed between identical twins in 1954 by

Dr. Charles Hufnagel, a surgeon at Washington.

2 Marks

1. How are waste products excreted in amoeba?
2. What is meant by osmoregulation? How is it maintained in human body?
3. Give reasons.
 - A) Always vasopressin is not secreted.
 - B) When urine is discharged, in beginning it is acidic in nature later it become alkaline.
 - C) Diameter of afferent arteriole is bigger than efferent arteriole.
4. Differences between Excretion and secretion?
5. Imagine what happens if waste materials are not sent out of the body from time to time?

4 Marks

1. What is meant by excretion?
2. Name different excretory organs in human body and excretory material generated by them?
3. How do plants manage the waste materials?
4. Why do some people need to use a dialysis machine? Explain the principle involved in?
5. Write differences
 - A) Functions of PCT and DCT
 - B) Kidney and artificial kidney
 - C) Excretion and secretion
 - D) Primary metabolites and secondary metabolites
6. There is a pair of bean-shaped organs P in the human body towards the back, just above the waist. A waste product Q formed by the decomposition of unused proteins in liver is brought into organ P through blood by an artery R. The numerous tiny filters S present in organ P clean the dirty blood goes into circulation through a vein T. The waste substance Q other waste salts and excess water form a yellowish liquid U which goes from organ P into a bag like structure V through two tubes W. This liquid is then thrown out of the body through a tube X.
 - a) What is (i) organ P and (ii) waste substance Q.
 - b) Name (i) artery R and (ii) vein T
 - c) What are tiny filters S known as?
 - d) Name (i) liquid U (ii) structure V (iii) tubes W (iv) tube X.
7. The organ A of a person has been damaged completely due to a poisonous waste material B has started accumulation in his blood, making it dirty. In order to save this person's life, the blood from an artery in the person's arm is made to flow into long tubes made of substance E which are kept in coiled form in a tank containing solution F. This solution contains three materials G, H and similar proportions to those in normal blood. As the person's blood passes through long tubes of substance E, most of the wastes present in it go into solution. The clean blood is then put back into a vein in the person for circulation.
 - a) What is organ A?
 - b) Name the wastes substance B?
 - c) What are (i) E, and (ii) F?

- d) What are G, H and I?
- e) What is the process described above known as?
8. To keep your kidneys healthy for long period what questions will you ask a nephrologist/urologist?
9. What are the gum yielding trees in your surroundings? What procedure you should follow to collect gum from trees?

5 Marks

1. Draw a block diagram showing the path way of excretory system in human being?
2. Draw a neat labelled diagram of L.S of kidney?



5. COORDINATION

1. The largest region of the brain is ____.
2. A point of contact between two neurons is ____.
3. ____ phytohormone is responsible for cell elongation and differentiation of shoots and roots.
4. Thyroxine is responsible for ____.
5. Gibberellins and auxins promote growth in plants while abscisic acid arrests the same. Some situations are discussed here. State which hormone would be needed and why?
 - (a) A gardener wants large dahlias, he should use along with nutrients and other things ____ hormone.
 - (b) In a dwarf plant the branches have to be thickened one would use ____ hormone.
 - (c) Seeds are to be stored along time ____ hormone can help.
 - (d) Cutting the apex or tip of plants so that there are several lateral buds ____ hormones can be used.
 - (e) The part of the brain that helps you in solving puzzles is ____.
6. The brain is present in the hard bony box like structure called ____.
7. The space between the inner layers of brain is filled with fluid called ____.
8. In brain the grey matter is present on the ____ white matter is present towards ____.
9. Brain uses 20% of the whole body ____.
10. ____ maintain posture, equilibrium and muscle tone.
11. ____ controls thinking, memory, reasoning, perception, emotions and speech.
12. The functions of the left side of the body are controlled by the ____ cerebral hemisphere.
13. Parts of the brain below the cerebrum are

- together known as ____.
14. ____ is the largest part of the brain.
15. The brain of adults weights approximately ____ grams.
16. In spinal cord ____ matter is towards periphery ____ matter is towards the center of the spinal cord.
17. In 1822, Bell and Francois Magendie suggested that ____ carried messages of sensation inwards.
18. Directional movements in plants is responsible to specific stimuli are called ____ movements.
19. Growth inhibiting plant hormone is ____.

ANSWERS

- 1) Cerebrum; 2) Synapse; 3) Auxin; 4) General growth rate and metabolic rate; 5) a) Auxin, b) Gibberellin, c) abscisic acid, d) Cytokinins, e) Cerebrum; 6) Cranium; 7) Cerebrospinal fluid; 8) Periphery, center; 9) Energy; 10) Cerebellum; 11) Cerebrum; 12) Right; 13) Diencephalon; 14) Cerebrum; 15) 1300-1400; 16) White, grey; 17) Dorsal root; 18) Tropic; 19) Abscisic acid.

