

BIOLOGY

లక్ష్మం 10/10 జీపీఏ

- చాప్టర్ వారీగా ఒక మార్కు ప్రశ్నలు, సమాధానాలు
- ముఖ్యమైన రెండు, నాలుగు మార్కుల ప్రశ్నలు
- చాప్టర్ వారీగా ప్రాక్టీస్ బట్లు
- 10/10 జీపీఏ సాధనకు ప్రిపరేషన్ టిప్స్

టిప్స్

<p>10</p> <p>మంచి మార్కులు సాధించాలంటే ప్రయోగాలపై పట్టు సాధించాలి. ప్రయోగాల నిర్వహణలో పాటు, వాటిని నిర్వహించే తీరు, అవసరమైన పరికరాలు, ఫలితాలపై అవగాహన పెంపొందించుకోవాలి.</p>	<p>10</p> <p>స్వయంగా ఒక అంశాన్ని వివరించగలగడం, పోలికలు-భేదాలు చెప్పడం, కారణాలు చెప్పే నైపుణ్యాలు సొంతం చేసుకునే విధంగా ప్రిపరేషన్ ఉండాలి.</p>	<p>10</p> <p>బొమ్మలు గీయడం, భాగాలు గుర్తించడం, సమాచార నైపుణ్యాల ద్వారా సులువుగా బయాలజీలో మార్కులు సొంతం చేసుకోవచ్చు. ఫ్లో చార్టులు, బ్లాక్ డయాగ్రామ్లు వేసే నైపుణ్యం అవసరం.</p>	<p>10</p> <p>కిరణజన్య సంయోగక్రియ, డయాలసిస్, హృదయం పనితీరు, అనియంత్రిత వ్యవస్థలు, మెదడు పనితీరు - సిద్ధాంతాలు, డార్విన్ పరిణామ వాదం, ఆవరణ వ్యవస్థలు, జీవావరణ పరమిడ్లు వంటి అంశాలపై దృష్టిసారించాలి.</p>	<p>10</p> <p>చేతి రాతను మెరుగుపరచుకోవాలి. అక్షరాల సౌష్ఠవాన్ని గుర్తించి, ప్రాక్టీస్ చేయడం ద్వారా రైటింగ్ను మెరుగుపరచుకోవచ్చు. పదాలు, వాక్యాల మధ్య అవసరమైన మేరకు స్పేస్ ఉండేలా చూసుకోవాలి.</p>
<p>10</p> <p>బ్లూ, బ్లాక్ ఇంకు పెన్సుల్లో దేన్నయినా ఉపయోగించవచ్చు. ఎర్ర సిరా పెన్ వాడకూడదు. అవసరమైతే ముఖ్యమైన హెడ్లింగ్లను స్కెచ్ తో అండర్లైన్ చేసుకోవచ్చు.</p>	<p>10</p> <p>సమాధానాలను పాయింట్ల వారీగా ఇవ్వచ్చు. మోడల్ పేపర్లలోని ప్రశ్నలకు మీరు రాసే సమాధానాలను ఉపాధ్యాయులతో మూల్యాంకన చేయించుకోవాలి.</p>	<p>10</p> <p>బహుశైచ్చిక ప్రశ్నలకు సమాధానాలు గుర్తించేటప్పుడు ఒకటి రెండు సార్లు సరిచూసుకోవాలి.</p>	<p>10</p> <p>పరీక్ష సమయానికి ముందే హాలుకు చేరుకోవడం, ఒత్తిడిని, భయాన్ని దరిచేరనీయొద్దు.</p>	<p>10</p> <p>పరీక్షల సమయంలో ఆరోగ్యాన్ని కాపాడుకోవడం చాలా ముఖ్యం. తేలికైన ఆహారం తీసుకోవాలి.</p>

ఇంటర్ విద్యలో శ్రీగాయత్రీ నెం.1... ఇంటర్కు శ్రీగాయత్రీ కరెక్ట్ ప్లేస్ !

ఈ నిజాన్ని వేలాది విద్యార్థులు నిర్ణయించుకుంటున్నారు... వారి తల్లిదండ్రులు నిర్ణయించుకుంటున్నారు... అందుకే టెన్త్ తర్వాత ఇంటర్కు శ్రీగాయత్రీని ఎంచుకుంటున్నారు!



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

బయాలజీ- ప్రిపరేషన్ ప్రణాళిక



Prepared by:

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తిరుమలయ్యపల్లి, చిత్తూరు జిల్లా.

జీవశాస్త్రం సహజంగానే తేలికైన సబ్జెక్టు. సైన్స్ లో 10/10 గ్రేడు పొందినట్లు సాధించాలనుకునే వారు జీవశాస్త్రంపై ఎక్కువగా దృష్టిసారినారు. ఇందులో పూర్తి స్థాయిలో మార్కులు సాధించడానికి అవకాశాలు ఎక్కువగా ఉన్నాయి. జీవశాస్త్రంలో మొత్తం 10 అధ్యాయాలు ఉన్నాయి. వీటితో పాటు పర్యావరణ విద్య కూడా సిలబస్ లో ఉంది. పాఠ్యాంశాల వారీగా మార్కుల విభజన ఇలా ఉంటుంది..

- ◆ 1 నుంచి 8వ పాఠం వరకు ప్రతి పాఠానికి 8 మార్కులు 8x8=64 మార్కులు.
- ◆ 9, 10 చాప్టర్లు 6x2 =12 మార్కులు.
- ◆ పర్యావరణ విద్య 3 మార్కులు.

