

1.NUTRITION

1 Marks Questions

1. which enzymes acts on Carbohydrates ?

Ans: Ptyalin, Amylase, Sucrose, lactose enzymes acts on carbohydrates and convert into glucose molecules

2. Which enzymes acts on Proteins ?

Ans: pepsin, trypsin, peptidases enzymes acts on Proteins and convert them into Aminoacids .

3. Give examples for saprophytic organisms ?

Ans: Bread moulds, Yeast, Mushrooms etc..are the saprophytic organisms.

4. Name three end products of photosynthesis ?

Ans: Carbohydrates (C₆H₁₂O₆), water(H₂O), oxygen(O₂).

5. What is the role of acid in Stomach?

Ans - Hydrochloric acid is secreted by the walls of stomach .
- It helps in killing harmful germs which may have come along with food
- The enzyme pepsin which digest proteins active in the presence of Acid.

6. Under what conditions does a patient need to become a drip of glucose? How does the glucose help the patient to recover ?

Ans:- when the patient cannot consume the food orally need to be a drip of glucose.
- Glucose provides energy for regular life process of patient.
- The patient gets stamina to better its condition and this process continues. Soon the patient recovers from the ill state

7. what is meant by “Chyme”?

Ans : **partially** digested food in the stomach is known as Chyme.
- chime is a soft slimy substance of food in which some proteins and carbohydrates have broken down.

8. What is emulsification ?

Ans : Fats are digested by converting them into small globule like forms by the help of bile juice secreted from liver. This process is called emulsification.

9. What is the equation to show the process of photosynthesis ?

Ans: $6\text{CO}_2 + 12\text{H}_2\text{O} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2 \uparrow$

10. What are the resources for Vitamins ‘C’

Ans : - Green leafy vegetables ,sour tasted fruits, sprouts are the main sources of vitamin ‘C’.
- It is abundantly available in the guava with low cost .

11. Define the term “photosynthesis” .

Ans: photosynthesis is a photo chemical reaction in which plants prepare food from water and carbon dioxide in the presence of chlorophyll and sunlight. .

12. What is photolysis of water?

Ans: - Chlorophyll becomes activated by absorbing the Photons.

- Activated chlorophyll split the water molecule into two ions named hydrogen ion (H⁺) and hydroxyl ion(OH⁻)

-- This process is called photolysis of water.

13.what are the main stages in the digestion of food ?

Ans: there are 4 main stages in the digestion food-1.Ingestion

2.Digestion3.Absorption 4.Defecation

2 Marks Questions

14. Write differences between Autotrophic nutrition and Heterotrophic nutrition?

Ans:

Autotrophic nutrition	Heterotrophic nutrition
<ul style="list-style-type: none">- It means that the organism prepare its own food- Here simple inorganic substances are converted into complex organic molecules.- There are chloroplasts in the Cell- Here light energy is converted into chemical energy.- Here there is no specific digestive system- Eg: Green plants & certain bacteria	<ul style="list-style-type: none">- It means that the organism does not prepare its own food and is dependent on other organisms for food- Here complex organic molecules are served as food.- There are no chloroplasts in the Cell- Here light energy is not involved- Here there is specific digestive systemEg: All animals

15.write difference between Light reaction and Dark reaction.

Ans:

Light reaction	Dark reaction
<ul style="list-style-type: none">- In this reaction light plays key role- It is photo chemical phase- It occurs in the grana of the chloroplast- ATP,NADPH are formed.- Electron receptors are involved in the reaction- Water molecules be breakdown.- End products are oxygen,ATP and NADPH- This phase was explained by Hill	<ul style="list-style-type: none">- In this reaction light is not necessary- It is biosynthetic phase- It occurs in the stroma of the chloroplast.- ATP,NADPH are consumed- Enzymes are involved in the reaction.- Water molecules are formed-End product is glucose- This phase was explained by Calvin

16.If there were no green plants ,all life on the earth would come to end ! comment

Ans:-- All living organisms take complex organic compounds as food for the energy.

- only green plants can prepare complex organic compounds from simple inorganic molecules (CO_2 , H_2O) in the process of photosynthesis.
- These complex organic compounds are transfer from green plants to herbivores ,herbivores to carnivores in the form of food for energy.
- Saprophytes obtain the food from **dead bodies of** organism and waste of the organisms.
- oxygen, which is necessary for respiration for all living organisms is released from only green plants.
- so, we can comment that **there were no green plants ,all life on the earth would come to end .**

17. why is it necessary to destarch a plant before performing any experiment on photosynthesis ?

Ans: - Starch is important end product of the process of the photosynthesis.

- so, it is evidence for the process of the photosynthesis.
- If starch is present it may interfere with the result of the experiment
- So,it is necessary to destarch a plant before performing any experiment on photosynthesis .

18. Why it is not possible to demonstrate respiration in green plant kept in sunlight ?

Ans: - Generally, green plants releases O_2 and absorb CO_2 in the process of photosynthesis and they absorb O_2 and releases CO_2 in the process of Respiration.

- In the presence of sun light both process photosynthesis and Respiration take place at the same time.
- It results the O_2 released from photosynthesis is absorbed in the process of Respiration and the CO_2 released from Respiration absorbed in the process of Photosynthesis.
- So, it is not possible to demonstrate respiration in green plant kept in sunlight.

19. What is the role of saliva in the digestion of food?

Ans: - Saliva is secreted by three pairs of salivary glands present in the mouth.

- the food is mixed thoroughly with saliva and moved around the mouth while chewing by the muscular tongue
- Human saliva contains an enzyme called ptyalin that converts starch into maltose
- The sticky substance present in saliva helps to swallow the food
- This partially digested food in the mouth is called bolus.

20.What is the role of roughages in the alimentary track ?

Ans: - Roughages provides **weight** to the food

- it results food moves slowly and easily in the alimentary canal.
- These slow movements helps the proper digestion and absorption of food.
- The food without roughages moves irregularly in the alimentary canal.
- Irregular movements of the food in the alimentary canal leads to indigestion and constipation problems.

21.What happens to plant if the rate of respiration become more than the rate of photosynthesis ?

Ans: - Generally, green plants releases O_2 and absorb CO_2 in the process of photosynthesis and they absorb O_2 and releases CO_2 in the process of Respiration.

- O_2 released from photosynthesis is absorbed in the process of Respiration.
- It results the amount of oxygen will be decreased in the surroundings.
- Carbohydrates are prepared in the process of photosynthesis and consumed in the process of respiration
- If respiration overtakes photosynthesis in a plant it is starved off from the supply of carbohydrates and therefore by it gets etiolated and finally it leads to the death of the plant.

22.. What food habits you are going to follow for good health ?

Ans:- - Having simple, well balanced meal

- - Give importance to take green vegetables ,fruits and roughages.
- - Eating them in a leisurely manner
- - Thoroughly masticating the food
- - Avoiding violent exercise soon after eating food
- - Drinking plenty of water and having regular bowel movements.
- - avoid junk foods and oil foods which have more calories and less nutrients.

23. Almost all the living world depends on plants for food material. How do you appreciate the process of making food by the green plants?

Ans: - - only green plants can prepare complex organic compounds from simple inorganic molecules (CO_2 , H_2O) in the process of photosynthesis and derive energy from it.

- These complex organic compounds transfer from green plants to herbivores ,herbivores to carnivores in the form of food for energy.
- Hence ,the plants are known as “Autotrophs and producers“
- the process of photosynthesis takes place in chloroplast .
- so many reactions are involved in this process they are mainly divides into two named Light phase and Dark phase
- During light phase chlorophyll is oxidised and break down the water molecule
- It leads to the formation of oxygen ,ATP and NADPH.
- During dark phase these ATP and NADPH will be consumed and finally carbohydrates are synthesized
- Thus, this process supplies food and oxygen to all life forms on the earth.
- However photosynthesis is a unique and extraordinary process on the planet earth.

4 Marks Questions

24. What is malnutrition explain some nutrition deficiency diseases ?

Ans: Eating of food that does not have one or more than one nutrients in required amount is known as malnutrition.

- Malnutrition leads to many problems such as kwashiorkor,marasmus,anemia....etc
- Kwashiorkor**:- this is due to protein deficiency in diet.

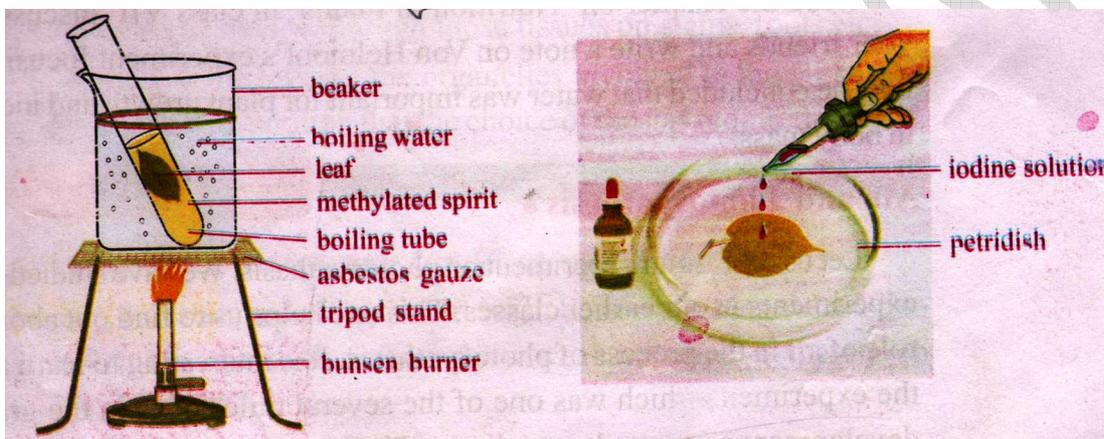
- Body parts become swollen due to accumulation of water in the intercellular spaces.
- very poor muscle development ,swollen limbs
- fluffy face difficult to eat ,diarrhoea ,dry skin ,are the symptoms of this disease.
-
- **Marasmus** :- this is due to deficiency of both protein and calories.
- Generally this disease occurs when there is an immediate second pregnancy or repeated child births
- Lean and weak,swelling limbs,less developed muscles, dry skin, diarrhoea, etc... are the symptoms of this disease.

25.What process you follow in your laboratory to study presence of starch in leaves ?

Ans:

Aim : To prove that starch is present in plant leaves.

Apparatus: Beaker with water, test tube ,Bunsen burner ,tripod stand, methylated spirit, leaf ,petridish ,iodine solution



Procedure:-

1. select a leaf of a potted plant with soft thin leaves.
- 2.boil the leaf in methylated spirit over a water bath till it become pale white,due to the removal of chlorophyll
- 3.Observe the leaf.
- 4.Spread the leaf in a dish and add a few drops of iodine on it .

Observation:

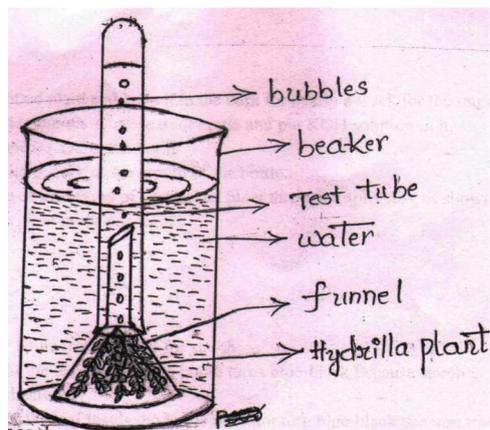
The presence of starch will be indicated by a blue-black colour in leaf .

Result : it is proved that starch is present in plant leaves.

26.How would you demonstrate that green plant release oxygen when exposed to light .

Aim: To prove that oxygen is produced during photosynthesis .

Apparatus: Beaker with water ,test tube, funnel ,hydrilla twigs, glowing splinter



Procedure :

- Place hydrilla twigs in the funnel
- Arrange this funnel in the beaker as shown in the figure. and pour the water
- Invert a test tube full of water on the neck of funnel..
- Ensure that the level of water in the beaker is above the level of stem of the inverted funnel.
- Place the apparatus in the sun for at least 2-3 hours.
- Place one more set of apparatus in dark.

Observation:

- After some time it is observed that gas bubbles come from the hydrilla plant.
- These bubbles are collected at the end of the test tube pushing the water into beaker.
- Test the gas in the test tube by inserting a glowing incense stick which would burst into flames.
- This shows the presence of oxygen

Result: it is proved that oxygen is produced during photosynthesis.

27. How would you Prove that carbon dioxide is necessary for photosynthesis ?

Aim: To prove that carbon dioxide is necessary for photosynthesis.

Apparatus : Wide mouthed bottle, KOH ,potted plant ,vertically split cork, iodine solution.



Procedure :

- Take a potted plant and keep it in the dark for nearly a week for the removal of starch.
- Take a wide mouthed transparent bottle and put KOH solution in it.
- KOH absorbs CO₂ in the bottle.
- Insert splitted cork in the mouth of the bottle..
- Insert one of the leaves of destarched plant through a split cork as shown in the figure.
- Leave the plant in the sun light .

Observation:-

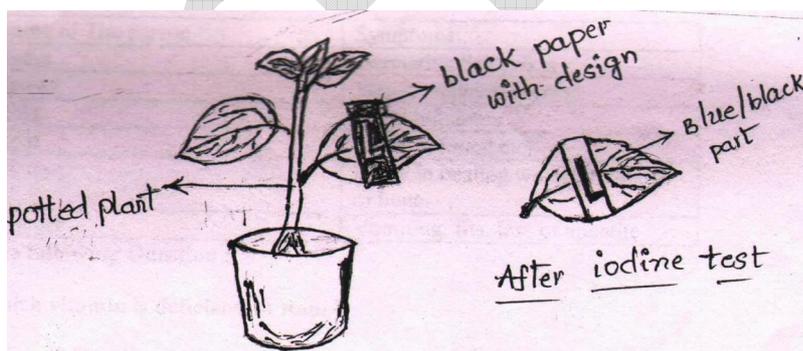
- After few hours test this leaf for starch.
- The part of the leaf outside the bottle turns blue-black because starch is formed in that part due to photosynthesis.
- The part of the leaf inside the bottle does not turn blue-black because the process of photosynthesis is inhibited due to lack of the carbon dioxide .

Result : it is proved that carbon dioxide is necessary for photosynthesis.

28. How would you demonstrate that sunlight is necessary to form starch in green plants .

Aim : To prove that sun light is necessary for photosynthesis .

Apparatus : potted plant , black paper, iodine solution.



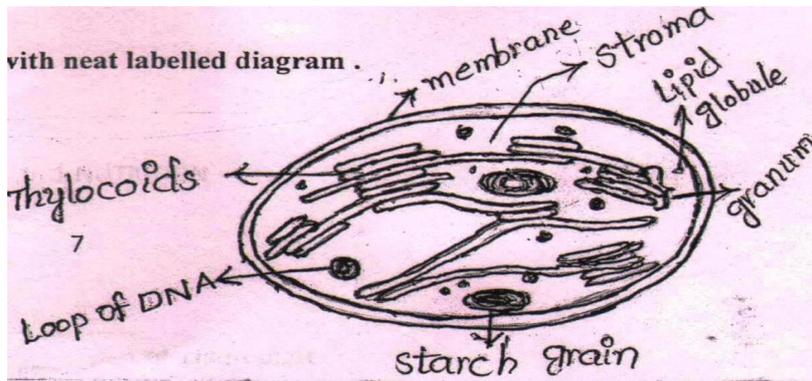
Procedure : Take a potted plant and destarch it by keeping in the dark for nearly a week.

- Cover one of its leaves with black paper on which a design is cut.
- Fix the paper on the leaf in such manner that light does not enter the dark part .
- Place this plant in the sun for few hours.
- After few hours of exposure to bright sunlight ,test the leaf which is covered by black paper for the presence of starch.

Observation: It observed that only the parts of the leaf ,which could get light through the cut design, turns blue-black showing the presence of starch.

Result: : it is proved that sunlight is necessary to form starch in green plants.

29. Explain the structure of chloroplast with neat labelled diagram .



-
- In green plants there are special membrane bound organelles called chloroplasts.
- Typical chloroplasts are disc shaped and consist of three membranes.
- The third layer that forms stacked sack like structures is called grana.
- In the chloroplast there is fluid filled portion called stroma, responsible for enzymatic reactions leading to the synthesis of glucose, which in turn join together to form starch.
- Chloroplasts have green colour pigment named chlorophyll which absorb the light energy
- Chlorophyll contain one atom of magnesium .
- Around 250-400 pigment molecules are grouped as light harvesting complex or photosynthetic unit in each granum.
- Such innumerable units function together in chloroplasts of green plants in the process of photosynthesis.

30. Read the table

S.no.	Name of The person	Symptoms
1	Ramu	Dermatitis,Scaly skin
2	Pawan	Mouth cracks at corners
3	Roja	Night blindness
4	Rani	Delay in blood clot
5	Thulasi	Dealy in healing wonds, fractures of bones
6	Chinna	Vomiting, fits, loss of appetite

Answer the following Question :

1. which vitamin is deficient in Rani ?

Ans: vitamin-K(pyloquinone)

2. What is the disease that suffering Ramu ?

Ans: Pellagra

3. **who is suffering from scurvy ?**

Ans:Thulasi

4. **What food you suggest Roja for better life ?**

Ans : Leafy vegetables, carrot , papaya, pumpkin, cod-liver oil , Shark liver oiletc.

5. **Who will be recovered by the Riboflavin tablets ?**

Ans: Pawan.

I. Fill in the blanks

1. Expand the ATP_____
2. Test to detect starch is _____
3. Light reaction occurs in _____part of chloroplast
4. End products of light reactions _____
5. Starting material of photosynthesis in purple bacteria_____
6. Cuscuta recives food from host through_____
7. Proteins digest and form _____
8. The digestive juice without enzymes_____
9. Enzymes required for photosynthesis exists in _____ of chloroplast.
10. Scientist_____ proposed equation of photosynthesis.
11. Enzyme _____digest fats.
12. Bolus is formed in _____ part of the digestive system.
13. Food stores for a long time in _____of alimentary canal.
14. Emulsification is necessary for the digestion of _____
15. Food prepared by plants is stored as _____
16. _____Are Sites of photosynthesis .
17. Enzymes present in pancreatic juice are _____
18. Finger like projections which increases surface area in small intestine are called_____
19. Acid present in gastric juice_____
20. _____vitamin is synthesised by Bacteria present in intestine.