IMPORTANT QUESTIONS

1 Mark

1. What is synapse? How is it useful in transfer of information?
 - A. 1. Synapse is the functional region of contact between two neurons.
 2. It transmits the neural impulse between two neurons.
2. According to you what would be the function of the spinal cord?
 - A. The spinal cord is concerned with spinal reflex actions and the conduction of nerve impulses to and from the brain.
3. Are all functions of our body under direct control of the brain and spinal cord?
 - A. Yes. Spinal cord acts as a relay station receiving information from various parts of the body and sends it to the body parts. It plays a major role in reflex actions.
4. What is a reflex? How it occurs?
 - A. Reflexes are fast, immediate, automatic and involuntary responses of the body. They occur without thinking and brain is not involved.
5. According to Galen, a Greek physiologist how many kinds of nerves are there?
 - A. According to Galen, nerves are of two kinds. They are sensation and for action.
6. What forms the grey matter of the brain?
 - A. Nerve cell bodies together with capillaries form grey matter.
7. What are cranial nerves? How many cranial nerves are there?
 - A. Nerves originating from brain are called

Variations are quite apparent among closely related groups of organisms. In about 1857 Gregor Mendel started working on the problem of how variations were passed from on generation to other.



'cranial nerves' and there are 12 pairs of cranial nerves.

8. What are the systems involved in the control and coordination in animals?
- A. Nervous system and Endocrine system involved in the control and coordination in animals.
9. Name the receptors of smell and taste?
- A. The receptor of smell is olfactory receptor and taste is gustatory receptor.

2 Marks

1. How does phototropism occur in plants?
2. Give an example and explain how plants may immediately respond to a stimulus?
3. Is the structure of neuron suitable for transmission of impulses? Analyse?
4. The axon of nerve cell in hand is shorter than the axon of nerve cell in leg. Do you support this statement? Why?
5. Organs respond to the external stimulus by a fraction of second. How do you feel about such controlling mechanism of human body?
6. State whether the following actions are voluntary action, reflex action or conditioned reflex?
 - i) Blinking ii) Cleaning the table iii) Playing on the key board iv) Salivating when food is put in the mouth. v) We close our ears when we hear unbearable sound
7. What happens if all the functions of the human body are controlled only by brain?
8. Take a cock feather touch smoothly at different parts of your body. Find out which portion of the body has high sensation. Is this similar during sleeping?

4 Marks

1. Give an example of coordination in your body where both hormonal and nerves control function together?
2. Consider that you are passing by a garbage disposal area and you immediately cover your nose. Arrange the events below in a logical order by marking them from 1 to 5 to trace the events that happen in the nervous system from detection of foul smell (stimulus generation) to covering your nose (response).
 - i) At the end of the axon, electrical impulse releases chemicals
 - ii) Stimulus received on the dendritic cells of a neuron sets off chemical reaction that creates an electrical impulse
 - iii) Electrical impulse transmitted through cell body and axon
 - iv) The chemicals cross the synapse and reach the next neuron. Similarly, the electrical impulse crosses several neurons
 - v) Finally, the impulse is delivered from neuron to the gland that helps in recognition of the foul smell and muscle cells that help in covering the nose
3. Distinguish between :
 - a) Stimulus and Response
 - b) Afferent and Efferent nerves
 - c) Central nervous system and peripheral nervous system
 - d) Receptor and effector
4. Man is the most intelligent animal. What could be the fact that helped us to reach such a conclusion?
5. If you visit a doctor what doubts you would like to clarify about pancreas?

6. REPRODUCTION

1. Organisms capable of giving rise to off springs by the process of ____.
2. 'Budding' can be seen in ____.
3. Fragmentation can be seen in ____.
4. The process in which female gametes develops into zygote without fertilization ____.
5. Regeneration can be observed in ____.
6. Vegetative propagation through leaves can be observed in ____.
7. Examples for stolons ____.
8. Examples for bulbs ____.
9. Example for tuber ____.
10. Rose plants can be propagated through ____.
11. ____ method is useful in propagation improved varieties of various flower and fruits.
12. In Rhizopus, the reproduction takes place through ____.
13. External fertilization takes place in ____.
14. The major obstacle in external fertilization is ____.
15. The two testes are located in ____.
16. Vasefferentia forms ____.
17. The fluid secreted by the male reproductive system is called ____.
18. The structure of sperm cell ____.
19. The male sex hormones is called ____.
20. The secondary sexual characters are controlled by ____.
21. The life span of a sperm cell is ____.
22. The cellular bubbles in the ovary are called ____.
23. The release of ovum (or) eggs is called ____.
24. The widened funnel of oviduct is called ____.
25. The fertilized ovum attaches to the soft tissues of ____.
26. From the third month of pregnancy, the embryo is called ____.
27. Placenta is formed during ____.
28. ____ is the important structure for the nourishment of the embryo.
29. The embryo gets oxygen, nutrients by the process of ____.
30. Amniotic fluid protects the embryo from ____.
31. The membrane that originates from the digestive canal of the embryo ____.
32. The tubeless structure of allantois is called ____.
33. During birth ____ comes first.
34. During birth ____ is tied off and cut by the doctors to separate the new born baby.
35. Example for self pollination ____.
36. The agents of pollination ____.
37. Stamens contains sac like structure at its head containing small ball like structures are called ____.
38. The embryo sac of flowering plants contain ____.
39. Two polar nuclei combine to form ____.
40. The large central cell containing two nuclei are called ____.
41. DNA stands for ____.
42. The structure of DNA was discovered by ____.
43. Mitosis takes place in ____.
44. Meiosis takes place in ____.
45. The period between two cell divisions is called ____.