మొత్తం 79 మార్కులు

పశ్చపత్రం చాయిన్ తో సహా 79 మార్కులకు ఉంటుంది. మొత్తం 54 ప్రశ్నలు ఉంటాయి. పార్టు-ఎలో 24 ప్రశ్నలు, పార్టు-బిలో 30 ప్రశ్నలు ఉంటాయి. విద్యార్థులు 50 మార్కులకు మాత్రమే సమాధానాలు రాయాల్సి ఉంటుంది.

- ◆ సమాధానాలు రాయడానికి రెండున్నర గంటల సమయం అందుబాటులో ఉంటుంది. దీనికి అనుగుణంగా విద్యార్థులు ప్రణాళిక వేసుకోవాలి.
- ◆ 5 మార్కులు, 4 మార్కులు, 2 మార్కులు, 1 మార్కు, 1/2 మార్కు ప్రశ్నలు ఉంటాయి. ఒక మార్కు ప్రశ్నకు 1-2 వాక్యాలు, 2 మార్కుల ప్రశ్నకు 3-4 వాక్యాలు, 4 మార్కుల ప్రశ్నకు 6-7 వాక్యాలు, 5 మార్కుల ప్రశ్నకు బొమ్మతో పాటు అడిగిన విధంగా రాయాలి. అవసరమైన చోట చిత్రాలు, ప్లోచార్టు, బ్లాక్ డయాగ్రామ్లు ఉపయోగించవచ్చు. దీనిపై ఎలాంటి నిషేధం లేదు.
- ◆ ప్రశ్నలన్నీ నిర్ణీత విద్యాప్రమాణాల ఆధారంగా వస్తాయి. ప్రతి ప్రమాణానికి మార్కులను విడిగా కేటాయిస్తారు.

సంఖ్య	విద్యాప్రమాణం	మార్కుల శాతం	మార్కులు
1.	విషయావగాహన	40%	31
2.	ప్రశ్నించడం, పరికల్పన చేయడం	10%	8
3.	ప్రయోగాలు చేయడం, క్షేత్ర పర్యటన	15%	12
4.	సమాచార నైపుణ్యం	15%	12
5.	చిత్రాల ద్వారా భావప్రసారం	10%	8
6.	నిత్యజీవిత వినియోగం	10%	8



- ◆ ఈ వెయిట్ జీ ఆధారంగా మార్కుల కేటాయింపు, ప్రశ్నపత్రాల రూపకల్పన ఉంటుంది. కాబట్టి దీనికి అనుగుణంగా విద్యార్థులు తమ ప్రిపరేషన్ ప్రణాళికను రూపొందించుకోవాలి.

ప్రశ్నపత్రం కొన్ని అపోహలు-నిజాలు

గతేడాది పాత విధానంలోనే పరీక్షలు నిర్వహిస్తామని చెప్పినప్పటికీ, జీవశాస్త్ర ప్రశ్నపత్రం విద్యా ప్రమాణాల ఆధారంగా సరైన కోణంలో వచ్చిందని చెప్పొచ్చు. ఈ నేపథ్యంలో ఉపాధ్యాయులు, విద్యార్థుల్లో కొన్ని అపోహలు ఉన్నాయి.

- అపోహ:**
- ◆ ప్రశ్నపత్రంలో పరోక్షంగా ప్రశ్నలు వస్తాయి. జీవశాస్త్రం ప్రశ్నలకు సమాధానాలు రాయడం చాలా కష్టం.
- నిజం:** విద్యా ప్రమాణాల ఆధారంగానే అన్ని ప్రశ్నలు వస్తాయి. ఇందులో టిప్స్ అనే మాటకు తావులేదు. ఎక్కువ ప్రశ్నపత్రాలను పరిశీలించడం ద్వారా ప్రశ్నలు వచ్చే తీరుపై అవగాహన పెంపొందించుకోవచ్చు.
 - ◆ పాఠ్యపుస్తకంలో ఉన్న ప్రశ్నలు ఏవీరావు?

నిజం: ఇది తప్పు. పాఠం చివర ఉన్న 'అభ్యసనం మొదలగుపరచుకుందాం..' నుంచి దాదాపు 60 శాతం ప్రశ్నలు వస్తాయి. మిగిలిన 40 శాతం కూడా పాఠానికి సంబంధించిన అంశాలపైనే (కంటింటి రిలేటివ్) అడుగుతారు. విద్యార్థులను భయభ్రాంతులకు గురిచేయాలని ఏ ప్రశ్నపత్ర రూపకర్త అనుకోరు కదా?
 - ◆ పది పాఠాల్లో మొదటి ఐదు పాఠాలు ఒక సెక్షన్, చివరి ఐదు పాఠాలు మరో సెక్షన్ కింద వస్తాయి.

నిజం: ఇది కూడా సరైనది కాదు. జీవశాస్త్రంలోనే అన్ని పాఠాలను ఒకే యూనిట్ గా పరిగణిస్తారు. సెక్షన్లు

మార్కుల విభజనకు మాత్రమే తప్ప పాఠాల విభజనకు కాదు. కాబట్టి ప్రశ్నలు అన్ని సెక్షన్లలో ఏ పాఠం నుంచైనా రావొచ్చు.