II. Choose the correct answer.

21. Metal present in chlorophyll. A)
magnesium B) Iron C) zinc D) Nickel
22. Scientist _____told plant releases oxygen in the presence of sunlight. A)
von neal B)leavoiser C) engelman D) Inzen house.
23. Reason of vomiting. A) intake
of food rich in proteins . B)) intake of food rich in fats C) intake of food rich in
sugars D) intake of food rich in vitamins.
24. Micro nutrients in the following A)
fats B) carbohydrates C)proteins D) vitamins
25. Vitamins soluble in Fats. A) A,B B)
A,C C) B,C D) A,D,E,K

26. Digested food is absorbed in elementary canal
B) Stomach C) Small intestine D) large intestine A) Mouth
27. Last part of the alimentary canal.
Duodenum B) Oesophagus C) Appendix D) Anus. A)
28. Rickets is caused due to the deficiency of following vitamin.
B) Calciferol C) Tocoferal D) Phylloquinone A)Thiamine
29. Food in intestine
B) Acidic C)Neutral D) None A) Basic
30. Scientist explained light reactions of photosynthesis
Niel C) lavoiser D) priestly A) Hill B)
31. Effects of junk food
blindness B) Paralysis C) Marsmus D) Obesity A) Night
32. Sterility is caused due to _____
E C) D D) K A) K B)
33. Iodine was dropped when Raju perform a test to identify starch, what can you suggest as alternate.
Greece D) Phenol A) Kerosene B) Betadin C)
34. 'x' indicates

- A) Stomata B) Guard cell C) Companion cell D) **Creste**
35. Which of the following plant take the food by parasitic nutrition?
B) Mushroom C) Cuscuta D) Leech A) Yeast
36. The rate of photosynthesis is not affected by
Intensity B) Humidity C) Temperature D) Carbon dioxide Concentration. A) Light
37. A plant is kept in dark cupboard for about forty eight hours before conducting any experimentation on photosynthesis in order to
from leaves B) Remove starch from leaves A) Remove chlorophyll
D) Ensure That leaves are free from the starch. C) Ensure that no photosynthesis
38. In single celled animals the food is taken
the entire body surface B) Mouth C) Teeth D) Vacuoles. A) By
39. Which part of the plant takes in Carbon dioxide from the air for photosynthesis
A) Root hair B) Stomata C) Leaf veins D) Sepals.
40. The enzyme present in saliva
A) Pepsin B) Ptyalin C) Amylase D) Lipase

Match the following

- | | | | |
|-----|------------------|-----|----------------------------|
| 41. | Group – A | | Group-B |
| | 1. Phylloquinone | () | A) Skin and Eye diseases |
| | 2. Retinol | () | B) Rickets |
| | 3. Calciferol | () | C) Abortion |
| | 4. Tocoferol | () | D) Anaemia |
| | 5. Folic acid | () | E) Delay in blood clotting |

42. **Group – A**

1. Ingenhousez ()
2. Robert hill ()
3. J. pristely ()
4. Melvin calvin ()
5. Daniel Arnon ()

Group-B

- A) oxygen released from plants
- B) Dark reaction
- C) Photolysis of Water
- D) Separation of chloroplast
- E) plants releases oxygen in the light.

NUTRITION-KEY

1	ADENOSINE TRI PHOSPHATE	11	LIPASE	21	A	31	D	41	1-E,2-A,3-B,4-C,5-D
2	IODINE TEST	12	MOUTH/BUCCAL CAVITY	22	D	32	B	42	1-E,2-C,3-A,4-B,5-D
3	GRANUM	13	STOMACH	23	B	33	B		
4	ATP,NADPH,O ₂	14	FATS	24	D	34	B		
5	H ₂ S	15	CARBOHYDRATES	25	D	35	C		
6	HAUSTORIA	16	CHLOROPLAST	26	C	36	B		
7	AMINO ACIDS	17	AMYLASE,TRYPSIN,LIPASE	27	D	37	C		
8	BILE	18	VILLI	28	B	38	A		
9	STROMA	19	HYDROCHLORIC ACID	29	A	39	B		
10	VAN NEIL	20	CYANOCOBALAMINE	30	A	40	D		

2.Respiration

One mark questions

1. What was produced by combustion according to Lavoisier ?

Ans: Fixed air was produced by combustion according to Lavoisier.

2. Why is the exhaled air warmer than the air around us ?

Ans: Generally the temperature of the human body is more than the air around us, so the exhaled air is warmer than the air around us.

3. We are aware of the fact that water vapour deposits on a glass plane if we breathe out on it. Where does this water vapour come from in exhaled air ?

Ans: As the inhaled air passes through the nasal cavity, its temperature is brought close to that of the body and during exhalation this air is condensed to water vapour.

4. Which gas do you think might be present in greater quantities in the air we breathe as compared to the air around us ?

Ans: Carbon dioxide is present in greater quantities in the air we breathe out.

5. What will happen if the respiratory tract is not moist ?

Ans: The moist surface of the respiratory tract removes some of the tiny particles of dirt in the air.

6. What are the situations that affect your breathing ?

Ans: The situations like working vigorously, drowning, suffering from diseases like asthma or bronchitis, over excitement, improper functioning of the heart, sleeping ...etc affect our breathing.

7. What happens during the process of respiration ?

Ans: During the process of breathing oxygen is taken by the blood cells and carbon dioxide is exhaled.

8. Which gas needs to be removed from our body during exhalation? Where does the extra amount of gas come from ?

Ans: Carbon dioxide needs to be removed from our body during exhalation. The extra amount of gas is due to metabolic activities of the body.

9.What did you notice ? What happens to our breath as you try to swallow?

Ans: As we try to swallow ,our breath stops during the time we are swallowing and allowing the food into pharynx.

10.What is the composition of the inhaled air ?

Ans: Oxygen-21%,Carbon dioxide -0.04% Nitrogen-79%

11.What is helping you to swallow without deflecting it to the wind pipe ?

Ans: The traffic of food is kept properly channeled by a flap like valve,the epiglottis protects the tube to the lungs arresting the entry of food.

12.Why the percentage of carbon dioxide is excess in the exhaled air ?

Ans: The cells of our body give up the carbon dioxide present in them during exhalation . So the amount of the carbon dioxide increases in its percentage during exhalation .

13.After undergoing strenuous exercise we feel pain in muscles why do this happens ?

Ans: Due to inadequate supply of oxygen to the muscles and the lactic acid is being formed in the muscles we feel pain in the muscles.

14.Why the mitochondria are called power house of the cell ?

Ans: The energy produced due to glucose oxidation is stored in mitochondria in the form of ATP . That is why mitochondria are called powerhouse of the cell.

15.Why alveolus is so small and uncountable in number ?

Ans: The lungs have enormous number of alveolus to increase the surface area for gaseous exchange so that more Oxygen is diffused in.

16.In which form does the carbon dioxide is transported in the living organisms ?

Ans: Generally the Carbon dioxide is transported in the form of bicarbonates

17.Respiration is an energy releasing pathway do you agree justify your answer ?

Ans: Yes, Respiration is an energy releasing pathway .When we work hard we have to respire more ,to release more energy .

18.What is Oxyhaemoglobin ?

Ans: The red pigment haemoglobin saturated by receiving the oxygen it is converted into oxyhaemoglobin.

2 marks questions

1.State two Similarities between aerobic and anaerobic respiration ?

Ans; In both Aerobic and Anaerobic respiration

Glycolysis is the first stage. Both processes take place in the cell. Both the processes involve pyruvic acid. Both the processes release energy.

2.why does the rate of obreathing increase while walking up hill at a normal place in the mountains? Give two reasons.

Ans. As we move uphill or ascend mountain ranges the oxygen levels are less at highest points our body requires more oxygen so our breathing increases to get more oxygen.

3.Air leaves the tiny sacs in the lungs to pass into capillaries what modification is needed in this statement ?

Ans: Gaseous exchange takes place in the tiny sacs or alveoli as blood capillaries take up oxygen and expel carbon dioxide.

4.Why does a deep sea diver carry oxygen cylinders on his back ?

Ans: As we go deep into sea the oxygen levels are less .In order to survive deep sea divers carry oxygen cylinders on their back for supply of oxygen.

5.Raju said stem also respire along with leaves in plants . can you support this statement .Give your reasons.

Ans: Yes, I can support this statement ,Because respiration takes place in all living cells .No pigments is necessary to perform respiration just like chlorophyll . Some plants have lenticels on the the stem to carry respiration process.

6. Why we are advised not to talk while eating food ?

Ans: Generally the bolus has to pass over the epiglottis in to the oesophagus. If we talk while eating food the epiglottis mayopen and the fraction of food may enter into trachea which causes choking. So we should not talk while eating.

7.What happens when a baker prepares a dough by mixing yeast in it ?

Ans: When yeast is mixed with dough yeast cells undergo fermentation and release carbon dioxide so the dough becomes fluffy and raises.

8. How does the temperature of our body is being maintained constant ?

Ans: Heat is constantly lost from the boy surface thus it must be continuously generated with in our bodies to replace what has been lost to keep the body temperature constant .

9.Plants photosynthesize during day time and respire during the night. Do you agree to this statement ? Why ? whynot?

Ans: I do not agree with the statement, why because respiration is continuous process which takes place in all living organisms photosynthesis requires sunlight so rate of photosynthesis is more in day time and rate of respiration is more in night time .

10.How does the respiration takes place in mangroves ?

Ans: Mangroves trees of the tropics which forms the aerial roots above the soil surface and takes in oxygen through these roots.

4 marks questions

1. Write the differences between photosynthesis and respiration ?

Ans:

Photosynthesis	Respiration
<ul style="list-style-type: none">- Photosynthesis takes place in only green plants and in some photosynthetic bacteria.- It occurs in day time only- In plants only some cells like chloroplasts perform photosynthesis .- Chloroplasts are the sites of photosynthesis and requires sunlight .- It is anabolic process in which food material is synthesized and energy is released.- CO₂ is utilised and O₂ is released.- CO₂,H₂O light and chlorophyll are the raw materials- The weight of the plant increases due to synthesis of food material.	<ul style="list-style-type: none">- Respiration takes place in all living organisms- It occurs all the time- It is carried out by all the living cells- Mitochondria are the sites of respiration.and doesn't requires sunlight.- It is catabolic process in which food material is broken down and energy is released.- O₂ is utilised and CO₂ is released.- Carbohydrates like glucose fatty acids are the raw materials.- The weight of the plant decreases due to utilisation of food materials.

2.If you have chance to meet pulmonologist what questions do you pose to clarify about pulmonary respiration ?

Ans: What are the diseases that affect the lungs?

What precaution should take to avoid respiratory ailments?

What is allergy?

What is asthma ? why does it cause trouble to patients in winter season mainly ?

What precaution should be take an asthma patient ?

What are the ill effects of smoking ?

How does the pollution affect the lungs ?

3.What is the role of epiglottis and diaphragm in respiration ?

Ans: Epiglottis :- It is a flap like muscular valve controls movements of air and food towards their respiration passages.

Diaphragm :-The lungs in body themselves can neither draw in air nor push it out .Instead the chest wall muscles and another flexible flattened muscle called diaphragm helps the lungs in drawing air into and out of them.

- When the diaphragm is relaxed it is in the shape of dome . with the convex side of the dome extending in to the chest cavity .
- When the diaphragm contracts it flattens out a bit or the dome moves down wards as a result the volume of the chest cavity increases its internal pressure decreases and the air from out side rushes in to the lungs .
- When it reverse the volume of the chest cavity decreases and the air pressure increases results the escape of carbon dioxide from the lungs.

4. What procedure you follow to understand anaerobic respiration in your school laboratory ?

Ans: Procedure:-

1. The prepared glucose solution is boiled and the dissolved oxygen is removed .
2. Glucose solution is cooled and yeast is added.
3. A few drops of Janus green B to the solution to ensure that oxygen is removed turning Pink colour
4. 1cm layer of liquid paraffin is poured on the mixture .
5. Thermometer and a "U" tube is inserted in two holes of the stopper.
6. The other end of "U" tube is placed in bicarbonate solution .
7. Warm the solution for a quick reaction.
8. Kept the arrangement for 2-3 hours without disturbing it .
9. The mercury level increases and the bicarbonate solution turns into milky white indicates that carbon dioxide is evolved.

5. What are the respiratory diseases because of pollution and tobacco ?

Ans:

Asthma: The airways are inflamed and may occasionally cause bronchi spasm ,causing wheezing and shortness of breath ,allergies, infections or pollution can trigger asthma symptoms.

Chronic obstructive pulmonary diseases (COPD): Lung conditions defined by an inability to inhale normally which causes difficulty in breathing.

Chronic bronchitis : A form of COPD characterised by the inflammation of bronchi.

Emphysema: Lung damage allow air to be trapped in the lungs in this form of COPD difficulty in blowing air out is its symptoms.

Acute bronchitis : A sudden infection in airways usually by virus.

Pneumonia: An infection of the alveoli of lungs.

Tuberculosis: A disease due to infection caused by bacteria Mycobacterium tuberculosis.

Lung cancer: Has many forms and may develop in any part of the lungs. Most often this attacks the main part of the lungs causes due to excessive smoking.

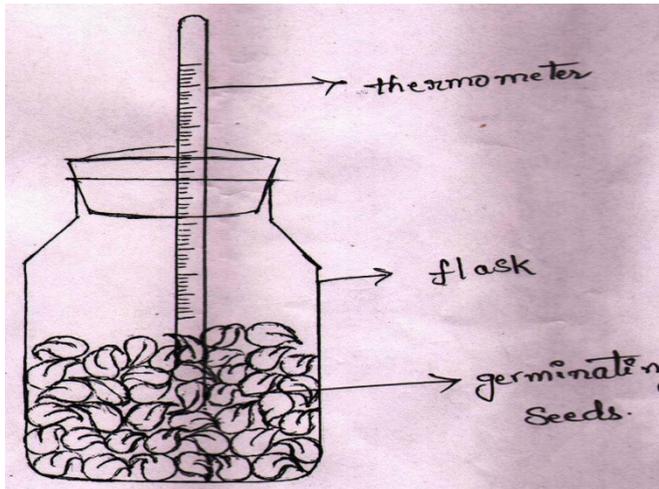
Acute respiration distress syndrome (ARDS): Severe sudden injury to the lungs caused by serious illness. Life support with mechanical ventilation is usually needed to survive until the lungs recover.

6. Explain an activity to prove that heat is evolved during respiration?

Ans:

Aim : To prove that heat is evolved during respiration

Material required: Thermometer ,Germinating seeds, Thermos flask.



Procedure: 1.Take sprouts in a thermos flask

2.Remove the lid and insert a thermometer through a one hole rubber cork.

3. Take care such that the thermometer is in midst of the seeds .

4. Close the flask and rescored the temperature for every two hours for 24 hours.

Observation: There will be rise in temperature.

Inference: Heat is produced during respiration.

Choose the correct answer.

1. We will find vocal cords in []
A) Larynx b) Pharynx c) Nasal cavity d) Trachea
2. Cluster of air Sacs in lungs are called []
A) Alveolus B)Bronchi C) Bronchioles D) Air spaces
- 3.Which of the following is correct []
A) The diaphragm contracts-volume of chest cavity increases.
B) The diaphragm contracts-volume of chest cavity decreases
C) The diaphragm expands-volume of chest cavity decreases
D) The diaphragm expands-volume of chest cavity increases
- 4.Respiration is catabolic process because of []
A) Break down of complex food molecules B) Conservation of light energy
C) Synthesis of chemical energy D) Energy storage
- 5.Energy is stored in []
A) Nucleus B) Mitochondria C) Ribosomes D)Cell wall
- 6.The tern vitiated air means []
A) Oxygen B) Air with oxygen C) Air without oxygen D) Carbon dioxide
- 7.The flap likr valve that protects the trachea []

A) Glottis B) Hypoglottis C) Epiglottis D) None

8. The normally we exhale or in hale []

A) 5000ml B) 4000ml C) 1000ml D) 500ml

9. Carbon dioxide usually transported as this in our body []

A) Carbonate B) A gas C) Bicarbonate D) In liquid form

10. The energy in ATP is stored in the form of these bonds []

A) oxide B) Sulphates C) Phosphates D) Chloride

Fill in the blanks :

1. Exhaled air contains _____ and _____

2. A flap like structure muscular valve controls movement of air and food is _____

3. Energy currency of the cell is _____

4. Lenticells of glucose gives _____ and _____

5. Mangroves trees respire with their _____

6. Combustion of glucose gives _____ and _____

7. Robinson also stated that respiration is type of _____

8. Accumulation of lactic acid results in _____

9. Each ATP molecule gives _____ calories of energy.

3. Trnaporation –The circulatory system

1. Who noticed valves in the leg veins ?

Ans: GirolamoFabrici

2. What is the size of our heart?

Ans: It is approximately size of our fist

3. In which organism protoplasm shows Brownian movements ?

Ans: Amoeba

4. what is double circulation ?

Ans: If the blood flows through the heart twice for completing one circulation it is called double circulation.

5. Which vitamin is required for bloodclot ?

Ans: vitamin-K

6. In root where was xylem tissue situated ?

Ans: Osmosis

7. What is transpiration ?

Ans: Evaporation of water through stomata of leaves is called transpiration.

8.The lumen size is bigger in vein when compared with artery –Why ?

Ans : Veins are generally large in diameter carry more blood volume and have thinner wall in proportion to their lumen.

9.What is the relationship between the heart beat and the pulse ?

Ans: The rate of the pulse will be equal to the number of heart beats.

10.Which tissue transports food to all the other parts of the plant ?

Ans: Phloem

11.Which organ acts as a pump in the circulatory system?

Ans: Heart

2 marks questions

1.What is the relation ship between blood and plasma?

Ans: -Blood is a red coloured liquid which circulates in our body. Blood is red due to the presence of red pigment haemoglobin in its red cells.