46. Expand AIDS ____.
47. ART centers supplies ____.
48. "ASHA" stands for ____.
49. ____ state has the highest number of HIV patients in the country.
50. Any device or drug which prevents pregnancy in woman is called ____.
51. In vasectomy, ____ is removed by surgery in males.
52. In females, a small portion of oviducts, is removed by surgical operation and the cut ends are tied this method is called ____.



ANSWERS

- 1) Reproduction; 2) Yeast and Hydra; 3) Flat worms, moulds; 4) Parthenogenesis; 5) Planaria; 6) Bryophyllum; 7) Vallisneria, strawberry; 8) Onions and corns, colocasia; 9) Potato; 10) Cutting; 11) Grafting; 12) Sporulation; 13) Fish and frogs; 14) Fertilization is controlled by nature(external factors); 15) Scrotum; 16) Epididymis; 17) Semen; 18) Flagellated structure; 19) Testosterone; 20) Testosterone; 21) 24 to 72 hours; 22) Graafian follicle; 23) Ovulation; 24) Fallopian tube; 25) Uterus; 26) Fetus; 27) 12 weeks of pregnancy; 28) Placenta; 29) Diffusion; 30) Minor mechanical injury; 31) Allantois; 32) Umbilical cord; 33) Head; 34) Umbilical cord; 35) Peafamily; 36) Insects, birds, wind, water; 37) Pollen; 38) Seven cells and eight nucleus; 39) A single fusion nucleus; 40) Polar nuclei; 41) Deoxyribonucleic acid; 42) Crick and Watson; 43) Somatic cells; 44) Sex cells; 45) Interphase; 46) Acquired Immune Deficiency Syndrome; 47) Medicines to HIV patients; 48) Accredited Social Health Activist; 49) Andhra Pradesh; 50) Contraceptive; 51) A small portion of vas deferens; 52) Tubectomy.

IMPORTANT QUESTIONS

1 Mark

1. What is placenta?
- A. Placenta is a tissue formed by the cells from the embryo and the mother. It is formed around 12 weeks of pregnancy and becomes an important structure for nourishment of the embryo.
2. Write the function of placenta?
- A. Under normal conditions there is never a direct blood flow between mother and young. The blood vascular system of two are separated by thin membrane made up of cells that allow an exchange mainly by diffusion of O₂, CO₂, nutrients and waste materials.

3. What is umbilicalcord? How is it formed?
- A. It is a tube like structure which contains the very important blood vessels that connect the embryo with placenta. It is formed when the edges of the amniotic fluids come together around the stalks of the allantois and yolk sac.
4. What did August weisman hypothesis about the number of chromosomes?
- A. In successive generations, individuals of the same species have the same number of chromosomes. In successive cell divisions, the number of chromosomes remain constant.
5. How are the male and female animals produced in the bees, ants and wasps?
- A. In the bees, ants and wasps at the time of reproduction meiosis doesn't occur and the egg can develop whether fertilised or not. Unfertilized eggs develop into monoploid offsprings that develops into males. Fertilised eggs develop into diploid offsprings that develop into females.

Other Questions

6. What is layering?
7. What is grafting?
8. What do you understand by the word stock?
9. What do you understand by the word scion?
10. What is meant by external fertilisation?

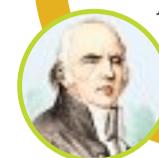
2 Marks

1. Why do fish and frog produce a huge number of eggs each year?
2. Give examples and explain what is meant by external fertilisation?
3. When the foetus is growing inside the uterus it needs nutrients. What provides these nutrients?
4. What is the job of the amniotic sac?
5. What would be the consequences if there is no meiosis in organisms that reproduce sexually?

4 Marks

1. Write difference between Asexual Reproduction – Sexual Reproduction?
2. Explain the process of fertilisation in plants?
3. What are the different modes of reproduction that doesn't produce gametes? Write them with examples?
4. What are the adaptations of sperm cells to suit their function?
5. What are the advantages of sexual reproduction?
6. Write the differences between mitosis and meiosis?
7. Vicky's father wants to grow a single plant having two desirable characters colourful flowers and big fruits What method will you suggest him and why?

Jean Baptist Lamarck (1774-1829)
proposed that the
acquired characters are passed to the offspring in the next generation.



8. How farmers grow sugarcane, flowering plants like chrysanthemum, prime rose and vegetables like stem tubers, plump gourd(dondakaya)etc.?

5 Marks

1. Draw a neat labelled diagram of male and female reproductive system of plant?
2. Draw a neatly labelled diagram of explain plant fertilisation. Write few points on pollen grain?