- ◆ వ్యక్తశాస్త్రం నుంచి ఒక బొమ్మ, జంతుశాస్త్రం నుంచి ఒక బొమ్మ వస్తాయి.
- నిజం:** ఇది కూడా అపోహ! వచ్చే రెండు ప్రశ్నల్లో బొమ్మతో పాటు ఏదైనా అంశం ఇచ్చి, దాని గురించి వివరించమని అడుగుతారు. ఒక బొమ్మ ఇచ్చి.. భాగాలు గుర్తించమని కూడా అడుగుతారు.
 - ◆ బొమ్మలు కేవలం పెన్సిల్ తోనే వేయాలి. రంగులు వేయకూడదు.

జి. బొమ్మలను పెన్సిల్ తోపాటు రంగు పెన్సిల్ లేదా క్రేయాన్ లు ఉపయోగించి పూర్తి చేయవచ్చు. పెయింట్ టింగ్ వేయాలి అవసరం ఉండదు. మీరు ఎలా వేసినా స్పష్టత అవసరం. కేవలం బొమ్మ వేయడమే కాకుండా భాగాలన్నింటినీ ఒకవైపు గుర్తించాలి. అడిగిన సమాచారం ఇవ్వాలి.
 - ◆ కేవలం కొన్ని ఎంపిక చేసిన ప్రశ్నలను బట్టిపడితే పరీక్ష రాయవచ్చు.

నిజం: ఇది సరైనది కాదు. ఏదీ ముఖ్యమైన ప్రశ్న అనేది ఉండదు. అన్ని ప్రశ్నలూ ముఖ్యమైనవే. కొన్ని ప్రశ్నలకు సమాధానాలు పరీక్షాలోనే అలోచించి, రాయాల్సి ఉండొచ్చు.
 - ◆ పాఠ్య పుస్తకానికి బదులు కేవలం స్టడీ మెటీరియల్ చదివితే సరిపోతుంది.

నిజం: పాఠ్యపుస్తకాన్ని పూర్తిగా చదవడానికి ప్రయత్నించాలి. ముఖ్యమైన భావనలను నోట్ చేసుకోవాలి. స్టడీ మెటీరియల్ ను ప్రశ్నల సరళిపై అవగాహన పెంపొందించుకునేందుకు అదేవిధంగా మోడల్ పేపర్లను ఉపయోగించుకోవాలి.

1. Nutrition-Food Supplying System

IMPORTANT QUESTIONS

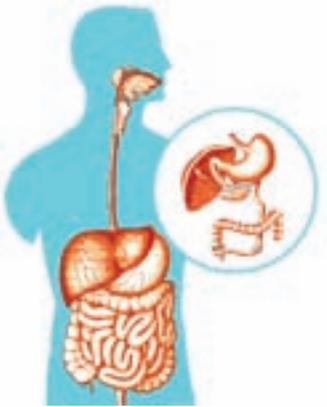
- 1 Mark**
1. Why it is better to call the dark phase of Photosynthesis as a light independent phase?
 - A. Dark phase of Photosynthesis does not require light energy. In this reaction, CO₂ combine with NADPH by utilizing ATP energy and produce glucose. This takes place without light also. So this reaction is called light independent phase.
 2. Most of the leaves have more green and shiny on the upper surface than the lower ones. Why?
 - A. Upper surface of the leaves possess more chlorophyll pigments which enhance more photosynthetic activity and the upper sur-

- face is shining due to presence of special coated thick cuticle.
3. What happens if roughages are absent?
 - A. The roughages increases the weight of the food and this helps in easy passage of food in the gut. If the roughages are absent, it leads to constipation.
 4. If we keep on increasing CO₂ concentration, what will be the rate of photosynthesis?
 - A. If the CO₂ rate increases, the rate of photosynthesis also increases. but, the CO₂ concentration raises to above 5% and hence there will be increase in temperature of the atmosphere. So the rate of photosynthesis decreases.
 5. Leaves prepare substance 'A' through photosynthesis. It converts into 'B'. What are 'A', and 'B'?
 - A. Leaves prepare the glucose (A) through photosynthesis. Glucose is converted into starch (B) and store in plants.
 6. Which phase is called bio synthetic phase? Why?
 - A. Light independent reaction is called biosynthetic phase. For this reaction, light is not required and CO₂ is utilised to produce glucose.
 7. What are the consequences due to less secretion of saliva in the mouth of a person?
 - A. Saliva participates in formation of food bolus in the mouth. If saliva is less secreted, the digestion of starch into maltose sugars gets reduced or stopped
 8. Why KOH is used in Mohl's half leaf

- experiment?
- A. KOH is used to absorb CO₂ present in the glass bottle.
- 2 Marks**
1. With the help of chemical equation, explain the process of Photosynthesis?
 2. What are the connecting substances between light reaction and dark reaction?
 3. How fats are digested in our body? Where does this process take place?
 4. What is malnutrition? Explain some nutrition deficiency diseases?
 5. What is the role of saliva in the blood?
 6. What would be the consequences if our diet completely lacks leafy vegetables?
 7. What are the apparatus required to prove oxygen is released in Photosynthesis?
 8. Draw a diagram represents Nutrition in Amoeba?
- 4 Marks**
1. With the help of chemical equation, explain the photosynthesis in detail. (or) Explain the stages of photosynthesis?
 2. Explain the structure of chloroplast with a neatly labeled sketch?
 3. What are the functions of digestive enzymes? Prepare a table?
 4. Compare the process of nutrition in plants and animals?
 5. Nutrition in autotrophs occur when there is light and even without light also. What is difference between these two situations?
 6. Does the malnutrition is the reason for

- diseases? Why? Write any one of such disease and its character?
7. Draw the diagram showing the apparatus of hydrilla experiments i.e. the experiments which shows oxygen is released during photosynthesis conducted by you.
 - a) Write the reasons to keep the test tube invertedly on the stem of the funnel.
 - b) Give a balanced equation to represent the process.
 - c) How do you test the gas released in the experiments?
 8. Describe the role of enzymes in human digestive process?