- Blood plasma is straw or pale yellow coloured component of blood that normally holds the blood cells. It makes up 60% of the body’s total blood volume .It is mostly water .
- Blood is the bodily fluid in higher organisms that transports necessary substances such as nutrients and oxygen to each and every and also carries metabolic wastes away from the cells.

2.What is your inference about experiment with aphids ?

Ans: - The inference about experiment with aphids is that food is transported in the phloem cells.

- It was proved that the contents of the phloem sieve tubes or under slight pressure and so the fluid slowly exudes from of drops.

3. If the valves in veins of the legs the reverse to stop the reverse flow of blood what could be the consequences of this failure ?

Ans: If the valves in veins of the legs the reverse fail to stop the reverse flow of the blood.Due to gravitation force the blood can’t reach the heart it accumulates in the veins and the entire system fails and it also leads to oedema.

4.Write the differences between Xylem and Phloem ?

Ans:

Xylem	Phloem
<ul style="list-style-type: none"> - Water and minerals are transported from roots to aerial parts of the plant through xylem - Forms vascular bundles with phloem. - Tracheids, vessel, elements,xylem parenchyma ,xylem sclerenchyma are its 	<ul style="list-style-type: none"> - Transportation of food and nutrients from the leaves is done through phloem - Forms vascular bundles with xylem - Sieve tubes companion cells, phloem parenchyma ,bast fibres intermediary cells are its components.

components. - Xylem occupies the center of the vascular bundle. - Xylem is star shaped	- Phloem occurs on outer side of the vascular bundles. - Phloem is not star shaped.
--	--

5. Write the differences between systole and Diastole .

Ans:

Systole	Diastole
- This is the active phase of the cardiac cycle. - When the heart contracts it pumps blood from the heart chambers into the aorta and pulmonary artery.	- This is the resting phase of the cardiac cycle. - When the heart relaxes and allows the chambers to be filled with blood from venacavae and pulmonary veins.

6. What will happen if cells sap of root hair cells contain high concentration of ions ?

Ans: Cell sap of root hair cells contain high concentration of ions pass from cell to cell by osmosis through the epidermis , root cortex, endodermis and reach root xylem.

- The xylem vessels of the root of the plant are connected to the xylem vessels of its stem
- So, the cell sap containing water and minerals carried by the xylem vessels in stem reach the leaves through the branched xylem vessels which enter from the petiole into each and every part of the leaf.
- In this way the cell sap of root hair cells containing high concentration ions reach through the root and stem to the leaves of the plant.

7. Is there any relation between transportation and rainfall?

Ans: The amount of water passing through a plant is often considerable.

- For example, an oak tree can transpire as much as 900 liters of water per day. It follows therefore that areas of forest significantly affect the degree of saturation of the air above them ,so that when air currents bring air which is already nearly saturated to a forest area, it becomes fully saturated and comes down as rain; this is why forest areas often have a higher rain fall than area nearby.

8. Why do we compare arteries like tree which divides into smaller and smaller branches ?

Ans :- Arteries carry oxygenated blood to the tissues. The largest aorta after comes outside of the heart. It divides into small branches called arteries and these still divide into small arterioles and supply oxygenated blood to the tissues which are present through out the body. It looks like a tree with smaller and smaller branches and is compared to a tree.

9. How is the human heart protected from shocks or injuries ?

Ans: - Heart is located between the two lungs protected by rib cage.

- The human heart is covered by two layers of membranes.
- These membrane are called pericardial membrane .
- The space between the two layers is filled with pericardial fluid.
- The pericardial fluid protects the heart from physical shocks or injuries.

10. What is cardiac cycle ? How does it occur ?

Ans: - The sequential events in the heart which are cyclically repeated are called cardiac cycle.

- The cardiac cycle includes an active phase systole and resting phase the diastole of artria and ventricles.
- The contraction phase of the heart beat is called systole and the relaxation phase of heart beat is diastole.
- The whole process of cardiac cycle is completed in approximately 0.8 seconds.
- The time needed for atrial contraction is 0.11-0.14 seconds
- The time needed for ventricular contraction is 0.27-0.35 seconds.

4 Marks Questions:

1. Write the differences between arteries and veins .

Ans:

Arteries	Vein
<ul style="list-style-type: none"> - Move away from the heart . - Distributes blood to the body organs . - Blood pressure is high . - valves are absent. - Carry oxygenated blood except pulmonary artery. - They end in capillaries. - They are deep seated. - They do not collapse when there is no blood in it or when cut across. - Arteries further divide into arterioles. - Arteries are reddish in colour. - Arteries empty up at the time of death. 	<ul style="list-style-type: none"> - Move towards the heart. - Collects blood from body organs. - Blood pressure is low. - valves are present. - Carry de-oxygenated blood except pulmonary vein. - They start in blood capillaries. - They can be seen sub cutaneously. - They collapse when there is no blood in it or cut across. - Veins further divided into venules. - Veins are bluish in colour. - Veins get filled up at the time death.

2. What is root pressure ? How it is useful to plants ?

Ans: When water enters into the xylem vessels from root hairs and root cells , a pressure in the xylem vessels develops which forces the water upwards. This total pressure is known as root pressure.

Uses of root pressure in plants:-

1. Root pressure helps to drive fluids upwards into the water.
2. It helps to pull the water upwards by several meters in tall trees.
3. It helps to supply water to the leaves in tall trees.
4. It is responsible for pushing up water to small heights in the stem.
5. The greatest contribution of root pressure may be to re-establish the continuous chains of water molecules in the xylem.
6. Transpiration also helps to trans port water in tall plants.

3. How can you prove that water is transported through the xylem?

Ans: **Aim:** To prove that the water is transported through the xylem.

Materials required : - a plant bearing white flowers , Jar and red colour water.

Procedure: - Take a plant bearing white fowers.

- Place it in a jar containing red coloured water

- Leave it for an hour and then observe.

Observation:- The flowers and portion of leaves turn red.

Inference :- This shows that the water is being transported or carried up to the shoot through the stem.

- But we have to prove that water is transported through xylem.
- Take cross section of the stem (cut the stem of the plant taken for experiment horizontally)
- Examine the thin section under the microscope.
- You can find red spots showing that water is transported through these parts which are called xylem.

4. Write about lymphatic system.

Ans: - As blood flows, some amount of fluids and certain solid materials are constantly flowing out of them at different junctions such materials must be collected and sent back into blood circulation.

- In latin lymph means water.
- Blood circulation in the blood vessels , pushed by the heart. From the heart it flows into the arteries and finally into the capillaries.
- To supply nutrients to the cells ,the liquid portion of the blood with nutrients flows out of the capillaries. This is called tissue fluid.
- Tissue fluid is the substance which contains lymph present in the tissue.
- The tissue fluid which is present in the tissue should be transported into the blood vessels again. Some portion of the tissue fluid enters into the venules, which in turn from the veins, Which carry blood to the heart.
- To transport the tissue fluid into the main blood stream, a separate system is present. That is called lymphatic system.
- Lymph is the vital link between blood and tissues by which essential substances pass from blood to cells and excretory products from cells to blood .The lymphatic system is a parallel system to venous system which collects tissue fluid from tissues and transports it to the venous system.
- Blood is the substance which contains solid and liquid particles.

5. What do you want to compare with the transportation in blood vessels ?

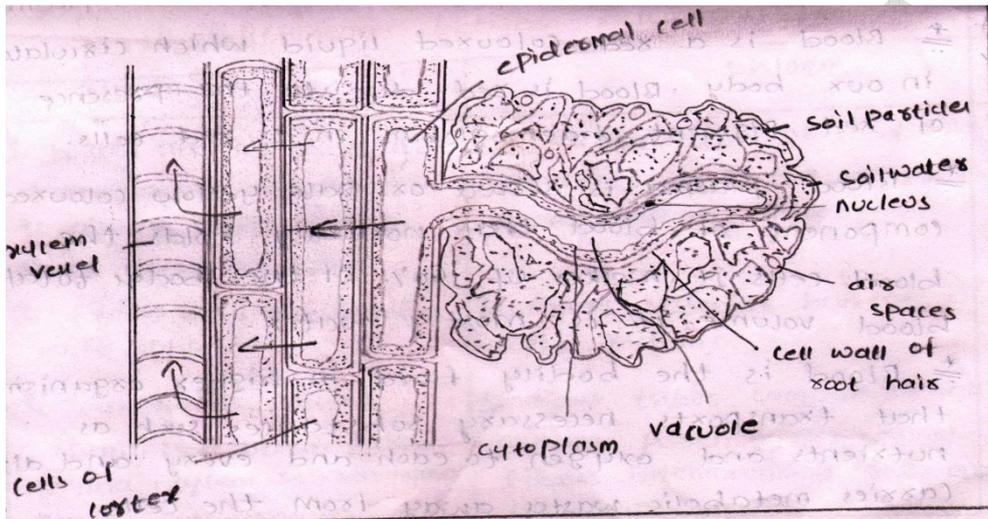
Ans: I want to compare the transportation in blood vessels with transport of goods that is a part of our living.

- To lead a normal life, we need several items such as food grains, vegetables etc. Most of these are produced at some other place and are transported to the place where we live.
- We know that goods being transported daily by different ways.
- If the transport of goods is stopped our routine life becomes disturbed and we will face many difficulties.
- A lot of wastes are produced in our homes ,shops and transported to a far off place for disposal.
- If the transport fails ,our surrounding become dirty, unhygienic and our life becomes miserable.
- In other words transport system have become an essential part of our life.
- Similarly transportation in blood vessels of the body is essential to keep us a like and healthy.
- Transportation helps in sending useful material to body parts and helps in removal of waste from our body.

6. How is water absorbed? Explain with an experiment?

Ans: Absorption of root hairs:

- Examine some mustard seedlings which have been grown on wet filter paper.
- Observe the mass of fine threads coming from the root by hand lens.
- These are root hairs through which water enters the plant.
- Gently squash a portion of the radical between slide and cover slip in a drop of water and examine under a microscope.
- Note the thinness of the walls of the root hairs.



- Osmosis plays an important role in absorption of water by root hairs.
- Root hairs grow out into the space between the soil particles and that the hairs are surrounded by moisture.
- The soil water is an extremely dilute solution of salts, more dilute than that of the cell sap in the root hair, therefore water will pass into the vacuole of the root hair by osmosis.
- The entry of water dilutes the contents of the root hair vacuole so that it becomes weaker than its neighbour.

Choose the correct answers.

1. The term cardiac refers to which organ in the body ()

- A) Heart B) Vein C) Lymph D) Capillary

2. On which side of the human heart is low in oxygen ()

- A) Left Ventricle B) Right Ventricle C) Left atrium D) Right Atrium

3. Which structure of the heart controls the flow of the blood ()

- A) Arteries B) Veins C) Valves D) Capillaries

4. Which of the following opinion is correct? ()

- A) Ravi said, Xylem and phloem cells arranged one upon the other to form a tube like structure.

B) John said, Xylem and phloem are not separate tube like structures .

C) Salma said ,Xylem and phloem cells connect together to form a tube like structure.

D) Hari said, Because of its shape they are said to be tube like structures.

5. An aphid pierces its proboscis into the _____ to get plant juices. ()

A) Xylem B) Phloem c) Cambium D) Vascular bundle.

6. Arterioles of arteries and venules of veins join with microscopic vessels called. ()

A) Capillaries B) Pulmonary vein C) Coronary vein D) Post caval vein

7. The time needed for arterial contraction is ()

A) 0.10 to 0.12 seconds B) 0.12 to 0.13 seconds C) 0.11 to 0.14 seconds D) 0.15 to 0.17 seconds

8. The Weight of the man's heart is ()

A) 300 gms B) 500gms C) 400 gms D) 200gms

9. In latin Lymph means ()

A) Air B) oxygen C) Moisture D) Water

10. Due to genetic defect the blood may not coagulate is called . ()

A) Sarcoma B) Dermatology C) Haemophilia D) Carcinoma

11. Which of the following carries blood from the heart to the lungs. ()

A) Pulmonary artery B) Coronary artery C) Renal artery D) None of these.

12. One of the following scientist studying veins in the legs. ()

A) William harvey B) Marcello Malpighi C) Girolamo Fabrici D) Leeuwenhoek.

13. The rate of pulse will be equal to the number of

A) Respiration B) Heartbeats C) Systoles D) Diastoles.

14. The sequential events in the heart which are cyclically repeated are called.

A) Cardiac cycle B) Systole C) Diastole D) Heartbeat.

15. The shape of the heart is

A) Square B) Rectangle C) Cone D) Pear

16. The blood vessels that supply blood to the walls of the heart are

A) coronary vessels B) Pulmonary vessels C) Venal vessels D) None.

17. The oxygenated blood to heart from lungs supplied by _____

A) Pulmonary vein B) Pulmonary artery C) Superior vena cava D) Coronary vein

18. First eu coelomate animals are

A) Annelids B) Arthropods C) Platyhelminthes D) Nematode helminthes.

19. The superior and inferior vena cava open into

A) Left atrium B) Right Ventricle C) Left ventricle D) Right atrium

20. The whole process of cardiac cycle is approximately completed in

A) 0.9 seconds B) 0.11 Seconds C) 0.8 sec D) 0.10 seconds.

Fill in the blanks:

21. Doctors measure the blood pressure with a device called _____

22. _____ is the substance that contains without solid particles.

23. _____ artery supplies deoxygenated blood to the lungs.

24. The two layered membrane that covers the heart is _____ membrane.

25. In Latin lymph means _____

26. _____ Vitamin is required for blood clot.

27. _____ tissue transports food to all the other parts of the plant.

28. The main artery of the body _____

29. The contraction phase of the heart is _____

30. Match the following

Group-A

- | | |
|------------------------------------|-----|
| 1. Xylem | () |
| 2. Open type of circulatory system | () |
| 3. Closed type circulatory system | () |
| 4. Blood circulatory system | () |
| 5. Two chambers heart | () |

Group-B

- A) man
- B) Transport of water
- C) Arthropods
- D) Fish
- E) William Harvey

Answer:

1.A 2.D 3.C 4.C 5.B 6.A 7.C 8.A 9.D 10.C 11.A 12.C 13.B 14.A 15.D 16.A 17.A 18.A 19.D 20.C

21. Sphygmomanometer 22. Lymph 23. Pulmonary 24. Pericardial 25. Water 26. Vitamin –K 27. Phloem 28. Aorta 29. Systole 30. 1.B, 2.C, 3.A, 4.E, 5.D.

4. Excretion-the wastage disposing

1.What is meant by Excretion?

Ans: Excretion is a biological process involve in separation an removal of wastes from the body.

2.How are waste products excreted in amoeba?

Ans: In Amoeba waste products are excreted through diffusion by the body surface.

3.What are the waste products generated in the metabolism ?

Ans: CO₂ ,Water, Nitrogenous compounds like ammonia, urea, uric acid ,bile pigments and excess salts.

4.Why the right kidney is palced slightly lower than the left kidney?

Ans: The position of the right kidney is lower than left kidney due to the presence of liver above it.

5.What is micturition ?

Ans: The process of discharging urine outside the body is called micturition.

6.What is the composition of urine ?

Ans: urine contains 96 % of water ,2.5 % of organic substances and 1.5 % of inorganic solutes.

7.What is uremia ?

Ans: The condition in which body is filled with extra water and waste materials is called uremia. This condition occurs when our kidneys stop working.

8.What is ESRD ?

Ans: End Stage Renal disease.

9.Mention the reasons for kidney failure ?

Ans: Infections,injuries,very high B.P, very high blood sugar.

10.Where do the waste products stored inside the plants ?

Ans: In plants waste products are stored inside the leaves ,bark and fruits.

11.What are raphides ?

Ans: Waste materials stored in the form of crystal like bodies in fruits of plants such as **yam** are called raphides.

12.What are alkaloids ?

Ans: The nitrogen by products in plants are called alkaloids. Eg: Quinine,nicotine.

13.Why do we get peculiar smell when we shift the potted plant ?

Ans: Roots of the plants not only absorb fluid from the soil but also returns peculiar secretions back into the soil. That's why we get a peculiar smell when we shift the potted plant.

14.Name different excretory organs present in the human body ?

Ans: the different excretory organs present in human body are Kidneys ,skin, liver, lungs and intestine .

15.What is dialysis?

Ans: The removal of unwanted substance from the body through artificial kidneys is called dialysis.

16.Why plants shed their leaves and bark periodically?

Ans: Plants shed their leaves and bark periodically to reduce their loss of water content from them.

17.What happens if reabsorption of water doesn't take place?

Ans: If reabsorption of water doesn't take place ,our body severely suffer from absence of biochemical fluids. As a result the person may die.

2 Marks questions

1.Write differences between kidney and artificial kidney ?

Ans:

kidney	Artificial Kidney
- It is natural organ for excretion	- It is an artificial system to filter the blood.

<ul style="list-style-type: none"> - It is a permanent solution for the excretion of waste from the blood. - It works inside the body. 	<ul style="list-style-type: none"> - It is only temporary solution for the purification of blood. - It works outside the body.
--	--

2. What are the differences between Excretion and secretion ?

Excretion	Secretion
<ul style="list-style-type: none"> - It is the removal process of material from living being. - It is a passive process. - Humans excrete material like tears, urine, carbon dioxide and sweat. 	<ul style="list-style-type: none"> - It is movement of material from one point to other point. - It is an active process. - Humans secrete enzymes, hormones and saliva.

3. Imagine what happens if waste materials are not sent out of the body from time to time ?

Ans:- If waste materials are not sent out of the body they accumulate in the body and become toxic.

- Body is completely filled with extra water and waste material.
- Our hands or feet may swell.
- We feel tired and weak because our body needs clean blood to function properly.

4. To keep your kidneys healthy for long period, what questions will you ask a nephrologist ?

Ans: - How many glasses of water should we drink daily ?

- What are healthy living habits to keep our kidneys safe ?
- What kind of food should we eat more for proper functioning of our kidneys ?
- What happens if we drink less amount of water?

5. Why is urine slightly thicker in summer than in winter ?

Ans: During summer to protect the body from extreme hot temperature, skin produces more sweat and loses water.

- Hence, the percentage of water in the body fluids is less.
- Kidneys have no chance to remove excess water.
- Ultimately, kidneys have to discharge thicker and more concentrated urine.