7. COORDINATION IN LIFE PROCESSES

1. 3:2:1:2 the ratio of our dentition. Here 1 represents ____.
2. Large protein molecules are broken down into ____ of digestive track.
3. ____ is the strong acid which is secreted during digestion.
4. Olfactory receptors present in ____ trigger signals to brain.
5. pH of saliva is ____ in nature.
6. Fill in the blanks with suitable words given below

Fluctuations of hormone (i) ____ levels results in sensation of hunger and motivation of consuming food. When you feel your stomach is full and there is no need of food any more. Another hormone (ii) ____ that gets secreted suppresses hunger. When we take food into the mouth it has to be chewed thoroughly. For this purpose the (iii) ____ Muscles help in chewing actions, while the (iv) ____ muscles of the Jaw moves the Jaw up, down, forward and backward during food mastication. The (v) ____ nerve controls the muscles of the jaw under the action of (vi) ____ nervous system saliva are released by the salivary glands moistens the food to make chewing and swallowing easier. The salivary (vii) ____ in the saliva breaks down the starch into sugar. As a result of chewing the food is transported into the oesophagus by the action of swallowing which is coordinated by the swallowing centre in the (viii) ____ and the (ix) ____ the tongue which is gustatory recognizes the taste and (x) ____ nerve plays an important role in sensation of taste.

Choose the right ones

- (i) Leptin, Ghrelin, Gastrin, Secretin
 - (ii) Ghrelin, Leptin, Secretin, Gastrin
 - (iii) Deep muscles, surface muscles, circular muscles, striated muscles
 - (iv) Surface muscles, deep muscles, neck muscles, long muscle.
 - (v) Fifth cranial nerve, second cranial nerve, fifth facial nerve, spinal nerve.
 - (vi) Central nervous system, peripheral nervous system, autonomous nervous system.
 - (vii) Lipase, Sucrose, Galactose, Amylase
 - (viii) Medulla oblongata, cerebrum, brain stem, 7th cranial nerve.
 - (ix) Pons varolii, brain stem, medulla oblongata, mid brain.
 - (x) 6th cranial nerve, 5th cranial nerve, 10th cranial nerve, optic nerve
7. Ghrelin is secreted from ____.
 8. ____ play a major role in carrying the hunger pangs.
 9. Increase of ghrelin levels result in ____.

10. The sense of taste is carried to the brain for analysis only after ____.
11. The food in the mouth has been broken down in small pieces to ____.
12. Teeth helps in the process of ____.
13. The teeth which have sharp and pointed edges are ____.
14. ____ have blunt and nearly flat surface.
15. ____ muscles help in the movement of jaws.
16. ____ muscles help in pushing the food into the mouth.
17. Starch is broken down into maltose and dextrose by the action of ____.
18. Swallowing is coordinated by ____.
19. pH beyond 7 is known as ____.
20. pH below 7 is known as ____.
21. pH 7 is known as ____.
22. ____ litres of saliva is secreted daily.
23. ____ acts as lubricant in the oesophagus.
24. Belching and burning sensation of stomach is due to ____.
25. Partially digested food in stomach ____.
26. Reverse peristalsis can be seen in ____.
27. The time taken for complete digestion is ____.
28. ____ counters the action of acid in stomach.
29. ____ increase the area of absorption in the intestine.
30. Chyme initiates the production of hormones like ____.
31. The last part of the alimentary canal ____.
32. The dental formula of man is ____.

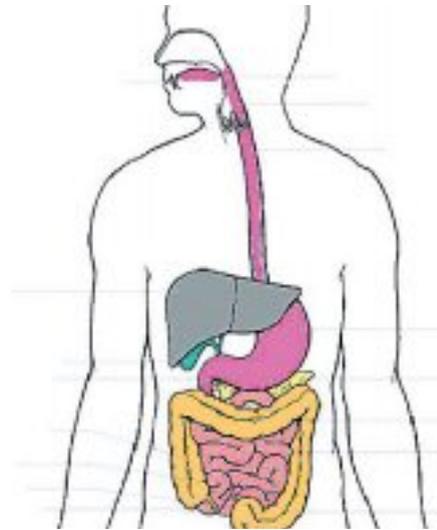
ANSWERS

- 1) Canine; 2) Stomach; 3) HCl; 4) Nose;
- 5) Alkaline; 6. i) Ghrelin, ii) Leptin, iii) Circular muscles, iv) Surface muscles, v) Cranial, vi) Autonomous nervous system, vii) Amylase, viii) Brain stem, ix) Medulla oblongata, x) Olfactory;
- Choose in right ones Ans:** 2, 6, 7, 9, 10; 7) The wall of the stomach; 8) Diencephalon and vagus nerve; 9) Sensation of hunger and motivation to consume food; 10) The dissolved food touches the taste bud; 11) Increase the area for action of enzymes; 12) Mastication; 13) Canines; 14) Molars and premolars; 15) Surface; 16) Circular; 17) Ptyalin; 18) Medulla oblongata and brain stem; 19) Alkaline; 20) Acidic; 21) neutral; 22) 1 to 1.5 liters; 23) Mucus; 24) Secretion of HCl; 25) Chyme; 26) Ruminants; 27) 30-40 hrs; 28) Mucus; 29) Villi; 30) Secretin, Cholecystokinin; 31) Rectum; 32) 2123/2123.

IMPORTANT QUESTIONS**1 Mark**

1. Suggest any two important habitual actions to your friend while eating food keeping in view of this chapter?
 - A. I will suggest my friend the following precautions while eating food.
 - 1) Do not swallow food without chewing properly.
 - 2) Do not eat food in a hurry and hectic manner.
 2. What is the use of saliva in our mouth?
 - A. 1) Saliva maintains alkaline medium that helps digestion in stomach.
 - 2) Saliva moistens the food to make chewing and swallowing easier.