- 5 Marks**
1. Draw a labelled diagram of human digestive system. List out the parts where peristalsis takes place?
 2. Label the digestive glands present in the given diagram?



Photosynthesis is the process by which living plant cells containing chlorophyll, produce food substances [glucose & starch] from Carbon dioxide and water by using light energy.

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



3. Draw the diagram that show the carbon dioxide is essential for Photosynthesis and write the results of the experiment?
4. Draw the diagram of T.S. of leaf and label its parts?

2. Respiration- The energy releasing system

IMPORTANT QUESTIONS

1 Mark

1. Why does the air become more moist in the nasal cavity?
 - A. As the inhaled air passes through the nasal cavity, its temperature is brought close to that of the body and it takes up water vapour. Thus it becomes more moist than before.
2. Why does the rate of respiration change from time to time?
 - A. Sufficient energy is needed to our body to perform so many activities. According to our requirement, to supply oxygen and to remove of CO₂, the rate of respiration changes from time to time.
3. What is fermentation?
 - A. In the absence of oxygen, some primitive organisms like yeast and bacteria undergo respiration and produce ethanol and CO₂. This process is called fermentation.
Glucose → Pyruvate → ^{low}O₂ Ethanol + CO₂ + Energy
4. Why are mitochondria called 'Power houses of the cell'?
 - A. Some part of aerobic respiration occurs in cytoplasm and mitochondria. The energy produced is stored in the form of ATP in mitochondria. This is why mitochondria are called 'Power houses of the cell'.
5. What happens when lactic acid is accumulated in muscles?
 - A. When we do strenuous exercise, we build up oxygen debt. As a result, anaerobic respiration takes place forming lactic acid in the muscle. The accumulation of lactic acid in the muscles cause muscular pain.
6. "An athlete completed 100mts, race by holding his breath" Give reasons.
 - A. 1) During a 100m. race a well trained athlete holds his breath all the time to run fast. He pants afterwards to clear the oxygen debt.
2) During running, the muscles use the energy released through the anaerobic break down of glucose.
7. What happens if CO₂ is not expelled during exhalation?
 - A. During metabolic activities so many waste products are produced. Among those CO₂ is not one of the metabolic wastes if CO₂ is not removed from the body it becomes toxic and normal functioning of tissues will be effected. Due to that, the organism may even die.

2 Marks

1. Food sometimes enters the wind pipe and causes choking. How does it happen?
2. What is the major differences between the respiratory system in males and females?
3. How does gaseous exchange take place at blood level?

4. Prepare a table about the respiratory organs in different animals?
5. You have given sprouts, glass jars, thermometer. What experiments will you conduct with these?
6. How do you appreciate the respiration in mangroove plants and write the steps to conserve its Bio-diversity?
7. Draw a picture to show the gaseous exchange takes place in alveoli?

4 Marks

1. Why does the rate of breathing increase while walking uphill at a normal pace on the mountains? Give two reasons?
2. How do you appreciate the mechanism of respiration in our body?
3. How does gaseous exchange take place at blood level?
4. What is the advantage of wet and warm conditions of respiratory tract on the way from the nostrils to capillaries?
5. You want to talk to your drill teacher about muscular pain while doing exercise. Write some questions that you ask him?
6. You have done experiment to know about the anaerobic respiration. Answer the following .
 - i) Give the list of apparatus
 - ii) Will oxygen be removed by heating glucose?
 - iii) Write about the procedure of the experiments?

5 Marks

1. What is the pathway taken by air in the respiratory system? Illustrate with a labeled diagram?
2. Draw a well labeled diagram of mitochondria?
3. What is the pathway taken in by air in the respiratory system? Illustrate with a labeled diagram
4. Observe the picture. Write the experiment of heat is evolved during respiration?



3. Transportation - The circulatory System

IMPORTANT QUESTIONS

1 Mark

1. Explain the classification of blood vessels on the basis of thickness?
 - A. 1) On the basis of thickness, the blood vessels are three types. They are
i) Arteries ii) Veins iii) Capillaries
2) The thickness of the blood vessels depend on the circulation of blood.
3) The thick walled arteries supply the blood from heart to the parts of the

body and the thin walled veins carry the blood from the parts of the body to the heart.

2. What are brownian movements? What is the use of it?
 - A. In unicellular organisms like amoeba, the protoplasm shown natural movements. These movements are called brownian movements. Due to these movements, nutrients and oxygen are distributed through the protoplasm equally.
3. Describe about the arteries and their functions?

A. The rigid blood vessels that originate from the heart are called arteries. They begin like a big blood vessels and end in many branches. They supply the oxygenated blood from heart to various organs in the body. But the pulmonary artery carry the deoxygenated blood to the lungs.