6. Why is the diameter of the afferent arteriole bigger than the efferent arteriole ?

Ans: More blood is pumped into the glomerulus because the diameter of the afferent arteriole is bigger.

- Pressure is exerted in the glomerulus for ultrafiltration because the diameter of the efferent arteriole is narrower.

7. Write a brief note on (A) Tannins (B) Resins

Ans: **Tannins:** - Tannins are carbon compounds

- They are stored in different parts of the plants and are deep brown in colour.
- Tannins are used in tanning of leather and in medicines. Ex: Cassia, Acacia.
- **Resins:** - Occur mostly in gymnosperms in specialized passages called resin passages.
- These are used in varnishes. Ex: Pinus.

8. Write a short note on Gums & Latex.

Ans: **Gums:** - Plants like neem, acacia secrete a sticky substance called gum when branches are cut.

- Economically gums are valuable being used as adhesives and binding agents in the preparation of the medicines, food ,etc

Latex:-Latex is sticky, milky white substance secreted by plants.

- Rubber is obtained from the latex of *Hevea brasiliensis*.

9.What is Diabetes insipidus ?

Ans: Hormone action maintains osmotic concentration of body fluids. Deficiency of vasopressin causes excessive repeated ,dilute urination . this is called Diabetes insipidus .

10.Why weeds and wild plants are not affected by insects and pests ?

Ans: Several compounds are synthesized by the wild plants for their own use ,especially for defence.

- These compounds are prepared and store them in roots, leaves,seeds for preparation against pests ,insects and herbivores.
- Most of these chemicals are unpleasant to taste and some them are toxic also.
- They may even kill the animal or insects that eat them.
- So,the wild plants and weeds are not affected by the insects and pests.

4 Marks Questions.

1.Name the different excretory organs in human body and excretory material generated by them?

Ans: Human excretory systems contains kidneys as chief excretory organs .In addition to kidneys,lungs, skin and liver also help in excretion .Even though these organs are having their own specific functions they carry out excretion as a secondary function .

Excretory organs	Excretory Materials
1.Kidneys	-Water ,urea ,uricacid, creatinine,inorganic salts.
2.Lungs	-Carbon dioxide and water.
3.Liver	- Bile pigments ,Cholesterol,derivatives of steroid hormones,extra drugs,alkaline salts.
4.Intestine	- Excess salts of calcium,Magnesium and Iron excreted along with faeces.
5.Skin	-Excesses of salts ,water,waxes,sterols,hydrocarbons through sweat.

2.How plants manage the waste materials ?

Ans:- Plants do not have specific organs to excrete the waste materials produced during the metabolism.

- Plants can get rid of excess water through transpiration and guttation.
- Waste products may be stored in leaves bark and fruits.
- When these dead leaves, bark and ripe fruits fall off from the tree then waste products in them get rid of.

- Some of the waste materials stored inside the plant and offer defence to the plant from herbivores .
- Some plants secrete chemicals when injured. These chemicals seal the wound and help the plant to recover from an injury.

3. We people have less awareness about organ donation. To motivate people write slogans about organ donation .Ans:

- Open not only money banks – But also organ banks.
- Recycle life ! Be an organ donor.
- Donate your organs be buried or burnt after your death.
- If you are a organ donor –You will have two lives.

4. After learning the chapter Excretion What habits you would like to change of follow for proper function of kidneys ?

Ans: - I will drink sufficient quantity of water every day.

- I will take balanced diet and do regular exercise.
- I will never take pain relievers regularly.
- I will never drink alcohol as it affects the kidney.
- If i get any doubt regarding the malfunction of kidneys, I will consult a good nephrologists.

Multifull choice questions.

- Major component of urine ()
A) Urea B) Sodium C) Water D) Creatinine
- Special excretory organ are absent in ()
A) birds B) amoeba c) spongs D) Both B&C
- Amber colour to urine due to ()
A) Urochrome B) Bilerubin C) Bileverdine D) Chlorides
- Rubber is prepared from ()
A) Tannins B) Resins C) Gums D) Latex
- Bio-diseases is extracted from ()
A) Jatropa B) Pinus C) Tobacco D) Datura

Answers;

1.A 2.D 3.A 4.D 5.A

Fill in the blanks

- Earth worm excretes its waste material through _____
- Reabsorption of useful products takes place in _____ part of the nephron.
- The alkaloid used for malaria treatment is _____

4. The principle involved in dialysis is _____
5. The most poisonous of all waste products metabolism is _____
6. _____ system acts as excretory system in echinodermeta.
7. The storage capacity of urinary bladder _____
8. _____ alkaloid is used as sedative.
9. Absence of _____ hormone produce dilute urine.
10. Structural and functional unit of kidney is _____

Answers:

1. Nephridia 2. Tubular 3. Quinine 4. Diffusion 5. Ammonia 6. Water vascular 7. 300 to 800 ml
8. Scopolamine 9. Vasopressin 10. Nephron

Match the following:

I) Group-A

Group-B

- | | | |
|-----------|---------|----------------|
| 1. Bark | () | A) Nicotine |
| 2. Leaves | () | B) Quinine |
| 3. Fruit | () | C) Reserpine |
| 4. Root | () | D) Morphine |
| 5. Seed | () | E) Scopolamine |
| | | F) Caffeine |

II) Group-A

Group-B

- | | | |
|--------------|---------|---------------------------|
| 1. Cockroach | () | A) Nephridia |
| 2. Earthworm | () | B) Metanephridia |
| 3. Snail | () | C) Flame cells |
| 4. Flatworm | () | D) Malphigian tubule |
| 5. Starfish | () | E) Canal system |
| | | F) Water vascular system. |

III) Group-A

Group-B

- | | | |
|-----------|---------|--------------|
| 1. Birds | () | A) Ammonia |
| 2. Snakes | () | B) Diffusion |

- 3.Fish () C) Urea
4.Man () D) Uricacid
5.Amoeba () E) Greenglands
F) Kidneys.

Answers: I) 1-b,2-A,3-D,4-C,5-F

II) 1-D,2-A,3-B,4-c,5-F

III) 1-F,2-D,3-A,4-C,5-B.

5. Control and coordination

1.How many types of nerves are there?

Ans: There are three types of nerves .they are- 1.Afferent neurons

2. Efferent neurons

3.Association neurons

2.What is reflex arc ?

Ans: A signal path way going up to spinal cord detectors and returning to effectors is called reflex arc.

3.What are the components of central nervous system ?

Ans: Central nervous system includes brain and spinal cord.

4. What are the divisions of brain ?

Ans: The divisions of brain are :

1. Fore brain- Cerebrum, Diencephalon
2. Mid brain- Optic lobes
3. Hind brain- Cerebellum, medulla oblongata

5. What are voluntary actions ? Give examples.

Ans: The movements under the control of the conscious mind are called voluntary actions

Ex: Kicking football ,Lifting bucket of water

6. What are the involuntary actions ? Give examples .

Ans: The movements which are not under the control of the conscious mind are called involuntary actions.

Ex: Respiration, circulation, Digestion.

7. How are reflexes take place in our body ?

Ans: Reflexes are fast immediate automatic and involuntary response of the body .They occur without our thinking . Brain is not involved in these actions.

8. How many types of actions are controlled by nervous system in our body?

Ans: Two types of actions were controlled by nervous system .They are voluntary and involuntary actions.

9. What is the meaning of auxin in greek ?

Ans: The greek word Auxins means to increase .

10. Which root according to you gets signals from afferent nerves ?

Ans: The dorsal root of the spinal cord gets signals from afferent nerves.

11. Which are the organs whose activities are influenced by the sympathetic nervous system.

Ans: Eye- pupil, heart , lungs ,blood vessels, sweat glands ,digestive tract ,kidneys ,penis are the organs influenced by the sympathetic nervous system.

12. What are the organs that receives nerves starting from the brain?

Ans: Eye ,mouth tongue ,salivary glands are the organs receives nerves starting from the brain

13. Which organs whose activities are influenced by the parasympathetic system?

Ans: Stomach, Intestines, Salivary glands ,Reproductive organs etcare the influenced by parasympathetic system

14. What do you understand about the functions of para sympathetic system ?

Ans: para sympathetic system slows down the body functions, feed and breed, rest and digest, urination, defecation, digestion are the functions controlled by parasympathetic systems

2 Marks Questions:

1. What is Synapse ? How is it use ful in transfer information?

Ans: 1.Nerve terminals of axon connects to the dendrites of other neuron or of the muscels.

2. There is a minute space between nerve terminals and dendrites of other neuron or muscles cell of effectors organs.
3. It transfer information from one nerve cell to the other nerve cell or muscles of effector organs.
4. They do not have any protoplasmic conductions.
5. Information is passed from one nerve cell to the other through these spaces either in the form of chemical signals or electrical signals are both.

2.How does photo phototropism occur in plants ?

Ans: 1.Movements of plant towards light is called phototropism

2. In plants stem shows phototropism .
3. Auxin is responsible for phototropism in plants
- 4.It is produced in the meristematic tissue of stem tip.
- 5.Becauseof this chemical tip of stem bend towards light.

3. The axon of nerve cell in hand is shorter than the axon of nerve cell in leg-why ?

Ans: - Axon is longest part in nerve cell.

- Axon unite to forms nerves.
- Nerves originates from brain or spinal chord .
- Legs are so distant from brain or spinal chord than hands.
- So, axon of nerve cell in hand is shorter than the axon of nerve cell in leg.

4.State whether the following actions are voluntary action,reflex action or conditioned reflex .

S.no	Actions	Type of action
1	Blinking Eyes	Involuntary action
2	Cleaning the table	conditioned reflex
3	Playing on the key board	conditioned reflex
4	Salivating when food is put in the mouth	Involuntary action
5	We close our ears when we hear unbearable sound	Involuntary action

5.What will happen to the potted plant kept near window in the room ?

Ans: When a potted plant kept near a window in the room that grows in the direction of light .

- It is called as phototropism.
- It is held due to a hormone called auxin present in the tip of the shoot.

6.If you visit a doctor what doubts you would like to clarify about pancreas?

Ans:

1. Where is pancreas located in our body ?
2. How many parts are there in pancreas ?
3. What are the hormones released by pancreas ?
4. Why pancreas is called a mixed glands ?
5. What is the role of pancreas in sugar level maintenance ?

4 Marks questions :

1. Do you think body's team work maintains functioning of our body ? Justify your answer with an example.

Ans: 1. Body's team work maintains functioning of our body.

2. Receptors, sensory nerves, Brain, Spinal cord, Motor nerves, effector organs work as a team,

Ex-1

1. When we place our legs on a sharp object, receptors of leg receive this information.
2. It is carried to brain through sensory nerve.
3. Brain analyses this information and sends response to effector organs.
4. Effector organ responds accordingly and leg is taken back.

Ex-2

1. Receptors of eye receive information when we read the letters of a book.
2. It is sent to the Brain through sensory nerve.
3. Brain analyses this information and sends response to effector organs. They are tongue and other muscles.
4. It brings movements of tongue, lips and reading is possible.

2. Give an example and explain how plants may immediately respond to stimulus.

Ans: 1. Nervous system and endocrinal system are not distinct in plants as in animals.

2. Plants respond to stimuli due to some chemical substances called phytohormones.

3. If direction of stimulus determines the direction of response, those movements are called tropic movements.

5. The direction of stimulus cannot determine the direction of response; those movements are called nastic movements.

Tropic movements :-

1. Phototropism :- movements of stem towards light.
2. Geotropism :- movements of roots towards earth.
3. Hydrotropism :- movements of roots towards water.
4. Thigmotropism :- movement of tendrils towards the support for touch.
5. Chemotropism :- movement of pollen tube towards ovary.

Nastic movements :- Withdrawal of leaves by touch in touch-me-not plant.

3.How does a neuron differ from an ordinary cell structure ? write notes?

Ans: Nerve cell is different from ordinary cell and is consist of cyton ,axon and dendrite.

- These are covered by myelin sheath .No other cell is covered with myelin sheath .
- Unlike other cells nerve cells has nissal granules in the protoplasm.
- Nerve cells are so long when compared with other cells.
- It's construction facilitate passage of nerve impulse.
- Nerve cells has branched dendrites no other cells has dendrites.
- Nerve cells can divide only during embryonic stages.
- Once the cell is destroyed .No new cell is produced in the place of old one.

4.Man is the most intelligent animal what could be the fact that helped us to reach such conclusion?

Ans: 1.Man is the most intelligent animal .The reason is well developed wonderful brain.

2. The greatness of human brain is to analyse a problem ,logic ,imagination ,cardiation ,recall ,recognition ,remembrance .
- 3.we can analyse a problem even when full information is not given.
- 4.human brain has eisthatic sense to appreciate poetry ,music,sculpture,paintings and beauty of nture .
- 5.Another wonderful capacity of human brain is communication through language.
6. Man has developed a script to the sounds .
- 7.So that information is passed to next generation.
- 8.With the skill in communication humans have became a superior race and rule the planet.

5.Hormones are released in specific place to perform specific function ? Write an account on this.

Ans: According Starling some substances that are released into blood influence some situations in our life.

A) Sensory B) Motar C)Mixed D) None

8. Organ of fight or flight is ()

A) Thyroid B) Pituitary gland C) Testis D) Adrenal

9. Islets of lungger hanus releases ()

A) Insulin B) Gwcagon C) A&B D) None

10. Example for mixed gland ()

A) Liver B) Pancreas C) Testis D) Pituitary

Fill in the blanks:

1.The largest region of the brain is _____

2.A point of contact between two neurons is _____

3._____is responsible for cell elongation.

4. Thyroxine is responsible for _____

5. Heart beat and secretions of salivary glands are under the control of _____ nerve.

6. The part of the brain that helps you in solving puzzles is _____

7. Body posture is maintained by _____ part of brain.

8. _____ Greek physiologist made one notable observation on nervous pathways.

9. The existence of knee jerk due to involvement of _____

10. _____ is the part of brain that interprets sensations and responds to cold, heat, pain and pressure.

Match the following.

I. Group-A

Group-B

- | | | |
|----------------------|-----|--------------------------|
| 1. Galen | () | A) Worked on spinal cord |
| 2. Leonardo da Vinci | () | B) Nerve roots |
| 3. Paul Langerhans | () | C) Nervous pathways |
| 4. Francois Magendie | () | D) Auxin |
| 5. F W Went | () | E) Insulin |

II. Group-A

Group-B

- | | | |
|--------------|-----|-------------------|
| 1. pituitary | () | A) Estrogen |
| 2. Thyroid | () | B) Adrenalin |
| 3. Ovary | () | C) Growth hormone |
| 4. Testis | () | D) Thyroxine |
| 5. Adrenal | () | E) Testosterone. |

Answers:

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

II. 1.cerebrum 2.Synapse 3.Auxins 4. Growth rate and metabolic activity 5.Vagus
6.cerebrum

7.cerebellum 8.Galen 9.A nerve pathway 10.Cerebrum

III. 1) 1-C 2-A 3-E 4-B 5-D 2) 1-C 2-D 3-A 4-E 5-B

6.REPRODUCTION

1 Marks Questions

1.Give example and explain what is meant by external fertilisation ?

Ans: - Fusion of male and female gametes is known as fertilisation .

- If fertilisation occurs outside of the female body it's known as external fertilisation.
- In this process both male and female organisms release their gametes outside to the body.
- Ex. Frog ,Fish .

2.What is the job of amniotic sac ?

- The amnion grows around the embryo it self

- The cavity with in the amnion becomes filled with fluid called amniotic fluid .

- The embryo develops in this fluid filed cavity, which keeps it moist and protects it from minor mechanical injury .

3.Vicky's father wants to grow a single plant having two desirable characters colour full flowers and big fruits what method will you suggest him and why?

Ans.- Grafting enables us to obtain colour full flowers and big fruits having different desired character sticks .

- In this process we can obtain two different desirable character **sticks** in a single plant.

4. How long is an average menstrual cycle from start to finish?

Ans : The cycle of changes that occur in the female reproductive system is called menstrual cycle.

- The average menstrual cycle from start to finish is 28 to 30days.

- The first 14-16 days are known as proliferative phase, the second 14 days are known as Secretary phase.

5.What does the mother's blood take away from the baby and into the placenta ?

Ans : The mother's blood supply Oxygen And nutrients to the baby through placenta and take away waste products like carbon dioxide and nitrogenous waste materials.

6. Expand the ASHA.

Ans: Accredited Social Health Activist .

7.What is ovulation ?

Ans: The release of matured ovum from graffian follicle is known as ovulation.

8. What is placenta ?

Ans: - placenta is the tissue formed by the cells from embryo and mother.

- It provides nourishment to developing embryo.

- It is formed around 12 weeks of pregnancy.

9.What is tissue culture ?

Ans: Growing plants from cells or tissue on a nutrient medium is called tissue culture.

10.Which method of asexual reproduction is used to obtain a plant with desirable characters ?

Ans: Through the method of Grafting we can obtain a plant with more desirable characters.

11. what is meant by sporophyll ?

Ans: The fern leaf ,which have clusters of dot like structure on lower surface is known as sporophyll.

12. What are the membranes that surrounds Embryo?

Ans: Chorion , Amnion and Allantosis are the membrane that surrounds the embryo .

13. what is meant by stock and scion ?

Ans : In the process of grafting , one which is attached to soil is called stock and the cut stem of another plant which have desirable characters is known as scion .

14. How cotyledons are useful for the plant?

- Ans: - cotyledons stores the food.
- They provide nourishment to plant until it develops leaves for food preparation.

2 Marks Questions

15. Why do the animals which shows external fertilisation produce a huge number of eggs each year ?

- Ans: Animals like Fish and frog release their gametes (eggs,sperms) in to the water for external fertilisation .
- The gametes have to overcome lot of external factors such as tides and predators to fertilise.
 - So, many of gametes destroy without fertilisation.
 - Some fertilised eggs and larva s also eaten by some predators due to lack of protection.
 - So, the animals which show external fertilisation produce a huge number of eggs each year to continue their race.

16. When foetus is growing inside the uterus it needs nutrients. What provides these nutrients?

- Ans: - - Chorion is the external surrounded membrane of the embryo. It supplies nutrients at early developing stages.
- Chorion forms placenta along with tissue of uterus. it supplies nutrients and oxygen in further stages
- During further developments placenta forms umbilical cord having blood vessels and supplies nutrients to foetus..