3. What are the functions of the tongue?
 - A. Tongue is not only gustatory in function but also performs different functions including shifting and mixing the food in the oral cavity and swallowing.
4. How can we recognize the taste?
 - A. Taste can be identified easily only when the tongue is pressed against the palate.
5. What hormones are related to the hunger?
 - A. 1. The 'ghrelin' hormone is secreted in the stomach is responsible for hunger generating sensation.
 2. 'leptin' hormone suppresses hunger.
6. Name the muscles that help in peristalsis?
 - A. Circular muscles and longitudinal muscles of oesophagus will help in peristalsis.
7. What is meant by retropulsion?
 - A. Small amounts of chyme is pushed into the duodenum simultaneously forcing most of it back into the stomach, which is known as 'retropulsion'.

**Other Questions**

8. What is the main function of villi?
 9. What are the system involved in the process of digestion?
 10. What is meant by 'grinding'?
- 2 Marks**
1. What do you mean by hunger pangs ?
 2. What are the organ systems involved in digestion of food which we eat ?
 3. Rafi said smell also increase our appetite can you support this statement. How ?
 4. What is mastication? Explain the role of different sets of teeth in this process?
 5. Is there any reason for the intestine to be coiled with many folds. In what way it is helpful during the process of digestion?
 6. How are taste and smell related?
 7. Explain the importance of mucus on the walls of food pipe?
 8. The mere smell or sight of food stimulates hunger. Comment?
 9. How do you appreciate stomach as a churning machine. How does this coordination go on?

4 Marks

1. Write a note on peristalsis and sphincter function in stomach?
2. Give reasons.
 - a) If we press tongue against the palate we can recognise taste easily.
 - b) We can't identify taste when food is very hot.
 - c) If glucose level falls in blood we feel hungry.

- d) Small intestine is similar to a coiled pipe.
 - e) Urination increases when we take lot of fluids
 - f) The process of digestion goes on in a person whose central nervous system has been largely affected
3. Write difference between the following?
 - a) bolus - chyme
 - b) small intestine - large intestine
 - c) mastication - rumination
 - d) propulsion - retropulsion
 4. How can you say that mouth is a munching machine?
 5. What is the function of peristalsis in these parts?
 - a) oesophagus
 - b) stomach
 - c) small intestine
 - d) large intestine
 6. How can you justify the enteric nervous system as the second brain of the gut?
 7. Rajesh feels hungry upon seeing food. Sheela says no to food as she is not hungry. What makes Rajesh hungry and what suppresses Sheela's hunger?
 8. List out the sphincter muscles of the food canal you have observed and give a brief description?
 9. What happens if salivary ducts are closed?

5 Marks

1. Draw a neatly labelled diagram showing peristaltic movement in Oesophagus. Explain the importance of mucus on the walls of food pipe?
2. Draw a schematic diagram of villus in small intestine. Explain how digestive system coordinate with circulatory system?

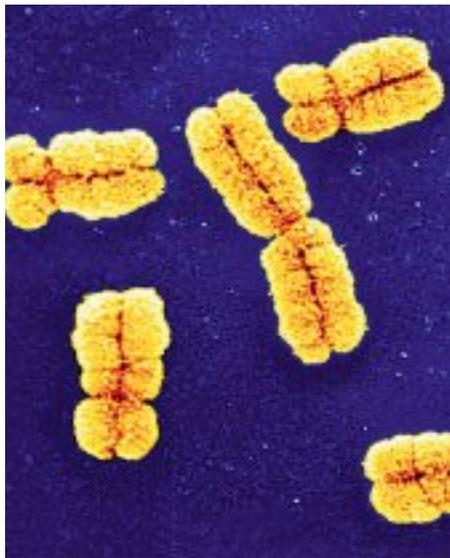
8. HEREDITY

1. The process of acquiring change is called ____.
2. ____ number of vestigial organs are present in human beings.
3. The four characters observed in the experiments on law of independent assessment are ____.
4. If we cross pollinate red flower plant with white flower we will get ____ percent of mixed color plants.
5. TT or YY, Tt or Yy are responsible for a ____ character.
6. Female baby having 23 pairs of autosomes at the age of 18 years she has ____ number of autosomes and ____ sexchromosomes.
7. The population grows in ____ progression whereas food sources grown in ____ progression.
8. A goat which walks properly can't live for a long time, according to Darwin this represents ____.

Lavoisier found that the air that we breathe out precipitated lime water while that after heating metal did not. He also found that something even beyond lungs occurred to produce carbon dioxide (knew it as fixed air) and body heat.



9. Forelimb of whale for swimming whereas in horse it is used for ____.
10. The study of fossils is called ____.
11. The dihybrid ratio is ____.
12. "Laws of inheritance" was proposed by ____.
13. Mendel did his experiments in ____ garden.
14. Mendel choose ____ pair of contrasting characters for his study.
15. The life cycle of a pea plant is ____.
16. The modern name for 'Factor' ____.
17. Passing of characters from parents to offspring is called ____.
18. The process in which traits are passed from one generation to another generation is called ____.