4. What are the functions of lymph?
 - A. Lymph is the vital link between blood and tissue by which essential substances pass from blood to cells and excretory products from cell to blood.
5. What is the importance of pulmonary artery and pulmonary vein?
 - A. In human beings, all the arteries supply the oxygenated blood and all the veins carry the de-oxygenated blood. But pulmonary artery supplies the de-oxygenated blood to lungs from heart. There it is mixed with oxygen brought through the respiration and gets oxygenated. The pulmonary veins brings the oxygenated blood back to the heart.

6 Why is there a 'lub-dub' sound when the heart beats?

- A. During the cardiac cycle, when the ventricles contract, the apertures present between auricles and ventricles are closed forcibly by the valves. Then a sharp sound of 'lub' is produced. In the same away the valves present in the blood vessels (aorta and pulmonary artery) are closed when the ventricles start relaxation and the dull sound heard is 'dub'.

7. How can you define the word edema?

- A. Whenever we are sitting or standing at one place without moving for a long time, then tissue fluid enters the tissues. Tissue fluid is the liquid part of blood. Due to this, the feet swell, this stage is called 'edema'.

8. What are the similarities between blood and lymph?

- A. 1) Blood is the main component in circulatory system. Lymph is the fluid in the connective tissue. The main function of blood is the supply the nutrients and oxygen to the cells. of the body.
2) The liquid portion of the blood is called tissue fluid or lymph. Its main function is to carry waste materials from cells to blood.
3) Blood and lymph are both important parts in blood circulation?

2 Marks

1. What is the relation between blood and plasma?
2. What is root pressure? How is it useful to plants?

3. What will happen if we don't know the blood groups of the donar and recipient before the blood transfusion?

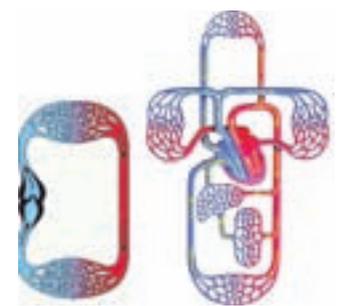
4. What is the inference about experiments with aphids?
5. How can you say that the animals damage the young sapling in hard winter?
6. You have observed the mammals heart in your lab. Write your observations?
7. Prepare a table as per the columns: s.no, animal, type of circulation.

4 Marks

1. Write differences between
a) Systole - Diastole b) Veins - Arteries
c) Xylem - Phloem
2. Explain the way how plants get water by osmosis through root hair?
3. If the valves in veins of the legs fail to stop the flow of blood what could be the consequences of this failure?
4. How can you prove that water is transported through the xylem?
5. Draw a block diagram to explain single and double circulations? Write differences between them?
6. Which items do you take into consideration to explain the differences of arteries and veins?
7. While going to school, Anil fell down. His knee was injured. Bleeding appeared at the site of injury. After sometimes the bleeding stopped. He wondered at the clotting of blood at the site of injury. How was it happened? Explain?
8. What have you done to know the internal and external features of the heart?

5 Marks

1. Observe the diagrams and explain single circulation? Write the differences between them?



2. What is called pumping station in human body? Explain its structure with suitable diagram?
3. Draw a root showing relationship of root hair and soil water?

Larynx is a stiff box like structure containing our vocal cords. When air passes out of the lungs and over the vocal cords, it causes them to vibrate. This produces sounds on the basis of our speech, song etc.,





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

4. Excretion - The wastage disposing system

IMPORTANT QUESTIONS

1 Mark

- In winter season excessive repeated urination occurs. Why does it happen?
 - 1) In winter season, the muscles contract to cope up with cold.
 - 2) As a result the body produces more heat to regulate the body temperature.
 - 3) That means the rate of metabolic activities increase and more urine is produced.
- What is micturition?
 - The phenomenon of extraction of urine is called micturition. Urage for micturition occurs when the urinary bladder is filled with 300-400 ml of urine. The stretched bladder stimulates nerve endings to development of the reflex. Then urinary bladder contracts leading to micturition.
 - Write about the composition of urine?
 - Urine contains 96% of water, 2.5% of organic substance like urea, uric acid, creatine, water soluble vitamins, hormones and oxalates and 1.5% of inorganic solutes like sodium, chloride, phosphate, sulphate, magnesium, calcium, iodine.
 - How liver acts as an excretory organ in our body?
 - Liver produces bile pigments bilerubin, biliverdin and urochrome. They are metabolic wastes of haemoglobin of dead RBC's. Urochrome is eliminated through urine. Bilerubin and biliverdin are excreted through foeces. Liver is also involved in the formation of urine. Thus liver acts as an accessory excretory organ.
 - What are primary metabolites?
 - 1) The materials which are required for normal growth and development are called primary metabolites.
 - 2) Carbohydrates, fats and protein are primary metabolites.
 - What are secondary metabolites?
 - The materials do not require for normal growth and development are called secondary metabolites.
eg: Alkaloids, tannins, resins, gums and latex are secondary metabolites.
 - White latex which ooze out, when you cut the leaves of calotropis. Name some other plants you observe?
 - When we pluck the leaves of calotropis, white milky substance is secreted. It is the latex, a secondary metabolite in the plants.

Latex secretion is also seen in plants like Jatropha and Hevea (rubber).