17.what are the advantages of sexual reproduction ?

- Ans:- - - Sexual reproduction promotes the genetic variation.
- Off springs obtain both characters of mother and father result of sexual reproduction.
- Sometimes new characters are also seen in the off springs.
- These new characters may leads to the evolution.
- Generation with new characters give better chance to adujest or adopt to changing environmental conditions.
- Primary organisms activate their genetic material through sexual reproduction.

18. What happens to the wall of uterus during menstruation?

- Ans: - The cycle of changes that occur in the female reproductive system is called menstrual cycle.
- If the ovum is not fertilised during menstrual cycle. It leads to menstruation at the end of the cycle.
 - Usually menstruation lasts for 3to5 days.
 - Unfertilised ovum and some tissue of uterus excreted through vagina along with blood it is known as menstruation.
 - During menstruation some tissue is separated and excreted from uterus.
 - Blood supply to the uterus be controlled.

19. “All unicellular organisms undergo only mitotic division during favourable conditions “-Do you support this statement ? why ?

- Ans: - yes, i support this statement.
- During favourable conditions unicellular organisms give rise to more by splitting into two in the process of binary fission with mitotic divisions
 - During un favourable conditions unicellular organisms form a tough coated layer around it and undergoes multiple fission.

20. What would be the consequences if there is no meiosis in organism that reproduce sexually?

- Ans: - If there is no meiosis gametes will be diploid .
- If these gametes fuse the chromosome number becomes double.
 - If it continues chromosome number will be doubling for each successive generation.
 - It results a lot of variation from generation to generation and leads abnormalities.

21. What precautions will you take to keep away from various sexually transmitted diseases?

Ans : Precautions to be taken to keep away sexually transmitted diseases :-

- - Sexual relations have to maintain with single person only for a life time .
- - Be away from ill-legal sexual relations.
- - use condoms if necessary for safe sex.
- - one should follow the moral values and should be **displained** .
- - should away from drugs and alcohol
- - Always use disposable syringes and sterilised surgical instruments.
- - use tested blood for transfusion.

22. What is meant by “vasectomy”,” tubectomy” ?

Ans:- “vasectomy” and ” tubectomy” are the surgical contraceptive methods.

- In males a small portion of sperm ducts is removed by surgical operation and both ends are tied properly . this method is called vasectomy.
- In females a small portion of fallopian tube is removed by surgical operation and the cut ends are tied .this method is called tubectomy.

23. Now a days we are able to develop seedless fruits water melon, grapes etc..how do you think this happens ?

Ans: formation of seedless fruits are known as parthenogenesis.

- In this process the female gametes develop into zygote without fertilisation. It results in seedless fruits.
- The phyto hormone gibberellins are used to form seedless fruits.

24. What is y parthenogenesis? Give examples?

Ans: Formation of zygote from female gamete without fertilisation is known as parthenogenesis.

- In these process fertilised eggs developed as female ones and un fertilised eggs develop as male ones

Eg: Honeybees, Ants, Wasps ...etc

25. How sexual diseases transmit form one to another?/ how AIDS diseases transmit form one to another ?

Ans: - these diseases spread by-

- unsafe sexual contacts
- using infected devices,
- infected blood transfusion
- infected mother to child.

4 Marks Questions

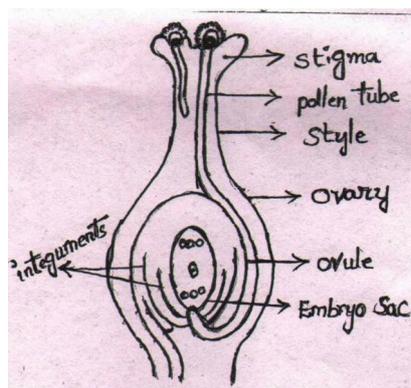
27 . write the differences between stamen-carpel.

Ans :

Stamen	Carpel
<ul style="list-style-type: none"> - Male reproductive part of flower - It has two parts-anther and filament - Stamen produces pollen grains. - Pollen grain contains the male gametes 	<ul style="list-style-type: none"> - Female reproductive part of flower. - It has three parts-style, stigma and ovary. - Carpel produces ovule. - Ovule contain the female gamete ovum .

28. Explain the process of fertilisation in plants?

Ans:



- fertilisation is the process of fusion of male and female gametes.
- Pollen grains reach the stigma of flower Through the pollination .
- Pollen grains received by the stigma germinate and give rise to pollen tubes. Only one pollen tube finally reaches the embryo sac.
- Nucleus of pollen grain divides into two and form two male nuclei.
- Pollen tube breaks and discharges the two male nuclei into the embryo sac.
- One male nucleus approaches the egg cell and fuses with it to form a diploid zygote .this is the first fertilisation
- The other male nucleus reaches the secondary nucleus and fuses with it to form endosperm nucleus which will be triploid .This is second fertilisation in the embryo sac.
- Thus double fertilisation occurs in embryo sac. which is unique in plants.

29. Write the differences between Mitosis and Meiosis

Ans:

Mitosis	Meiosis
<ul style="list-style-type: none"> - It occurs in vegetative cells - Nucleus divides at single time - Two daughter cells are formed. - Daughter cell are diploid. - Chromosome number remain the same in daughter cells. - There is no recombination of genetic material - It occurs more frequently. 	<ul style="list-style-type: none"> - It occurs in reproductive cells - Nucleus divides two times. - Four daughter cells are formed - Daughter cells are haploid. - Chromosome number reduced by half in daughter cells - Recombination of genetic material occurs - It occurs rarely

- Daughter cells form vegetative parts - Mitosis completes in a single phase.	- Daughter cells form gametes - Meiosis completes in two phases
--	--

30. write the differences between male gametes and female gametes ?

Ans:

Male gametes	Female gametes
<ul style="list-style-type: none"> - Male gametes are known as sperm cells. - These are small in size - These are produced in large number. - These have locomotion - These are produced in testes. - These have parts like head, middle piece and tail. - Nucleus is present in the head 	<ul style="list-style-type: none"> - Female gametes are known as ova - these are big in size. - these are produced in less number. - these are stable - these are produced in ovaries . - these have the poles like Animal pole and vegetal pole - Nucleus is present at animal pole.

31. What are the different modes of asexual reproduction ? Cite them with examples.

Ans : If animals reproduce their offspring without formation of gametes is known as asexual reproduction.

- There are so many modes of asexual reproduction .
- They are:-
 - A) **Fission** :- Single celled organisms split into two equal offspring or more offspring.
Eg: paramecium, Amoeba, Bacteria.
 - B) **Budding** :- A growth on the body as bud grows to form identical copy of parent.
Eg: yeast.
 - C) **Fragmentation** :- New individual growth from a separate piece of parent organism.
Eg: algae like Spirogyra and lichens.
 - D) **Parthenogenesis** :- Formation of zygote from female gamete without fertilisation is known as parthenogenesis
Eg: : Honeybees, Ants, Wasps ...etc
 - E) **Regeneration**: if individual is cut or broken up into many pieces. these pieces grow into separate individuals. Eg: planaria

32. In what way does sexual reproduction differ from asexual one ? state at least three reasons ?

Ans: sexual reproduction differs from asexual reproduction in the following ways ;

1. Number of organisms : usually sexual reproduction required two organisms, where asexual reproduction requires one organism.

2. Fusion & formation of gametes :- male and female gametes are formed and fused in sexual reproduction.

- Whereas asexual reproduction there is no formation of gametes and their fusion

3. Cell division: - Meiotic divisions play an important role in sexual reproduction.

- Mitotic divisions play an important role in asexual reproduction.

4. Genetic variation: - Genetic variations are seen in the sexual reproduction.

- Genetic variations are not seen in the asexual reproduction.

5. Time period : sexual reproduction need more time to complete whereas asexual reproduction complete in less time .

6. Evolution : the genetic variation of sexual reproduction leads to evolution where as asexual reproduction don't leads to evolution

I. Fill in the blanks

1. In _____ process new plants are developed from cell.
2. Sperms are temporarily stored in _____ of male reproductive system
3. Fertilisation occurs in _____ of female reproductive system
4. Embryo of 3 months is called _____
5. _____ originates from the digestive canal of the Embryo.
6. During the last part of pregnancy , lymph like fluid accumulates in the mammary glands is known as _____
7. Diploid part in Embryo sac before fertilisation is _____
8. _____ explained role of nucleus in cell division.
9. Percentage of pregnant women in HIV infections _____
10. Expand the DNA _____
11. Expand the ART _____
12. STD means _____
13. In _____ small plants produce from edges of leaves.
14. _____ Process of reproduction where there is shift from sexual to asexual mode of reproduction.
15. The bacteria present in curd _____
16. In _____ disease, cell division doesn't respond to growth regulating factors.
17. Gametes are fuse and form _____
18. The period between two cell divisions is called _____
19. In _____ Phase of cell cycle Chromosomes number will double.
20. The structure of DNA is explained by _____

II. Choose the correct answer

21. Which of the following is not reproduce through spores _____ ()
A) Rhizopus B) bacteria C) Fern D) planaria
22. If the plant isolate form that own species for a long time _____ ()
A) It become sterile B) develops great tendency to self pollination
C) it leads to parthenogenesis D) develops great tendency to cross pollination
23. The embryo sac consisting of ____ cells and ____ nuclei. ()
A)6,7 B)7,8 C)8,7 D)7,6
24. Chromosomes are clearly visible in _____ ()
A) Prophase B) Metaphase C) Anaphase D) Telophase.
25. In meiosis chromosomes divide _____ ()
A) only once B) Two times C) Three times D) none

26. The part of the female reproductive system that produce the eggs? ()
 A) Ovary B) Epididymis C)Cervix D) Fallopian tube
27. The term that we use to describe a sperm cell fusing with an egg cell? ()
 A) Fragmentation B) Fermentation C) Fertilisation D) Fusion
28. How does the sperm break through the egg cell membrane? Choose the option you think is right
 A) Tears a hole in the membrane B) Dissolves the membrane with chemicals
 C) Bites through membrane with teeth D) Squeezes through gaps in the membrane.
29. Why are egg cells larger than sperm cells ? Choose the option you think is right . ()
 A) Egg cells have more cells in them B) Have food store to help growth after fertilisation
 C) Have thicker cell membrane D) Have larger nuclei
30. Which of these things will affect the way a foetus grows ? Choose the option you think is right .
 ()
 A) Chemicals in cigarette smoke B) Alcohol C) Drugs D) All of the above.
31. Which of the following is the correct sequence of step in the human life cycle? Choose the right option
 ()
 A) Babyhood, Child hood ,Adolescence, Adulthood
 B) Childhood, Babyhood, Adult hood, Adolescence
 C)Adolescence, Babyhood, Adulthood , Childhood D) None of these
32. Cell division are active in _____ ()
 A) Heart B) Brain C) bone marrow C) all of the above
33. Sequence of Phases in Cell cycle. ()
 A)G1,S,G2,M B)G2, M, G1,S C) G1, G2,M, S D) M, S, G1, G2
34. The number of daughter cells in meiosis ()
 A)1 B)2 C) 3 D)4
35. In males production of sperms begin from the age ()
 A)13/14 years B)16/17 years C) 10/11 years D) 20/21 years
36. Which part of the male reproductive system produces the sperm cells? ()
37. Which of the following bulbis ()
 A) Bryophyllam B) Onion C) turmeric D) potato
38. Outer membrane of The Embryo ()
 A) Chorion B) Placenta C) Amnion D)umbilical cord
39. In which plant endosperm completely utilised ()
 A) Corn B) Castor C) Bean D) all of the above
40.  What is "x" ? ()
 A) Cotyledon B) Nucleus C) pollen tube D) Style

Match the following.

- | 41. | <u>Group-A</u> | <u>Group-B</u> |
|-----|-------------------------|-----------------------|
| 1. | Fern () | A) Sex determination |
| 2. | Ultrasound scanning () | B) Sporophyll |
| 3. | Meiosis () | C) Gametes |
| 4. | Endosperm () | D) Cotyledons |
| 5. | Mitosis () | E) Growth. |

42.

Group-A

1. G1 phase ()
2. G2 phase ()
3. Telo phase ()
4. Prophase ()
5. Anaphase ()

Group-B

- A) cell size increase
- B) formation of nucleus membrane
- C) Spindle formation
- D) Cell organelles division
- E) Contraction of spindle fibers.

6. Reproduction – key

1	TISSU CULTURE	11	ANTI RETROVIRAL THERAPY	21	D	31	A	41	1-B,2-A,3-C,4-D,5-E
2	EPIDIDYMIS	12	SEXUALLY TRANSMITTED DISEASES	22	B	32	C	42	1-A,2-D,3-B,4-C,5-E
3	FALLOPIAN TUBE	13	<i>BRYO PHYLLUM</i>	23	B	33	A		
4	FOETUS	14	<i>PARTHENO GENESIS</i>	24	A	34	D		
5	ALLONTOIS	15	<i>LACTO BACILLUS</i>	25	A	35	A		
6	COLOSTRUM	16	<i>CANCER</i>	26	A	36			
7	CENTRAL CELL	17	<i>ZYGOTE</i>	27	C	37	C		
8	WALTHER FLEMMING	18	<i>INTER PHASE</i>	28	B	38	A		
9	1.22%	19	<i>S- PHASE</i>	29	B	39			
10	DEOXY RIBO NUCLEIC ACID	20	<i>JAMES WATSON & FRANCIS CRICK</i>	30	D	40	C		

7. Coordination in Life process

1 Mark Questions.

1. What are the organ system involved in digestive of food which we eat ?

Ans: Circulatory system, Digestive system, Central nervous system and Endocrine system are the systems involved in the process of digestion.

2.What are hunger pangs ?

Ans: Hunger contractions in the stomach are known as hunger pangs.

3./what is mastication ?

Ans: The teeth grind, chew and shed the food particles in mouth. This process is called mastication.

4.What is bolus /

Ans: In the mouth as a result of chewing, the food forms into a slurry mass called bolus.

5.Hoe does our stomach is protected by the Secretion of acids ?

Ans: Mucus is secreted by the walls of the stomach .

- It protects the stomach from damage being caused by the secretion of its own acids .

6.What is the main function of villi ?

Ans: Villi increase the area of absorption of nutrients so that the food retained in the folds can remain larger thereby enhancing absorption.

7.What is Chyme ?

Ans: In the stomach the digestive juice turn the food into a smooth porridge like consistency called chime.

8.What is second brain?

Ans: Complicated network of digestive track is nick named as second brain.

9.What is meant by stool?

Ans: The yellowish faecal mass usually called as stool. This is excreted through anus.

10.What is anal spincter ?

Ans: The muscle structure that helps in the opening and closing of the aperture of the canal of large intestine is called as anal spicter.

11.If glucose level falls in blood we feel hungry –Why?

Ans: When glucose level falls in blood we get hunger pangs in the stomach .This is influenced by the secretion of hormone ghrelin in the stomach.

2 Marks questions

1. Rafi said smell also increase our appetite you support this statement –How?

Ans: Yes,Rafi's statement is correct .

- Taste and smell are closely related .
- Any one with severe cough and cold cannot make out the difference in tastes of certain food items.
- Interaction between the sense of taste and smell enhance our perception of the foods we eat.

2. We cannot identify Taste when food is very hot-Why?

Ans: Chemo receptors are active only at body temperature .They become inactive at high or low temperature. Thus we cannot taste when food is hot.

3.What are the differences between bolus and chime ?

Ans:

Bolus	Chyme
- It is the food which is in the form of slurry mass.	- It is the food which is the form of a smooth porridge like consistency.
- This is formed due to mastication .	- This is formed due to enzymatic action.
- This is formed in the buccal cavity	- This is formed in the stomach.

4.What are the differences between mastication and rumination ?

Ans:

Mastication	Rumination
- Durin mastication food size becomes convenient to swallow.	- Durin rumination small pieces of food is incompletely chewed and swallowed.
	-

5.Rajesh feels hungry upon seeing food .Sheela says no more food as she is not hungry. What makes rajesh hungry and what suppress sheela’s hunger ?

Ans: Rajesh’s stomach is empty and on seeing food he feels hungry. The ghrelin hormone released by cells of stomach acts on wall of stomach and causes hunger pangs.Due to this hunger generating signals reach the brain and now Rajesh feels hungry.

Sheela is not hungry because her stomach has full of food .When the stomach is full and there is no need of food any more ,a hormone leptin is secreted that suppresses hunger.

1. If size and shape of small intestine is like oesophagus, What will happen?

Ans:

- Absorption of digested food takes place in small intestine . For this purpose food should travel in this for a long time .
- If small intestine is like oesophagus ,the size of small intestine will be very short.Absorption of digested food will be very less. This leads to many health problems.

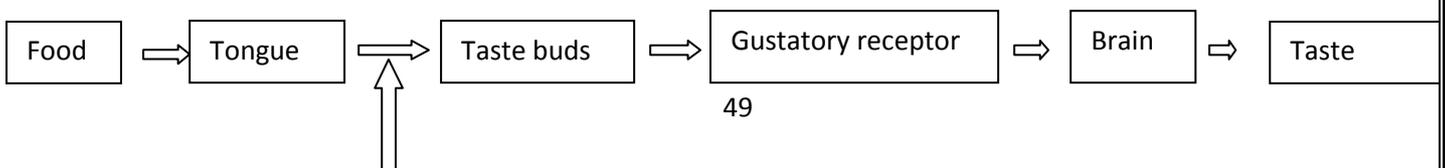
2. Is there any reason for the intestine to be coiled with many folds ? In what way it is helpful during the process of digestion?

Ans:1. To increase the area of absorption of digested food material ,the intestine is coiled with many folds.

- These folds are known as villi. These increase the surface area so that the food retained in the folds can remain longer .There by absorption take place for a long time . For this purpose intestine is coiled with many folds.

8.Draw a block diagram of showing sensation of taste from food material to brain?

Ans:



9.Suggest any two important habitual actions to your friend while eating food ?

Ans: - While eating food donot watch TV look at your food.

- Before swallowing food ,food should be thoroughly grind and chewed.
- We should not drink excessive water while eating food.
- We should not talk while we are swallowing food.

10.How do you appreciate stomach as churning machine .How does this coordination go on ?