19. ____ is a segment of DNA which is present on the nucleus of each cell.
20. The detailed structure of DNA was discovered by ____.
21. The structure of DNA ____.
22. Each human cell contain ____ pairs of autosomes.
23. Y chromosome is present in ____.
24. ____ discovered sex chromosome.
25. Setton and Morgan conducted experiments on ____.
26. Variations are developed during ____.
27. Change in ____ tissue cannot be passed on to the DNA.
28. 'Inheritance of acquired Characters are proposed by ____.
29. ____ conducted experiments on rat to prove the Lamarck theory was wrong.
30. Charles Darwin voyaged in the ship named ____.
31. Darwin was influenced by ____ theory.
32. The book of Darwin is ____.
33. Alfred Russel Wallace done his studies in ____.
34. Darwin and Wallace jointly published an article in the ____.
35. Structurally different but functionally similar organs are called ____.
36. Structurally similar and functionally different organs are called ____.
37. Connecting link between reptiles and birds ____.
38. Ketosis fossil which lived 160 million years ago was obtained in ____.
39. The study of human evolution ____.
40. The scientific name of man ____.
41. Moving Museum of Vestigial organs ____.

ANSWERS

- 1) Evolution; 2) 180; 3) Yellow, Ro-und green, wrinkled; 4) 50% Heterozygous; 5) Allele; 6) 22, 01; 7) Geometrical, Arithmetic; 8) Survival of the fittest; 9) Running; 10) Palaeontology; 11) 9:3:3:1; 12) Gregor Mendel; 13) Monastery; 14) 7; 15) One year; 16) Gene; 17) Heredity; 18) Inheritance; 19) Gene; 20) Francis Crick and James Watson; 21) Double Helix; 22) 22; 23) Gametes produced; 24) Setton and Morgan; 25) Drosophila; 26) Reproduction; 27) Non-reproductive; 28) Jean Baptist Lamarck; 29) August Weismann; 30) HMS Beagle; 31) Malthus; 32) The origin of species in 1859; 33) Indonesian islands; 34) Journal of Linnaean Society about Natural selection; 35) Analogous organs; 36) Homologous organs; 37) Archaeopteryx; 38) Yamanapalli of Adilabad dist; 39) Anthropology; 40) Homo sapiens; 41) Man.

IMPORTANT QUESTIONS

1 Mark

1. What are variations?
- A. Differences in characters within very closely related groups of organisms are referred to as "variations".
2. What are genes?
- A. Genes are the factors which are responsible for character or trait of an organism. These are units of heredity that is transferred from parent to offspring. These are the segments of nucleic acid 'DNA' which is present in the nucleus of every cell.
3. What is allele?
- A. The part of the genes which are responsible for character is called "allele".
4. What are homozygous alleles?
- A. Homozygous alleles are the same alleles, either both dominant or both recessive.
Ex. TT, tt
5. What is a heterozygous allele?
- A. Heterozygous allele is that which has both dominant gene and recessive gene
Ex. Tt

Other Questions

6. What is heredity?
7. What is inheritance?
8. What are autosomes?
9. What are autosomes?
10. What are homologous organs?

2 Marks

1. What are variations? How do they help organism?
2. One experimenter cut the tails of parent rats, what could be the traits in offspring? Do the daughter rats contain tails or not? Explain your argument?
3. What are the characters Mendel selected for his experiments on pea plant?
4. How do scientists utilize the information about fossils?
5. Mendel selected a pea plant for his experiments. Mention the reasons in your point of view?
6. If the theory of inheritance of acquired characters proposed by Lamarck was true how will the world be?
7. What is your understanding about survival of the fittest. Give some situations or

examples that you observe in your surroundings?

8. Male is responsible for sex determination of baby – do you agree? If so write your answer with a flow chart?

4 Marks

1. What are variations? How do they help organisms?
2. In a mango garden a farmer saw one mango tree with full of mango fruits but with a lot of pests. he also saw another mango tree without pests but with few mangoes. But the farmer wants the mango tree with full of mango fruits and pest free. Is it possible to create new mango tree which the farmer wants? Can you explain how is it possible?
3. What is the law of independent assortment? Explain with an example?
4. How sex determination takes place in human? Explain with example?
5. Explain the Darwin's theory of evolution 'Natural selection' with an example?
6. **With the help of given information write your comment on evidences of evolution.**
Mammals have four limbs as do birds, reptiles and amphibians. The basic structure of the limbs is similar, though it has been modified to perform different functions.
7. In a forest there are two types of deers, in which one type of deer can run very fast. Whereas second type of deer cannot run as fast as the first one. Lions, Tigers hunt deers for their food. Imagine which type of deers population is going to be eliminated and why?
8. One student (researcher) wants to cross pure tall plant (TT) with pure dwarf (tt) plant, what would be the F₁ and F₂ generations? Explain?
9. Explain monohybrid experiment with an example in which law of inheritance can we understand? Explain?