2 Marks

- How plants manage the waste materials?
- Why the Urine is slightly thicker in summer than in winter?
- What happens if waste materials are not sent out of the body from time to time?
- Name the plants in your village which are using to prepare bio diesel?
- Write excretory organs in different animals in a tabular column?
- Draw a neat diagram of excretory system in human being?
- What are the reasons for bed wetting of children during the sleep?
- Write the health tips for protection of kidneys?

4 Marks

- Write the differences for the following
 - Excretion and Secretion
 - Primary and Secondary metabolites
- In which excretory system much water is reabsorbed? What happens if it doesn't occur?
- Explain the process which you adopted in the laboratory when you are dissecting the kidney?
- Prepare a tabular form with the headings regarding the nephron and its functions?

sno	part of nephron	basic structure	shape structure/functions
- Dialysis is a technical boon to some people whose kidneys are not working properly. Write an article on this to publish in a paper?

5 Marks

- Draw a neat labelled diagram of L.S. of kidney?
- Describe the structure of the renal tubule with neatly labelled diagram?

5. Coordination - The linking system

IMPORTANT QUESTIONS

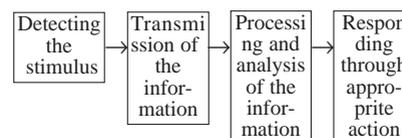
1 Mark

- What are non-myelinated fibres?
 - Axons which do not have myelinated-sheath are called non-myelinated fibers. These are present in the brain and spinal cord.
- How does synapse form? What are the functions of synapse?
 - Dendrites of one nerve cell connect to the other or to the axons of the other nerve cells through connections called 'synapse' It is the functional region of contact between two neurons, where information from one neuron is transmitted or relayed to another neuron, there is a gap, at synapse through which the message jumps from one neuron to the others.
- Why is the outer surface of brain is in grey colour and the inner surface white?
 - Colour difference depends on the arrangement of neurons in the brain. The nerve cells bodies together with capillaries from a mass called grey matter while the myeli-

nated axons from white matters.

4. What are the functions of cerebrum?

- The chief and largest part of the fore brain is cerebrum. It is the seat of mental abilities. It controls thinking, memory, reasoning, perception, emotions and speech. It interprets sensations and responds to cold, heat, pain and pressure.
- What is meant by autonomous nervous system?
 - The nervous system that involuntarily controls several functions in regions like internal organs, blood vessels, smooth and cardiac muscles is called autonomous nervous system. It divides into sympathetic and para sympathetic systems.
- Write about the islets of langerhans?
 - Islets of langerhans are the specialised cells of the endocrinal region of pancreas. They secrete two vital hormones. They are insulin and glucagon. Insulin converts excess of glucose in the blood into glycogen and when sugar levels are increased in the blood, store it the liver. Glucagon converts glycogen into glucose when sugar levels are decreased in the blood.
- Draw the different stages of stimulus and response?
 - There is a sequence of events that brings about response.



- Charan entered the theatre. The picture had already begun. Charan was unable to find his seat initially. Why?
 - 1) If we enter a dark place from bright area, we are unable to see at once it is because of the adjustment of the pupil of eye.
 - 2) Charan went into the dark from light. So he could not see anything immediately. Later due to the increase in diameter of pupil, which allows more light he was able to see. These two actions are controlled by autonomous nervous system.

2 Marks

- Write the functions of gibberelic acid?
- How does feed back mechanism controls anger?
- Why the butterflies are fluttering on flowers?
- What questions you can pose to know the endocrine glands?
- What happens if you keep a potted plant in to your home?
- Write the information on the actions controlled by spinal cord?
- Raju planted a bitter gourd plant. But he don't make the arrangements for the creeper to take support. What will be the result?
- Draw a Neuron and label the parts?

4 Marks

- Distinguish between

a) Receptor and Effector

b) Afferent and Efferent nerves

- Give an example and explain how plants may immediately respond to a stimulus?
- If you visit a doctor what doubts would you clarify about pancreas?
- Suggest an experiment to show how roots grow away from light in most places?
- What procedures do you follow to understand the effect of plant growth hormones in the terminal position of the tip of the stem?
- Write the information about cranial nerves and spinal nerves which you are collected from the school library?
- Write a conversation between diabetic and insulin?
- How are the tropic movements help in the daily life?

5 Marks

- Draw neatly labelled diagram of brain and write few points ow it is protected?
- Draw a neat diagram of neuron and label the parts and write the functions of Axon?
- Draw a diagram which shows the two roots of spinal cord? Write the functions of two roots of spinal cord?

6. Reproduction- The generating System

IMPORTANT QUESTIONS

1 Mark

- Why external fertilization occur in fishes and amphibians?
 - Fishes and amphibians are aquatic animals. As the chance of fertilization is controlled by nature which occurs externally, it is inevitable to produce a vast number of eggs and sperms.
- What is the role of graffian follicles in the release of ovum?
 - The ova develops in tiny cellular structures called follicles, which at first looks like cellular bubbles in the ovary. They are called graffian follicles. Each follicle contains an ovum. When an ovum is mature, the follicle ruptures at the surface of the ovary and ovum is flushed out.
- How does umbilical cord developes?
 - The umbilical cord is a tube like structure formed from allantois. It contains very important blood vessels that connect the embryo with the placenta and supplies nutrients to the child from the mother.
- What is cell cycle?
 - Mitosis is the cell division. The period between two cell divisions is called interphase which has again 3 sub stages like G₁, S and G₂. All these changes occur in a cyclic manner alternating with mitosis. So it is called cell cycle.
- Why meiosis is called reduction division?
 - During the meiosis the number of chromosomes are reduced to half. The daughter cells have just half the number of chromosomes of the parent cell. So this division is called reduction division.
- How does spores develop in Rhizopus?
 - Rhizopus is a thread like of filamentous fungus. It produces microscopic reproduc-

The arteries carry oxygenated blood except pulmonary artery. The veins carry deoxygenated blood except pulmonary veins.