Ans: 1.Our stomach is not like a bag with specific volume it is like a pouch which is elastic in nature.

2.The contraction of the stomach muscles squeeze and mix the food with the acids and juice of the stomach.

3. Due to this churning the bouls becomes a smooth porridge like consistency called chime. The large protein molecules are also broken down here.

4.As the contraction in the stomach decrease,prompts the pyloric sphincter of the opening of the stomach and duodenum to relax.

5.Hence appreciate the role of stomach as a churning machine in the process of digestion.

4 Marks questions

1. What experiment should you perform to understand action of saliva on flour?Explain its procedure that you followed.

Ans:

Aim: To prove the action of saliva on flour .

Required apparatus: 1. Two test tubes 2.Watch glass 3.dilute tincture iodine 4.saliva 5.Water 6.Pinch of flour

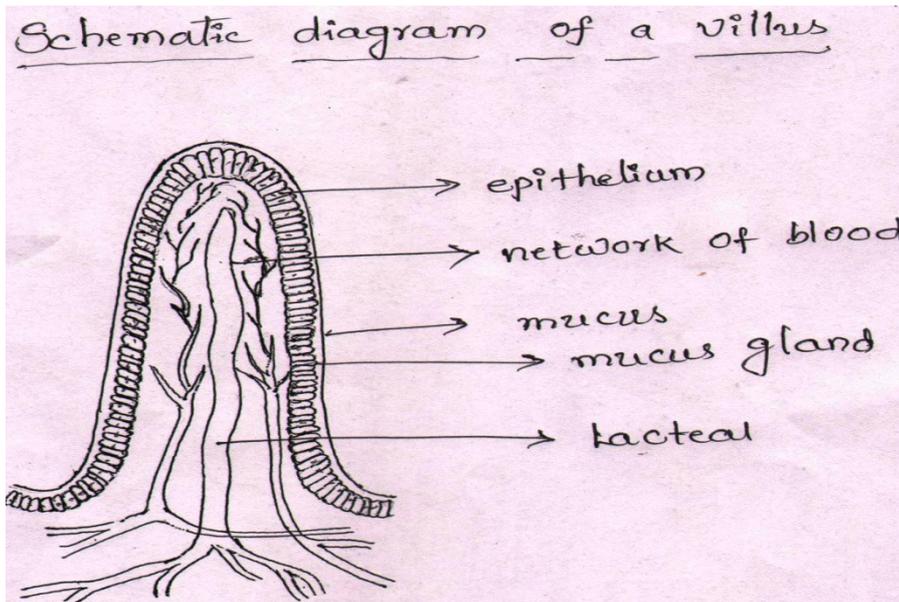
Procedure: Fill the test tube half with water . Add a pinch of flour to it .Stirr well .take a few drops in a watch glass and test for starch with iodine solution. It turns to blue showing the presence of starch.Then divide the solution to equal halves and add a spoon of saliva to one test tube .After some time add dilute iodine solution to each test tube.

Observation: The liquid which do not saliva turns to blue black colour indicating the [resence of stomach. Second test tube solution does not change.

Conclusion: Saliva broke the starch particles into glucose. Hence change of colour did not take place.

2.Draw a schematic diagram of villus in small intestine .Explain how digestive system coordinates with circulatory system.

Ans:



1. Digestive system always coordinates with the circulatory system.
2. Levels of different substance in blood are generally maintained by digestive system.
3. Fall of glucose levels in blood stimulates the release of ghrelin which acts on the wall of stomach and causes hunger pangs. Then we will take food.
4. When glucose levels are normal in blood another hormone called leptin is secreted which suppresses the hunger.
5. After the completion of the digestion end products of digestion are absorbed through villi by the blood vessels of circulatory system.
6. In this way digestive system coordinates with the circulatory system.

3) How can you justify the enteric nervous system as the second brain of the gut ?

Ans: The nervous apparatus of our digestive tract comprises of a vast and complicated network of neurons nicknamed by scientists as the second brain .

- This second brain acts as the connection with the brain and partially determines the mental state and plays a vital role in certain diseases through out the body.
- The enteric nervous system consists of sheaths of neurons embedded in the walls of the long tube of our gut which about 9 metres length.

- The second brain contains 100 million neurons, more than either the spinal cord or peripheral nervous system.
- Due to the presence of these neurons we feel the inner world of our gut and its contents.
- Stimulating, coordinating the breakdown of food, absorbing nutrients and expelling of wastes requires chemical processing, mechanical mixing and rhythmic muscle contraction are completely under the control of enteric nervous system.

Multiple choice Questions

1. Sphincter that helps in opening of stomach into duodenum ()

- A) Cardiac B) pyloric C) Anal D) Gastric

2. The region in brain protein that controls hunger ()

- A) Medulla B) Diencephalon C) Cerebrum D) Midbrain

3. When the sugar levels in the blood decrease this hormone is secreted ()

- A) Ghrelin B) Leptin C) Amylase D) Succus entericus

4. This suppresses the hunger ()

- A) Ghrelin B) Leptin C) Amylase D) Succus entericus

5. Who conducted experiments on conditioned reflexes ()

- A) Pavlov B) Thomas C) Rutherford D) B.J. Brown

6. The soft mass of food in the mouth is ()

- A) Bolus B) Chyme C) Chyle D) Choline

7. Acid that produces in the stomach is ()

- A) H_2SO_4 B) HNO_3 C) HCl D) CH_3COOH

8. This nerve plays a major role in carrying the hunger contractions ()

- A) 5th cranial nerve B) vagus nerve C) 6th cranial nerve D) 8th cranial nerve

Answer:

1. B, 2. B, 3. A, 4. B, 5. A, 6. A, 7. C, 8. B

Fill in the blanks:

1. olfactory receptors present in _____ Trigger signals to brain.

2. P^H of saliva _____ in nature.

3. Ghrelin is secreted from _____

4. _____ play a major role in carrying the hunger pangs.

5. Partially digested food in the stomach _____

6. Reverse peristalsis can be seen in _____

8. Heridity- from parent to progeny

1. Who is the father of genetics ?

Ans: Gregor Johan Mendal

2. Who proposed the theory of natural selection ?

Ans: Charles Robert Darwin

3. Who proposed the theory of inheritance of acquired characters ?

Ans: Jean Baptist Lamarck.

4. Alternative Forms of a gene is called ?

Ans: Alleles.

5. The term used by the mendel for the 'Gene' is ?

Ans: Factor

6. What is the monohybrid phenotypic ratio ?

Ans: 3:1

7. What is the Dihybrid phenotypic ratio?

Ans: Variations.

8. How many Sex chromosomes are there in the human beings?

Ans: Two ('X' & 'Y')

9. Who discovered the double helix structure of DNA ?

Ans: Francis crick & Janes Watson

10. Who was the first person to propose the theory of Evolution ?

Ans: Jean Baptist Lamark.

11. What is F1-Generation ?

Ans: F1 generation Or Filial generation stands for offsprings of first generation.

12. What is embryology ?

Ans: Embryology is the study of the development of an organism from egg to adult stage.

13. What is palaeontology ?

Ans: The study of fossils is called "palaeontology".

2 Marks Question

1. What are variations ? How they do help of organisms ?

Ans: The phenotypic and genotypic differences among individuals in a population is called variations.

Significance of variations:

- Variations are present in nature among all communities of organisms.
- There would perhaps help a certain groups in a community when conditions would otherwise be unfavourable for other groups.
- Variations can be beneficial or harmful according to the ecological niche of the organisms.
- A variation suitable for the particular niche is selected by nature in evolution.
- Thus variations are necessary for the survival of the species.
- Variations are raw materials for evolution.
- Accumulation of these variations over the period leads to the origin of new species.

2. Write a note on analogous organs?

Ans: The organs which are structurally different but functionally similar are known as 'analogous organs'.

- Let us look at the wings of bats and birds we find that wings of bats are skin fold stretched mainly between elongated fingers.
- But the wings of birds are a feathery covering all along the arm.
- The designs of two wings, their structures and components are different.
- They look similar because they have common use for flying but their origins are not common. This makes them analogous organs.

3. Mendel selected pea plant for his experiments. Give the reasons in your own view?

Ans: Mendel chose pea plant for his breeding experiments due to the following advantages.

- It is sexually reproducing.
- Flowers are bisexual.
- Predominantly self-pollinated.
- Convenience in handling.
- Existence of detectable variables.
- It is annual.
- Produces large number of offsprings.
- Controlled crossing can be made.
- True breeding lines are available.
- Fertile hybrids are produced.

4. Explain Darwin's theory of evolution 'Natural selection' with an example?

Ans: Charles Robert Darwin proposed Natural Selection in his famous theory of evolution.

Darwin proposed the theory of "Natural Selection" means nature only selects or decides which organisms should survive or perish in nature. That means survival of the fittest. The organisms with useful traits will survive. The organisms having harmful traits going to be perished or eliminated from its environment.

For example In case of red beetles which are seen on ground are eaten by crows. So the population of red beetles gradually eliminated or pushed from its environment. But at the same time the beetles which are green in colour, which are present on green leaves were not seen by crows easily. So the

green beetles survived in its environment and natural its population have grown. This is nothing but “Natural Selection”.

5. What are variations ? Explain with suitable example ?

Ans: The phenotypic and genotypic differences among individuals in a population are called variations.

Ex:

- In a forest there are two types of deers, in which one type of deer can run very fast.
- But the second type of deer can run less fast lions, tigers, hunt deers for their food.
- In this situation fast running type deers have the survival advantage.
- Thus, Variations which are useful are retained, while these which are harmful are lost.

6. What variations generally you observe in the species of cow ?

Ans: - Some cows possess small sized horns, while some have long curved horns.

- Some cows have prominent hood on their back and some cows haven't hood.
- Some cows have coloured patches on their skin while some are similar in colour.
- Some are short and slow movers and some are tall and fast movers.

6. In What way Mendel used the word 'traits' – Explain with an example ?

Ans: Mendel hypothesized that character's were carried as traits and an organism always carried a pair of factors for a character.

- He also hypothesized that distinguishing traits of the same character were present in the population of an organism.
- He assumed that the traits shown by the pea plant must be in the seeds that produced then. These seeds must have obtained their traits from the parent plants.

7. How does evolution take place ?

Ans: Evolution takes place through the accumulation of new characters or variations in a species of organisms.

- Accumulation of variations occurs only when new characters are passed on from one generation to other and much new characters are added to the pre-existing one.
- So this happens over a long period of time, some times several generations may pass.
- Hence it happens in a slow and steady manner.
- It is not just about change but producing something new and different.
- It is about the formation of new species and their adaptation to their environments.

8. How are new species evolved ?

Ans: Sexual reproduction and errors in DNA copying leads to variations in offspring in a population.

- Organisms contain variations that help to adapt to its environment going to be survived more efficiently.
- But in the same population the organisms which contain the trait which may not help to adapt in its environment may be perished or eliminated slowly.
- These small changes within the population due to variations is called micro evolution.

- When organisms of the same species with variations are separated by some cause for long years , a lot variations may take place in these years.
- These accumulated variations make them unable to mate and produce new offsprings.
- Thus, new Species form and this is known as a speciation or macro evolution.

9. One experimenter cut the tails of parent rats ,What could be the offsprings traits whether the daughter rats contains tails or not ? Explain your argument ?

Ans: - All the daughter rats contain tails.

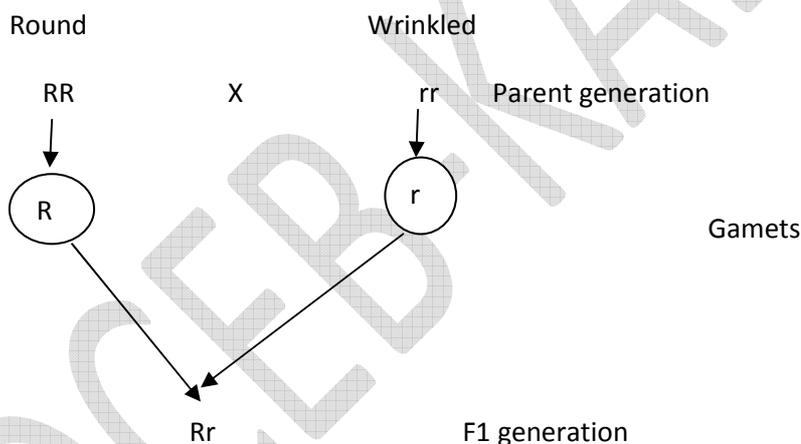
- The bodily changes which may occur due to environment cannot be passed to its offspring.
- Unless there is a genetic change in the parent organism we cannot expect a new character in the offspring.
- Heredity of character either by means of chromosomal recombination or sudden change in the genes.

4 Marks Questions

1. Explain monohybrid experiment with an example ,Which law of inheritance we can understand ?

Ans: A monohybrid cross is a mating between individuals who have different alleles at one genetic locus of interest.

- Mendel crossed a pure breeding round seeded Pea variety (RR) with a pure breeding wrinkled seeded one (rr).



Self pollination among the F1 generation plants:

	R	r
R	RR (Round)	Rr (Round)
r	Rr (Round)	rr (Wrinkled)

F2 generation

- All the peas produced in the F1-generation were round.
- Mendel then allowed these F1 peas to self-pollinate.
- In the F2 generation 75% of the plants produced round seeds and the remaining 25% are wrinkled.

- With this example of monohybrid cross of Mendel we can conclude the following laws of inheritance.
- When pure breeding round (RR) and wrinkled (rr) seeds were crossed, only round seeds are expressed phenotypically in the F1 generation. This indicated that round seed character is dominant over wrinkled seed character.
- When F1 plants are self-pollinated each parent plant passes a randomly selected allele (R or r) of only one of the traits offspring. This is called segregation of alleles of a gene during production of gametes.

2. How do scientists utilize information about fossils ?

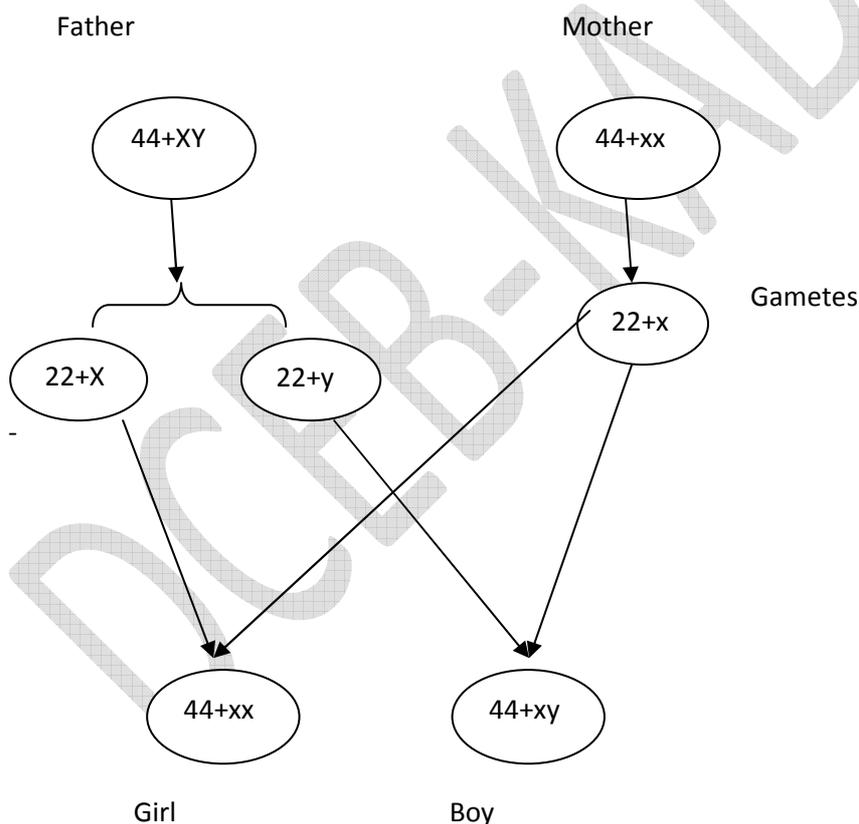
Ans: - Fossils are evidence of ancient life forms or ancient habitats which have been preserved by natural process. The study of fossil is called palaeontology.

- Fossils provide information about what lived in the past.
- By comparing the fossils to their modern counterparts, scientists can know the environment in which the rock containing the fossil was deposited.
- They convey us about genetic condition, heredity characters through inactive chromosomes which are present in them.
- Structures of fossils give a detailed information about their diet, life styles, shape of body etc...
- Fossils provide the information about how species have changed across long periods of the earth's history.

3. How sex determination takes place in humans? Explain with an example?

Ans: Each human cell contains 23 pairs of chromosomes.

- Out of 23 pairs 22 pairs of chromosomes are called autosomes. Remaining pair is called allosomes (sex chromosomes)
- There are two types of sex chromosomes one is "x" and other is "Y" these are two chromosomes determine the sex of an individual.
- Females have two 'X' chromosomes in their cells (XX). Males have one 'X' and 'y' chromosomes in their cells (xy)
- All the gametes (Ovum) produced by woman will be with only 'X' chromosomes. The gametes produced by man will be one "x" chromosomes and other "y" Chromosomes.
- If the gamete carrying 'X' chromosome fertilises with the ovum, the resultant baby will have 'XX' condition. So the baby will be a girl.
- If the sperm carrying "y" chromosome fertilises with the ovum, the resultant baby will have XY condition, So the baby will be a boy.



4. What is the law of independent assortment. Explain with example ?

Ans: After single character tall and dwarf, Mendel further crossed two or more pairs of contrasting characters known as dihybrid crosses. It is also known as law of independent assortment of characters. The genes representing two or more contrasting pairs of traits are distributed independently one another at the time of gamete formation in animals or plants.