9. OUR ENVIRONMENT

1. The energy in the ecosystem flows in the form of ____.
2. Food web ends at ____.
3. Domination of herbivores can be seen in ____.
4. Cacti and thorny bushes are examples for ____ plants.
5. Lianas are ____.
6. Ecological pyramids were proposed by ____.
7. Producers are occurred in a ecological pyramid at ____.
8. Position of top carnivores in a ecological pyramid is at ____.
9. ____ is vital in the absorption of solar energy.
10. Light energy is converted into ____ energy in photosynthesis.
11. Anaerobic decomposition of buried dead organism head to the formation of ____.
12. The fewer steps in the food chains, the ____ will be the species at the top.
13. ____ are undigested animal food.
14. The bio mass of each tropic level is always less than ____.
15. Minamata disease is caused due to ____.
16. 10% law was introduced by ____.

17. Bio magnification is due to ____.
18. Bio magnification is high in ____.

ANSWERS

- 1) chains; 2) Tertiary consumers; 3) Grassland ecosystem; 4) Xerophytic; 5) Woody vines with stems that climb up and hand down from trees; 6) Chester Elton; 7) the base; 8) The top; 9) Chlorophyll; 10) Chemical; 11) Fossil fuels; 12) More energy; 13) Hair, Feathers, cartilage, bone; 14) the tropic level below; 15) Pollution of mercury; 16) Lindeman; 17) Non bio-degradable pesticides; 18) Top carnivores.

IMPORTANT QUESTIONS

1 Mark

1. Prepare slogans to promote awareness in your classmates about ecofriendly activities?
- A. 1. Save energy- Save Lives
2. 'No' to bikes and cars – 'Yes' to cycle.
3. Encourage Friendly insects – discourage toxic pesticides
4. Bioremediation– Saves our future generation.
2. If you want to know more about flow of energy in an ecosystem, what questions do you ask?
- A. 1. What is ecological efficiency?
2. What is the difference between Gross ecological efficiency and Net ecological efficiency?
3. Why does the flow of energy in a food chain is unidirectional?
4. What is the significance of 10% Law?
5. How does a food chain represent the flow of energy?

2 Marks

1. What happens to the amount of energy transferred from one step to the next in a food chain ?
2. Suggest any three programmes for prevention of soil population in view of avoiding pesticides?
3. Should we use pesticides as they prevent our crop and food from pests or should we think alternatives? Write your view about this issue and give sound reason for your answer?
4. What is a topic level? What does it represent in an ecological Pyramid?

4 Marks

1. What do pyramids and food chain indicate in an ecosystem ?
2. Write a short note on pyramid of number for any food chain. What can we conclude from this pyramid of numbers?
3. What is biomass? Draw a pyramid of biomass for the given food chain?

In 1852 a German Scientist, Robert Remak, published his observations on cell division, based on his observations of embryos. This was one of the first attempts to understand the mechanism of cell division.



- i) grass leaves ii) herbivores
iii) predators iv) hawk
- How is using of toxic material affecting the ecosystem? Write a short note on bioaccumulation and biomagnifications?
 - What will happen if we remove predators from food web?

5 Marks

- Draw a pyramid of numbers considering yourself as a top level consumers?

10. NATURAL RESOURCES

- _____ plants are used for production of bio fuel.
- Bio diversity is important for more than just food and for _____ also.
- Example for non renewable resource is _____.
- _____ is the alternative method to prevent ground water depletion.
- Cultivation of paddy is suitable for _____ areas.
- Bishnoi community belongs to _____ state.
- The purpose of percolation tank is _____.
- In India the rain depends upon _____.
- _____ % of fresh water is available as surface water.
- _____ % of saline water is present on the earth.
- Total water available in A.P. _____.
- Major source of irrigation _____.
- Actually, bamboo is a type of _____.
- _____ number of species could be losing from the earth every year.
- _____ number of species are utilizing as medicines.
- Plastic and synthetic rubber are made from _____.
- The percentage of nuclear energy consumption in India _____.

IMPORTANT CONCEPTS

- Photosynthesis is a process by which green plants containing chlorophyll, produce food substances [glucose & starch] from CO₂ and H₂O using light as source of energy and release O₂ into atmosphere.
- In 1648, Von Helmont of Belgium, found that water was essential for the increase of plant mass.
- In 1770, Joseph Priestly revealed the essential role of air in the growth of plants. He discovered O₂ in 1774, but the name oxygen was coined by Lavoisier in the year 1775.
- In 1779, Jan Ingenhousz, a Dutch, experimentally proved that in bright sunlight, gas bubbles were formed around the hydrilla plant and it was Oxygen.
- In 1883, Julius Von Sachs found that chlorophyll is present in the chloroplast.
- In 1954, Daniel I. Arnon extracted chloroplast from plant cells, which could carry the photosynthesis.
- Saliva secreted by three pairs of salivary glands contains an enzyme amylase (ptyalin), which helps down in the breakdown of complex carbohydrates to simple ones.
- Vitamins are micro nutrients required in small quantities. They are water soluble (B complex, Vitamin C) and fat soluble (Vitamin A, D, E and K).
- Respiration is a process by which food is

- Expand MTR _____.
- Mining activity destroy _____.
- Expand IUCN _____.
- Expand ONGC _____.
- A rich source of natural gas in A.P. _____.
- Example for water harvesting structures _____.