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



tive units called spores in sporangium. When the sporangium bursts, the spores spread into the air. These spores land on food or soil. Under favourable conditions, they germinate and produce new individuals.

7. If the tail is cut in the lizard, it develops again. Give reason.

Generally many organisms have the ability to give rise to new individual organisms from their body parts and it is called regeneration. In lizard, the tail is cut to divert and escape from the predator. They undergo cell division process to regenerate the new body parts.

8. Ravi's father wants to grow potato crop in his field. He wants to discuss some doubts with agricultural officer. Imagine what questions he would ask to clarify his doubts?

- 1) Is the field suitable for potato cultivation?
- 2) How much of irrigation is needed for potato cultivation?
- 3) How can we harvest potato crop with drip irrigation technique?
- 4) What is the duration of potato crop?
- 5) What are the precautionary steps to be taken before growing potato crop?

2 Marks

1. In what ways does sexual reproduction differ from asexual one? State at least three reasons?
2. Describe the life skills one should develop in adolescent stage?
3. How can you say that placenta supplies the nutrition to embryo?
4. What questions will you ask to know the family planning methods?
5. Write the names of the plants which occur vegetative propagation from your observations?
6. Draw the diagram of human embryo?
7. What is the loss caused due to teenage motherhood?

4 Marks

1. Write the differences between
 - a) Grafting - Layering
 - b) Stamen - Carpel
2. What are the different modes of asexual reproduction? Explain them with examples?
3. Write the differences between mitosis and meiosis?
4. What happens to the wall of the uterus during menstruation?
5. You have conducted the experiment of observation of Rhizopus. Now answer the following.
 - a) Why we have to choose the controlled conditions
 - b) What are the grey coloured structures found in the slide?
6. You want to implement awareness programme on 'Polio' and 'AIDS' in village. Write in a table?
7. Is family planning good? Write your answer with proper analysis?
8. Write 5 slogans on the prevention of HIV/AIDS?

5 Marks

1. Observe the following part of flowering plant. Name and label it?



2. Draw the life cycle of flowering plant?
3. Draw the diagram of male reproductive system. Label the parts?
4. Draw the cell cycle diagram and explain the stages?

7. Coordination in life processes

IMPORTANT QUESTIONS

1 Mark

1. How is bolus formed in the gut?
- A. Saliva is secreted by three pairs from salivary glands to moisten the food to make chewing and swallowing easier. As a result of chewing, food forms into a slurry mass called 'bolus'.

2. How does peristalsis occur?

- A. Concentration and relaxation of muscles (circular and longitudinal muscles) bring in a wave like motion that propels the food bolus into the stomach by the action called as 'peristalsis'. This is involuntary and is under the control of autonomous nervous system.

3. Why HCl is released in the stomach?

- A. HCl along with other enzymes is released in the tissues of stomach. P^H of HCl is 1.5. It kills the foreign bodies. HCl degrades the proteins and activates the pepsinogen to pepsin.

4. How does belching occur?

- A. Some liquid portion of the stomach pushed back into the mouth through the oesophagus. Due to acids, the belching occurs.

5. If we take excess food, what will happen to stomach?

- A. Our stomach is not like a bag with specific volume. It is like a pouch which is elastic in nature. The size of the stomach increases based on the food that we take. But excess intake food cause abnormal digestion process in stomach.

6. Which teeth are used when you eat peas and banana?

- A. For eating banana we use incisors, pre-molars and molars.

We use pre-molars and molars to eat peas, Because Banana is to be plucked by incisors first, then it is masticated. But peas are masticated directly by pre-molars and molars.

7. How does the absorption of food takes place?

- A. The absorption of food takes place in the small intestine. The inner surface of the small intestine contains thousands of finger like projections called villi. These villi increase the surface area so that the food retained in the folds can remain longer

thereby enhancing absorption.

8. Write the reasons for burning sensation in throat during vomiting.

- A. When the food enters into the stomach, it is converted into acidic form by the HCl which is secreted by the walls of the stomach. Due to the reverse peristalsis, the food in stomach along with chyme is expelled out. That's why we feel burning sensation.

2 Marks

1. If glucose level falls in blood, Why we feel hungry?
2. If there is any reason for the intestine to be coiled with many folds, in what way it is helpful during the process of digestion?
3. What happens if salivary ducts are closed?
4. Why the stomach is structured like a bag rather than like a tube?
5. Illustrate the forward and backward peristalsis with examples?
6. Draw the schematic diagram of a villus?
7. Write the differences between Bolus and Chyme?
8. Suggest a simple experiment to prove the role of palate in recognizing taste?

4 Marks

1. Write the difference between small intestine and large intestine?
2. What is mastication? Explain the role of teeth in this process?
3. List out the sphincter muscles of the food canal you have observed and give a brief description.
4. What experiments should you perform to understand action of saliva on flour? Explain its procedure and apparatus that you followed.
5. Draw a neatly labeled diagram of showing peristaltic movement in oesophagus. Explain the mucus on the walls of food pipe.
6. Describe organs and systems participating in digestion. Write their functions briefly.
7. You have conducted the experiments on the need of mechanical crushing of food.
8. How do the different process coordinate from mouth to anus? Explain them in tabular form?