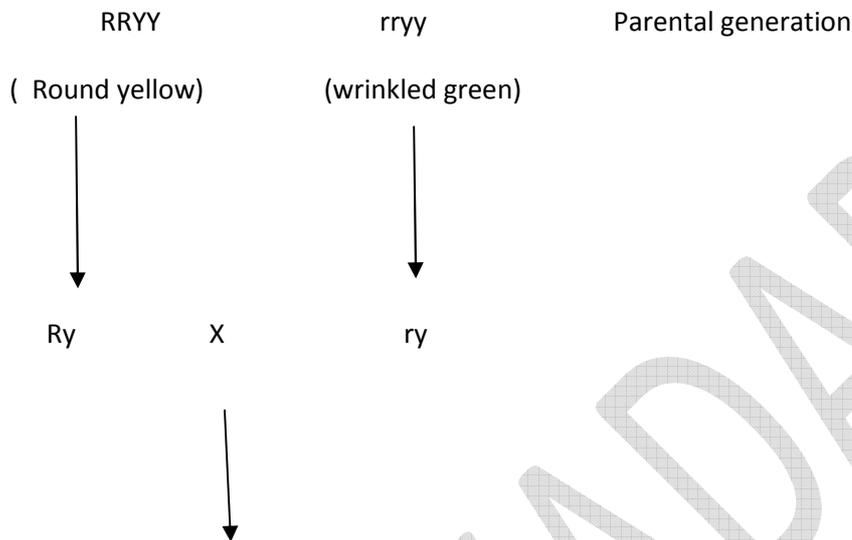
The hybrid cross can clearly understood by representing

R- Represent allele dominant round shape of the seed.

r- Represents allele the recessive gene.

Y- Represents Yellow colour of seed and dominant

y- represents allele for green colour and it is recessive.



	RY	Ry	rY	ry
RY	RRYY	RRYy	RrYY	RrYy
Ry	RRYy	RRyy	RrYY	Rryy
rY	RrYy	RrYy	RrYY	Rryy
ry	RrYy	RRyy	rrYY	rryy

F2 generation

5.What differences mendel identified between parent and F2 Generation ?

Ans: The pure pea plant which are used for crossing are called parent al generations or P-generation.

Ex: TT- tall pea plants

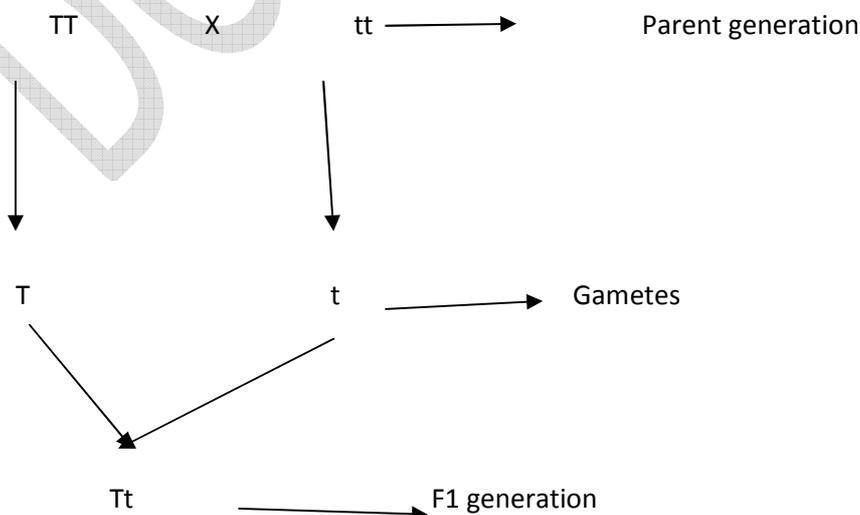
tt-dwarf plants

- The off spring from this cross are the first filiood (F1) generation ((Tt) tall)
- When the plants in the F1-generation were full grown ,mendel allowed then to self pollinate

- Surprisingly, the plants in the F2 generation were a mix of tall and dwarf plants. The dwarfness trait had reappeared even though none of the F2 parent plants were dwarf.
- Mendel counted the tall and dwarf plants about three fourth (3/4) of the plants were tall while one fourth (1/4) were short.
- The 16 squares of the checker board show the different combinations and thus the different genotypes and phenotypes of the F2 generation. The various genotypes and phenotypes extracted from the checker board are as follows.

Genotype	Phenotype
RRYY	Round yellow
RrYY	
RRYy	
RrYy	
rrYY	Wrinkled yellow
rrYy	
RRyy	Round green
Rryy	
rryy	wrinkled green.

The F2 generation can thus be resolved into 9 genotypes and 4 phenotypes. The 9:3:3:1 ratio in F2 generation of a dihybrid cross represents the phenotype ratio or the dihybrid ratio.



Self pollination in F1 generation

Gamets	T	t
T	TT (tall)	Tt (tall)
t	Tt (tall)	tt (dwarf)

Tall plants = $\frac{3}{4}$

Dwarf plants = $\frac{1}{4}$

Choose the correct answer :

1. Which of the following is not a variation ()
A) Coloured petals B) Spines C) Tendrils D) Leaf margin
2. According to Mendel alleles have the following of a character ()
A) Pair of genes B) Responsible for character C) Production of gametes D) Recessive factors
3. Natural selection means ()
A) Natural selects desirable character
B) Natural rejects undesirable characters
C) Nature reacts with an organism
D) A & B
4. Palaeontologists deal with ()
A) Embryological evidences B) Fossil evidences C) Vestigial organ evidences D) All above
5. Who is known as father of genetics?
A) Mendel B) Watson C) Lamarck D) Darwin
6. According to Mendel this character is expressed in F1 generation ()
A) Dominant B) Recessive C) Both D) None of these
7. In F2 generation, percentage of plants that exhibit dominant character is ()
A) 100% B) 25% C) 50% D) 75%
8. The genotype ratio of monohybrid ()
A) 1:2:1 B) 4:1 C) 3:1 D) 1:3:1
9. "One of the allele is dominant over other". This law is known as... ()
A) Law of segregation B) Law of independent C) Law of dominance D) Law of natural selection
10. Sex chromosomes in Female human being ()
A) XX B) XY C) XZ D) YY
11. Transmission of character from parent to offspring is scientifically termed as ()
A) Transmission B) Heredity C) Trait D) Pass on
12. Sex of the body depends on ()
A) Gamete from father B) Gamete from grand father
C) Gamete from mother D) family history
13. Who is the first person to propose the history of evolution ()
A) Mendel B) Darwin C) Lamarck D) Weismann
14. The theory proposed by Jean Baptiste Lamarck ()

A) Malthus theory B) Natural selection C) Inheritance of acquired characters D) Survival of fittest

15. Augustus weismann ,conducted his experiments on _____ ()

A) Cats B)Rats C) Dogs D) Giraffe

16. Finch birds observed by Darwin i this place ()

A) Galapagos islands B) Indonesian Islands C) Andaman islands D) Maldives

17. The book "Principles of Geology " was written by ()

A) Charles lyell B) Charles Darwin C) Jean B lamark D)Malthus

18. Wing of bat and claw of mole are the examples for ()

A) Homologous organs B) Anaogous organs C) Vestigial organ D) All the above.

19. The study of fossils is called ()

A) Embryology B) Palaeontology C) Ecology D) Anatomy

20. Homosapiens came from this continent ()

A) America B) Asia C) Africa D) Australia

Fill in the blanks:

1. Organs which are not useful in animal are calles _____
2. There are nearly _____vestigial organs in human beings
3. The phenotype ratio of dihybrid cross _____
4. The bird identified by Darwin in galapagos islands _____
5. Small changes with in the species are known as _____
6. Macro evolution is _____
7. Carbon dating is used to determine the age of _____
8. _____are said to be a moveing museum of vestigial organs.
9. Genetic drift provides _____

III. Match the following

Group-A

Group_ B

- | | |
|--------------------------|---------------------|
| 1. Homologous organs () | A) Archeopteryx |
| 2. Analogous organs () | B) Palaeontology |
| 3. Vestigial organs () | C) Similarfunctions |
| 4. Fossils () | D) Common structure |
| 5. Connecting link () | E) Hair of Skin. |

Answer: 1.C 2.A 3.A 4.D 5.A 6.A 7.A 8.A 9.C 10.A 11.B 12.A 13.B 14.C 15.B 16.A 17.A 18.A 19.B 20.C

21.Vestigial 22. 180 23.9:3:3:1 24.Finch 25.Micro evolution 26.The process of species formation 27.Fossils.
28.Human being 29.Diversity in the population

30. 1-D,2-C,3-E,4-B,5-A.

9. Our environment

1. What is environment ?

Ans: The sum of physical and biological factors along with their chemical interactions that affect an organism is called environment .

2. What is meant by a biotic and abiotic factors ?

Ans: The physical factors refers to abiotic factors (land, air , water, sunlight) and biological factors to biotic factors.

3. Identify at least 4 other food chain in your surroundings?

Ans: 1. Grass → Goat → Maw

2. Grass → Rabbit → Fox → Wolf

3. Grass → Grasshopper → Frog → Snake → Hawk

4. What is food web?

Ans: A net work of food chains which became inter connected at various trophic levels so as to form a number of feeding connections amongst different organisms of a biotic community food chain are linked in a more complicated relationship called a food web.

5. What is food pyramid ? How many types it is ? Explain.

Ans: Pyramid is a structure whose shape is roughly that of pyramid in the geometric sense . It is three types:-

1. pyramid of numbers

2. pyramid of Biomass

3. pyramid of energy

1. pyramid of numbers:- The number of organisms in a food chain can be represented graphically in a pyramid

Ex: Banyan → Insect → Wood pecker

2. pyramid of Biomass:- The pyramid of biomass represents the relationships that exist between the quantity of living matter at different trophic levels.

Ex: Hawk(1kg) → Fish(10kg) → Zooplankton(100kg) → phytoplankton(1000kg)

3. pyramid of energy:- In ecosystem the quality of energy levels shows .

Ex: Solar energy → producers(chemical energy) → Consumers(chemical energy)



Ecological pyramid was first introduced by a British ecologist Charles Elton.

6.Prepare slogans to promote awareness in your classmates about eco-friendly activities ?

Ans:

1. Never kill creatures-They keep you in Eco futures
2. Grow eco greenery- Create wealthy scenery
3. Enjoy living eco survival –Give you fine revival
4. Synthetic fertilizer protection _More lead to biomagnifications
5. Use pesticides-not to misuse.

7.What is BOD ?

Ans: Biological oxygen demand .That name decrease level or oxygen content in the waste.

8.What is Bio-Accumulation?

Ans: Entering of pollutants in the food chain is called as Bio-accumulation.

9.What is Bio-Magnification?

Ans: The tendency of pollutants to concentrate as they move from one trophic level to the next is known as biomagnifications.

10.Should we use pesticides as they prevent one group and food from pests or we should think of alternatives ? Write your view this issue and give reason for you answer ?

Ans: 1. Pesticides are toxic substance we should utilize them in crop in a judicious manner

2. In discriminate use of pesticides cause harmful to the entire ecosystem.

3. So it is easy to say “ban all the pesticides but the pest still have to be kept in check.

4. Simultaneously we should find other effective methods of controlling pests which have for less harmful effects and are based on sound biological principles.

1) Biological control:- Introducing natural predator or parasitic of the pest.

2) Rotation of crops :-Growing different crops or particular piece of land in successive years reduce the build up of pests from year to year. This way less damage is done.

3) Sterility :- Rendering the males of pest species sterile .

11. If you want more about flow energy in an eco system .what question you are going to ask?

Ans: 1. Are all the ecosystem show similar way of energy flow ?

2. How for now living components influence flow of energy in an ecosystem ?

3. Which ecosystem shows much amount of energy flow?
4. What is the role of human beings in term of an ecosystem for flow of energy ?
5. Why flow of energy decrease flow producers top carnivores?

Fill in the blanks

1. Food chain always starts with _____
2. The animals fit into special positions with in food web ,is described as _____
3. Which ecological pyramid is inverted in aquatic ecosystem _____
4. Expand the BOD _____
5. The process of entry of pollutants into a food chain is known as _____
6. The tendency of pollutants to concentrate from one trophic level to the next is known as _____

Answers: 1.plants 2.niche 3.pyramid of biomass 4.Biological oxygen demand 5.bio accumulation
6.Biomagnification

Match the following :

I) Group-A

Group-B

- | | | |
|------------------|-----|-----------------------|
| 1. Charles Elton | () | A) Oxygen influence |
| 2. BOD | () | B) Rice influence |
| 3. Top carnivore | () | C) Goat |
| 4. Producers | () | D) Ecological pyramid |
| 5. Herbivores | () | E) Eagle |

II) Group-A

Group-B

- | | | |
|---------------------|-----|----------------------|
| 1. Tiger | () | A) Herbivores |
| 2. Crow | () | B) Producers |
| 3. Cow | () | C) Omnivores |
| 4. Green grow plant | () | D) Bio accumulation. |
| 5. EBWR | () | E) carnivore |

Answer: I. 1-D, 2-A, 3-E, 4-B, 5-C.

II. 1-E, 2-C, 3-A, 4-B, 5-D

Unit;10 Natural resources

One mark question

1.Expand ICRISAT?Where is it located?

Ans:ICRISAT: international crops research institute for sem:Arid Tropiesit is in Hydereabad.

2. What is bio-Diversity?

Ans:Bio-diversity is the variety of living things present on the4 earth.

3.What is a percolation tank?

Ans: These are normally earthen dams with masonry Structures where water may overflow.

4.What is Micro irrigation?

Ans.Irrigation of water by minimal usagefor supplying to crop plants Ex: Drip irrigation,Sprinklers.

5. What is sustainable development?

Ans:.Development and conservation can co-exist in harmony when we use the environment is ways that wnsure we have resources for the future it is called sustainable development.

6.Define Biofuels?

Ans.The fuels which are extracted from living beings Plants like Jatropha cureas plants called Bio-fuels.

7.What is contour strip farming?

Ans: A soil conservation method plantations are done across a shape or across the path of the prevailing wind

8.What is Dyke management?

Ans:Protecting the bunds of canals bankof rivers and dykes of tanks with proper precavtions to store or channalise the water is called dyke management.

9.Expand IVCCN?

Ans:IUCN: International uniorfor the conservation of nature .

10.Why do the rivers fail to benefit the state to an extent they shouldhave?

Ans.Improper maintenance of reservoirs dams, and failure in con struction of reservoirs wherever possible.

Four marks Quuestions

1.Natural resources are decreased more rapidly .Guess what will be the consequences?

Ans: The effects of natural resource depletion is drastic. This particular Phenomenon calls for a substitution to take over the place of resource that is no longer available of one cannot be found then it can alter life dramatically and after the population's habits of consumption . For example of we ran out of

oil we would either have to use cars powered by electricity or another fuel source. Depletion of several natural resources has several significant impacts on the environment. The increase of CO₂ content in the atmosphere affecting the water cycle. This leads to soil erosion and damage to bio-diversity.

2. Suggest some ways of reusing a resource in your locality?

A: 1. We should reuse the water from bath rooms and kitchen to grow a kitchen garden.

2. Donating old, working computers to a school.

3. Reuse products for a purpose save paper and plastic bags and repair broken appliances, furniture and toys

4. Reuse products in different ways Use a coffee can to pack a lunch, use plastic microwave dinner trays as picnic dishes.

5. Sell old clothes, appliances, toys, and furniture at auction halls for old articles or donate them to charities.

6. Use reusable containers rather than plastic wrap.

7. Use a ceramic coffee mug instead of paper cups.

8. Reuse grocery bags or bring your own cloth bags to the store. Do not buy a bag from the store unless you need one.

2 Marks questions

1. Why should one sort wastes carefully before discarding them from house ?

Ans: There may be some products which can be reused and so wastes should be discarded from home after sorting them carefully.

2. How can wells be recharged?

Ans: By building dykes or barriers in the drains and retaining the runoff rain water in it. A recharge well pushes back surface water into the groundwater system. Rainwater that flows down from terrace drains and surface water flowing in storm water drains, can be filtered, de-silted and recharged into open wells.

3. Proper utilization of natural resources is the way to show gratitude to our nation. Can you support this statement? Give your reasons?

Ans: I can support this statement. We are getting everything from nature there are so many resources for utilization. If we utilize them properly we can save future generations.

4. What do fossil fuels provide us?

Ans: Coal, oil, and natural gas are the fossil fuels. Fossil fuels provide us materials which also include plastics, synthetic rubber, fabrics like nylon, medicines, cosmetics, waxes, cleaning products, etc.

5. Expand IUCN? Explain its role in conservation of nature ?

Ans: 1. The International Union for the Conservation of Nature is an alliance of governments and private groups founded in 1948.

2. It works to protect wild life and habitats.

3.Many governments have used the IUCN model to develop their own conservation plans.

4.In addition the IUCN monitors the status of endangered wild life , Threatened national parks and preserves and other environments around the world.

6.What do you think about 3R concept ?

Ans: The 3R concept is to save environment they are :-Reduce,Reuse,Recycle

Reduce: By repairing leaky taps and avoiding ashower or switching off unnecessary lights and fans.

Reuse: By requiring of thrown away paper and wrapping papers would save plants and minimise pollution.

Recycle: Recycling plastic we can reduce pollution.

Choose the correct answer:

1.Percolation tanks helps to ()

- A) Supply for agriculture B) Increase ground water level
- C) Preserve rain water D) Prevent over flow of water from tanks

2.Which of the following practice is suitable to farmer with less water resources.

- A) Select short term crops B) Cultivate commercial crops
- C) Adapt drip system D) Crop holiday

3.Which of the fossil fuel reserves decrease more rapidly in india ()

- A) Natural gas B) Coal C) Petroleum D) All

4.These amount of toxic chemicals leak into the surrounding eco system because of ()

- A) Industry B) mining C) Pesticides D) Modern technology

5. Sustainable development means ()

- A) Prevention of waste B) Stable growth C) Development with out damaging
- D) High yielding in less time

6.Gliricidia plant is intended for ()

- A) To preserve bio fuel B) To make soil nitrogen C) It is a good fruit yielding plant
- D) none of them.

7.Convention on bio-diversity came into force on ()

- A) 29 Dec 1993 B) 6 June 1992 C) 3Oct 1994 D) 4 Oct 1993

8.New approach of conservation is the establishment ()

- A) Sanctuaries B) Reserve forest C) National parks D) Biospheres

Answers:

1.B,2.B,3.D,4.A,5.C,6.B,7.A,8.D

Fill in the blanks

1. _____ Plants are used for production of bio fuel
2. Bio diversity is important for more than just food and for ____ also
3. Example for non renewable resource is _____
4. _____ is the alternative to prevent ground water depletion.
5. Cultivation paddy is suitable for _____ areas.
6. Green house effect is due to _____
7. Contour strip cropping is a _____

Answer:

1. Jatropha curcas 2. Medicines 3. Coal, petroleum, Natural gas 4. Recharging 5. Water rich 6. CO₂ 7. Soil conservation method

Environmental Education

1. what are the causes of fluorosis and write their effects?