ANSWERS

- Jatropha; 2) Life; 3) Petrol; 4) Water shed; 5) Delta; 6) Rajasthan; 7) Harvesting rain water; 8) Monsoon; 9) 0.01; 10) 97; 11) 3814 thousand million cubic feet (TMC); 12) Ground water; 13) Grass; 14) 200 to 1,00,000; 15) 50-70 thousand; 16) Petroleum; 17) 1%; 18) Mountain top removal mining; 19) Soil, plant and animal habitats; 20) The international union for conservation of nature; 21) Oil and natural Gas Corporation; 22) K G Basin; 23) Check dams, per collation tanks, contour trenches etc.

IMPORTANT QUESTIONS**1 Mark**

- Crop selection and cultivation should be based on availability of water. Prepare a slogan to make aware of farmers about this?
 - "Select the crop – Based on availability of water"
"Harvest rain water – It will enhance your crop yields"
- What happens if we damage a forest resource?
 - The benefits of development need to be weighed against the harm to animals that may be forced to find new habitats. If we damage the forest resource indiscriminately, the depletion of resources occur and we may have to face problem for water and

broken down by release of energy.

- Oxygen is carried in the blood by binding to haemoglobin which is present in the red blood cells.
- Each ATP molecule gives 7200 calories of energy. This energy is stored in the form of phosphate bonds.
- During daytime, the rate of photosynthesis is usually higher than that of respiration while at night it is just reverse in most plants.
- In human beings the transport of materials such as oxygen, carbon dioxide, food and excretory product is a function of the circulatory system.
- Heart is the vital organ of human beings and it is the beat of the heart that makes us alive. The size of our heart is approximately the size of our fist.
- William Harvey dissected the hearts of dead people and studied the valves between each atrium and its ventricle and noticed they were one way walls.
- Marcello Malpighi with the microscope saw the tiny blood vessels and identified that smallest arteries and veins were connected by very fine blood vessels called capillaries.
- Doctors measure the blood pressure with a device called sphygmomanometer.
- The normal BP of a healthy person is 120/80 mm of Hg, of which the numerator indicates systolic pressure while the denominator indicates diastolic pressure.

timber in future.

Other Questions

- What is sustainable development?
- What are the other products made from petroleum?
- What are the alternate sources of energy?
- What are fossil fuel?
- What is IUCN? How is it planning to protect wildlife and habitats?

2 Marks

- What are effects of deforestation?
- Give an example of recycling of paper by the people? What is use of recycling of paper?
- What are the causes for soil erosion?
- What is Biodiversity?
- What are three R's mantra to save the environment?

4 Marks

- The BP statistical Review of World Energy in June measured total global oil at 188.8 million tonnes, from proved oil resources at the end of 2010. This is only enough for oil to last for the next 46.2 years. What measures should be taken to conserve oil? What will happen if we do not conserve it?
- Here is a news strip, read it carefully and answer the following questions.**
Villagers oppose sand mining project Santhabommali (Srikakulam): People of more than 20 villages in two mandals of Srikakulam have raised a banner of revolt against the proposed beach sand mining project by a private company and threatened to intensify their agitation if the government does not cancel the project. The sand mining is being taken up to extract rich minerals from the area. The villages are located around the forest belt were

mining was initiated.

- Do you think the villagers are doing a right thing to agitate? Why?
 - What resources are the villagers trying to save by their agitation?
 - Will the villagers be benefitted by the rich minerals extracted from sand?
 - Why does the private company want to carry out mining in the area?
 - Does the government have any role to play?
 - How will mining in that piece of land affect people of the area?
- What is sustainable development? How is it useful in natural resource management?
 - Suggest some ways of reusing a resource in your locality?
 - Why should we conserve forests and wild life?
 - Suggest some approaches towards the conservation of forests?
 - Natural resources decreased more rapidly. Guess what will be the consequences?
 - Prepare a questionnaire to conduct interview the petrol filling station personnel about consumption of fossil fuels?
 - Prepare model for rain water harvesting or energy saving or soil management, that reflect your innovative thoughts?
 - You might have heard the Natural Gas drillings near Kakinada by ONGC (Oil and Natural Gas Corporation). Collect information and prepare a note on the status of Gas production at basin?
 - Proper utilization of natural resources is the way to show gratitude to our nation. Can you support this statement? Give your argument?
 - Prepare a questionnaire with the help of your friends on different ways in which water is used?

juice and succus entericus.

- Respiration is controlled by the medulla oblongata of the autonomous nervous system.
- In about 1857, Gregor Johann Mendel started working on the problem of how variations are passed from one generation to another. He had chosen pea plants consisting of 7 distinguishing forms: flower colour, position, seed colour, shape, pod colour, pod shape, stem length.
- Law of dominance states that, among a pair of alleles for a character, only one expresses itself in the first generation, as one of the allele is dominant over the other.
- Each human cell contains 23 pairs of chromosomes. Out of these, 22 pairs are called autosomes and one pair is called allosomes.
- Fossils are the evidence of ancient life forms or habitats which have been preserved by the natural processes.
- The world of living things is termed as "Biosphere"
- The main climatic influences which determine these ecosystems are rainfall, temperature & the availability of light from the sun.
- By 2025, 1.8 billion people will be living in countries or regions with absolute water scarcity.
- Scientists are exploring alternatives to fossil fuels. They are trying to produce renewable biofuels to power cars and trucks.