Ans:- . Presence of higher quantities of fluoride in drinking water leads to fluorosis., and it is serious by food that people eat, economical status of people, mal nutrition and physical work etc

Effects of fluorosis :-

1. Teeth becomes yellow in colour
2. bone growth is affected
3. bone deformation occurs .
4. People effected with fluorosis cannot stand erect and walk properly.
5. People are not able to do any work.

2. people living other countries where fluoride problems is higher than our state are not suffered by fluorosis . Why?

Ans:- Presence of higher quantities of fluoride in drinking water leads to fluorosis., and it is serious by food that people eat, economical status of people, mal nutrition and physical work etc

- Whereas in other countries , food that people eat , economical status of people and physical work is better than our country so, fluorosis is not a problem to them.

3. Plants and water are the main sources to make our house environment healthy. What would you do implement them successfully ?

Ans :- I do plantation along the compound wall and empty space besides the house and make garden.

- Waste water that used in kitchen and for other purpose, to be used for this house garden.

4. . what are the precaution to protect rain water ?

Ans: - It is possible store the rain water for a long time by the construction of check dams, reservoirs .

- It is possible store more rain water by remove the sediments and repair the bunds of water bodies before the rainy season.
- Construct soak pits in houses , schools, offices, bus stations and where ever possible. And make free our surroundings concrete free .it helps to increase ground water levels.
- Incentives may be announced to persons and families who save water .

5. how to eradicate the dangerous fluorosis disease ?

Ans: precaution to eradicate fluorosis disease:-

3. Stop the drinking fluoride water.
4. Have to drink distilled water .
5. Take good food with better nutrients.
6. Tea leaves accumulates more fluorine. so, it is better avoid taking tea.
7. Don't use vessels coating with Teflon for cooking.

6.Wat are the causes for Global warming ?

Ans: Carbon dioxide, Nitrogen oxides , sulphur oxides ,Chloro fluoro carbons, methane etc are called green house gases.

- These gases increase the atmosphere temperature
- Factories, chemical industries and burning of plastics emits these gases.

7.What precaution should be take to prevent diseases ?

ANs: Awareness in the public

- Washing handa before eating
- Keeping surroundings clean.
- Drinking boiled water and cooked food.
- Awareness in the public

8..Write 4 ways saving house hold gases?

Ans:

1. Prevent leakage
2. Soaking substance before cooking
3. Cooking in small burner
4. We must reduce flame ,when boiling process starts.

9.How do you manage waste in your house?

Ans: I try to reduce production of waste

- I keep separate dust bins for wet waste and dry waste.
- I separate biodegradable and non bio degradable substances.
- I replace plastic With steel and cotton.
- I convert biological wastes into vermin compost.

10. How can we prevent the water pollution ?

- Domestic wastes should not be released into the water bodies.
- Industrial effluents should be purified before releasing into water bodies.
- Leakage of oils from vehicles, should be prevented.
- Biological waste like blood, flesh should not be thrown into water bodies.
- Proper drainage system should be followed.

11. How can you prevent seasonal diseases ?

Ans: Living in healthy atmosphere prevents seasonal diseases

- Drinking boiled and cooled water
- Foods and water be covered
- Better to eat food when it is hot
- Controlling vector population & reservoir population of pathogens.
- Washing hands before eating and after defecation
- Taking vaccination against diseases.

12. Write five suggestions to keep surroundings clean ?

Ans: 1. Do not dispose domestic waste on the road and maintain separate dustbins for wet waste and dry waste.

2. Ban open defecation and maintain proper toilet system
3. Plant a tree where it is possible
4. Avoid the use of plastic
5. Try to reduce the production of household waste.

13. Write four methods to protect the natural resources ?

Ans: 1. Decrease pollutants released into water and air

2. Implementation of eco-friendly programs such as social forestry, vanamahosthavam etc...

1. Harvesting of rain water by water soak pits and percolation tanks.
2. Usage of

14. Write the four effects of particulate pollutants.

Ans: Particulate matter causes global warming

- They absorb light and reduce visibility
- Causes various respiratory diseases.
- Cause depletion of ozone layer.

Choose the correct answer.

1. Which of the following is not a particulate pollutant

- A) Coal dust B) Pollen grains C) Fly ash D) Acid

2. which of the following is not source for particulate pollutant

A) Sprays B) industries c) Plants D) River

3. Which of the following can't be prevented by vaccination

A) Diphtheria B) Tetanus C) Cancer D) Cholera

4. Which one of the following causes disease

A) Fresh air B) Rain C) living vectors D) Boiled water

5. Which one of the following is not eco friendly activity

A) Building Toilets B) Drinking Boiled water C) Planting trees D) Using sprays

3) Agents that cause pollution _____

Match the following

Group-A

1. Neurologist ()
2. Nephrologists ()
3. Dermatologist ()
4. Ophthalmologist ()
5. Pulmonologist ()

Group-B

- A) Lungs
- B) Eyes
- C) Mind
- D) Kidney
- E) Skin

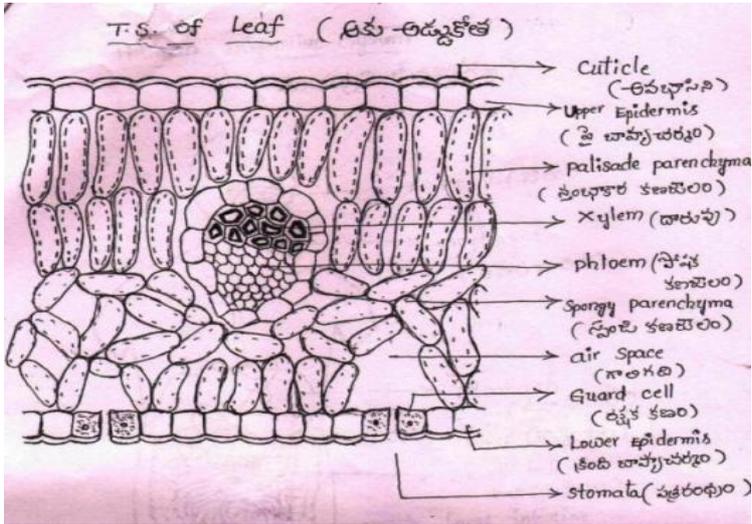
Answer: 1-D 2-D 3-C 4-C 5-D 6. POLLUTANTS

6. Who explained about fluorine? Ans: Shele

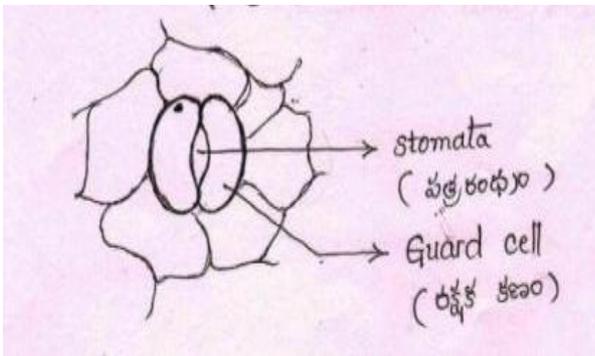
7. who separated fluorine element from its ore? Ans: Maizen

IMPORTANT DIAGRAMS

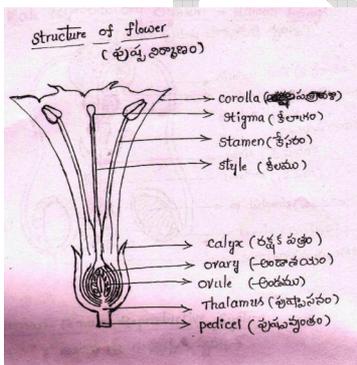
1. Draw a neat label diagram of t.s of leaf.



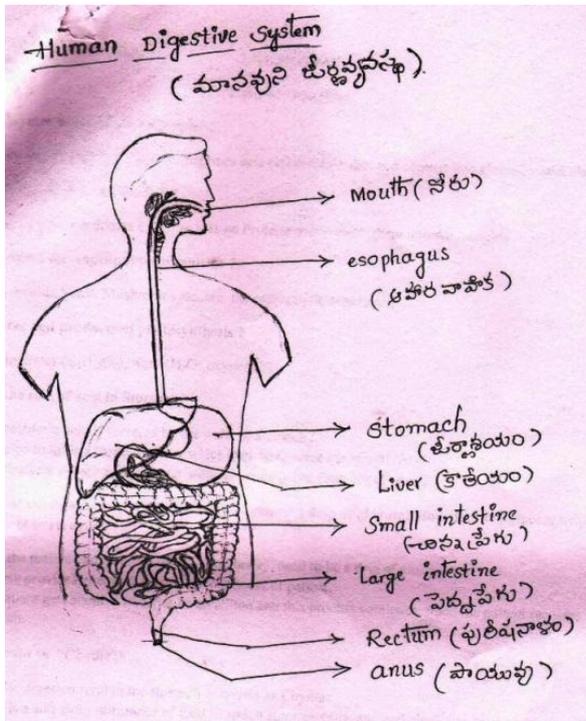
2. Draw a neat label diagram of stomata ?



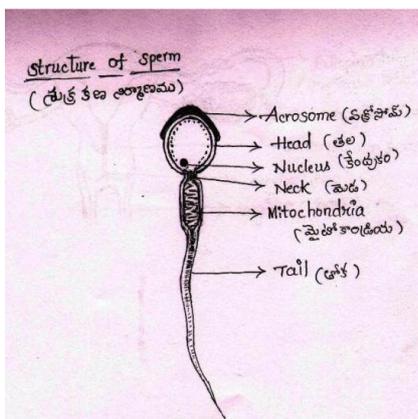
3. Draw a neat label diagram of flower.



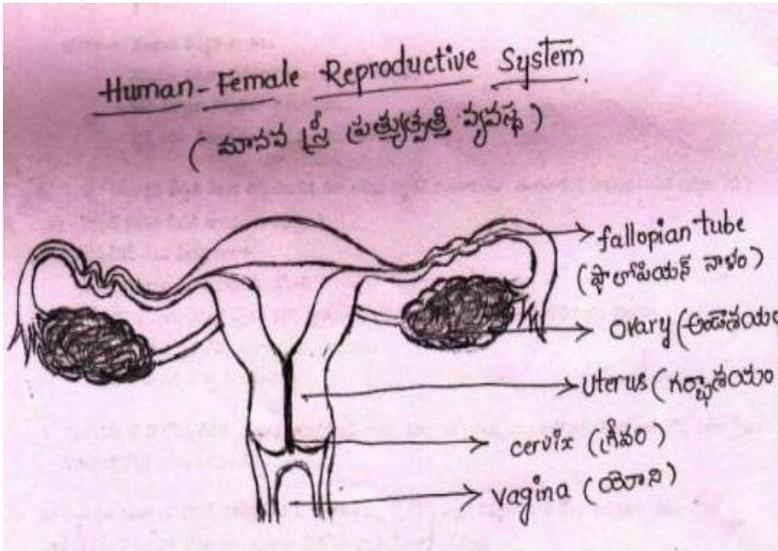
4. Draw a neat label diagram of human digestive system



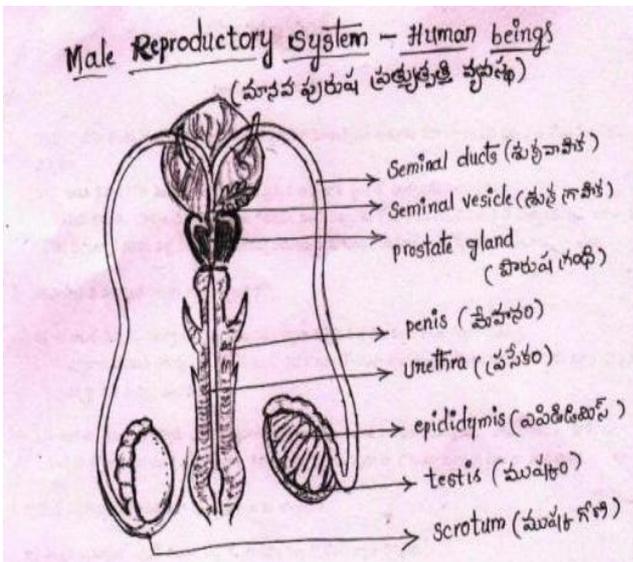
5..Draw a neat label diagram of human sperm cell



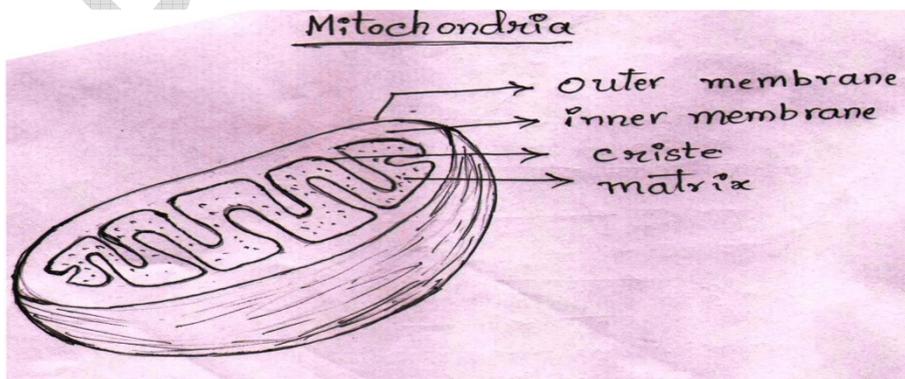
6..Draw a neat label diagram human female reproductive system.



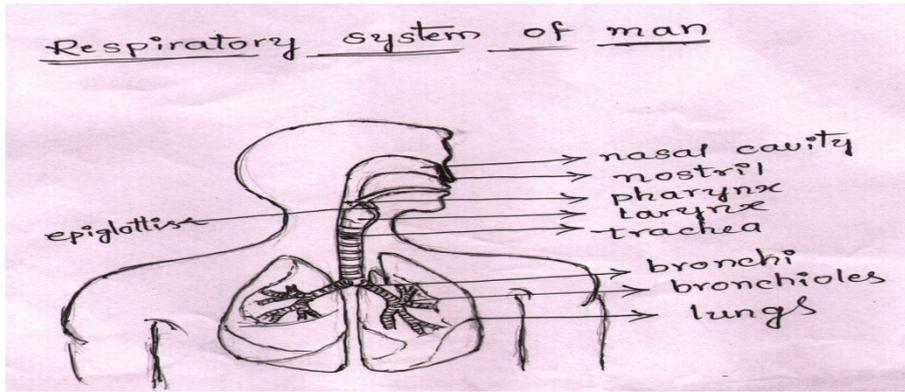
7..Draw a neat label diagram human male reproductive system



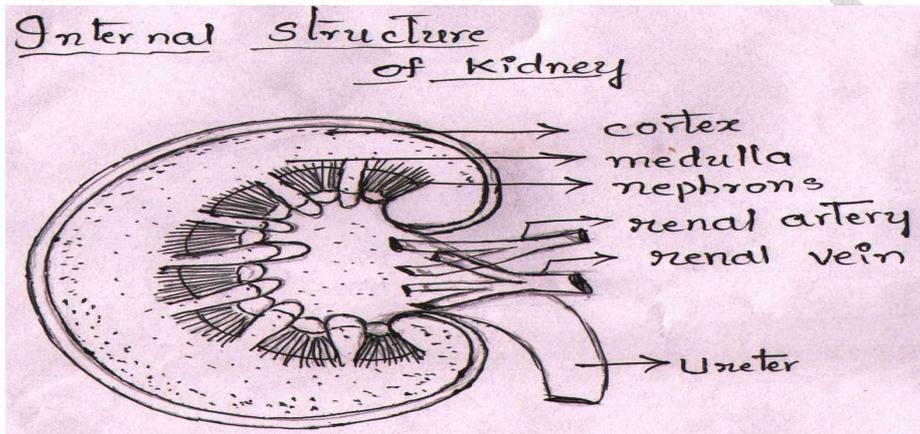
8..Draw the structure of mitochondria and label parts.



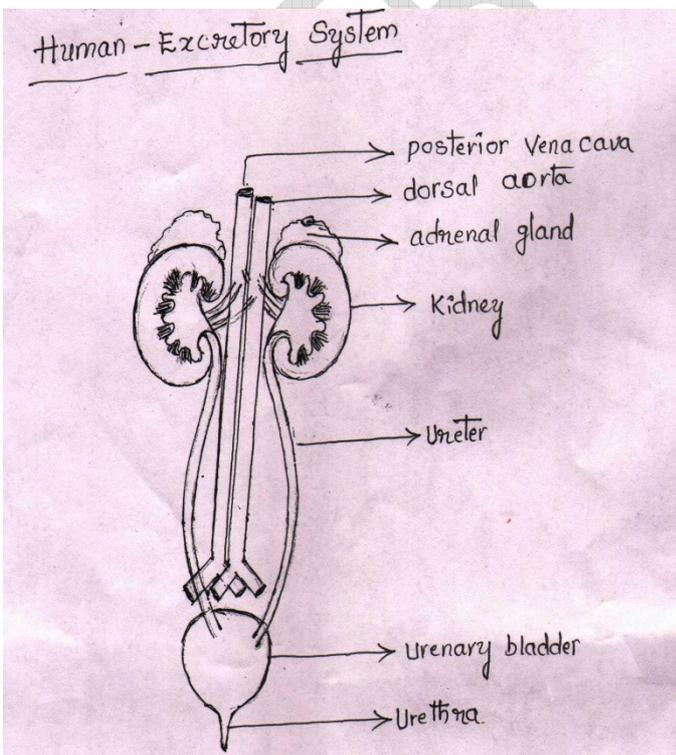
9..Draw the diagram of respiratory system of man.



10. Draw neat labelled diagram of L.S of Kidney.



11. Draw a neat labelled diagram of excretory systems in man.



12. Draw neat labelled diagram of structure of nephron.