5 Marks

1. Draw a figure showing peristaltic movement of bolus?
2. Draw schematic diagram of villus?

8. Heredity- From Parent to Progeny

IMPORTANT QUESTIONS

1 Mark

1. In F₁ generation, Yy are present, then why all the seeds will be in yellow colour?
- A. The production of yellow seed plants is due to the law of dominance. The breed after cross pollination will have one factor from pure based yellow (Y) and the pure breed green (y). All the peas will have the paired factor (Yy). Due to the law of dominance the peas will be always be in yellow colour.
2. What is the difference between homozy-

gous and Heterozygous?

Homozygous

It has two identical alleles for a single trait

Heterozygous

It has two different alleles for a single trait

3. What is meant by dihybrid cross?

- A. If the two pairs of contrasting characters are taken for cross pollination, then is called dihybrid cross. By taking the two pairs of characters mainly yellow (YY) Round (RR), wrinkled (yy) and Green (rr), Mendel has done the dihybrid cross.

4. How are the alleles of parents transmitted to offsprings?

- A. Every individual possess a pair of alleles for any particular trait and that each parent passes a randomly selected copy of only one of these traits of an offspring. Thus offspring receives its own pair of alleles for that trait one each from both parents. This is called law of segregation.

5. What are darwing finch birds? What is their speciality?

- A. Finch birds are the small group of birds which exhibit diversity in structure in galapagos islands. Darwin noticed the changes in the beaks of finch Birds. By this observation only Darwing proposed the theory of Natural selection.

6. Explain the struggle for existence.

- A. This was one of the concepts of Natural selection proposed by Darwin. Each species compete with each other within the species and also with others for their existence. It is called the struggle for existence. In this struggle, only the fittest can survive.

7. How does carbon dating method indicate?

- A. Paleontologists determine the age of fossil by using carbon dating method. By using the radio active isotopes of certain elements such as carbon, uranium and potassium, they can identify the age of fossils. It is called carbon dating method.

8. Who is called as the moving museum of vestigial organs?

- A. The unused organs which remained in the body are called vestigial organs. Man is said to be the moving museum of vestigial organs because in human beings, there are nearly 180 vestigial organs like pinna, hair on skin, mammary glands in males and appendix etc.

2 Marks

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

Dialysis machine is an artificial kidney which filters the blood to remove the metabolic wastes outside the body.





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

- One experimenter cuts the tails of parent rats, what could be the traits in off springs?
- Write a brief note on analogous organs ?
- Why the phenotypic ratio of F1 generation will be 3:1?
- Is there any chance for all the children whoever is born to be only male or female?
- What are the questions did you ask about Mendel theories ?
- Our human body looks like a museum of the vestigial organ. Explain?
- Write the evidences which you have with you to tell that organisms are formed due to the evolution?

4 Marks

- Explain the Darwin's theory of evolution natural selection with an example?
- What are characters Mendel selected for his experiments on pea plant?
- Male is responsible for sex determination of baby - do you agree? If so write your answer with flow chart ?
- Which theory express the concepts of competition among the organisms, variations, natural selection for existence. Explain these in order?
- Suma selected character mainly round yellow, wrinkled green pea seeds and crossed these plants in her garden. Explain her results with the help of checker board?
- Plants show mutations in different situations. Give examples?
- If you have a historian, what type of questions you will ask him/her to clarify your doubt on "man has first born in African continent"?
- Draw the diagram of sex determination. What are the reasons for haploid state of chromosomes in sperms cells?

5 Marks

- Draw a flow chart showing sex determination in human beings?
- Draw a flow chart showing Mendel's monohybrid hybridization?

9. Our Environment - Our Concern

IMPORTANT QUESTIONS

1 Mark

- Write the examples of the biotic and abiotic factors?
 - The physical factors like land, air, water sunlight are the abiotic factors.
 - The biological factors like plants, animals and micro-organisms refers to biotic factors.
- How will be the food chain, if the green plants cannot prepare the food? Write your opinion.
 - The entire biosphere is influenced by the existance of producers is quite negligible as compared to that of tertiary consumers. So the pyramid of biomass is always inverted.
- Write your predictions on the indiscriminate uses of pesticides?
 - Pesticides are often indiscriminate in their action and many number of animals may be destroyed.

- Some of these may be predators which naturally feed on these pests, others may be the prey for other animals. Thus causing unpredictable changes in food chains and upsetting the balance within the ecosystem
- Write some slogans for protection of environment?
 - 1) Save the environment- life will be betterment
 - 2) If you save nature- will have better future
 - 3) Environment is the heart of man.
 - 4) Plants in Environment - saves life.
- Think why the pyramid of Biomass is always upright?
 - 1) In terrestrial ecosystem, the ratio of biomass increases from the producers to the top level or higher carnivorous animals.
 - 2) In the same way, the number of organisms in the food chain progressively decreases from first trophic level to last trophic level. (From producers to tertiary consumers) Which makes the pyramid of biomass always uprights.
- What are the ill effects of heavy metals?
 - 1) Research results revealed that there are accumulation of heavy metals in fishes in rainy season mainly.
 - 2) These heavy metals enters into the humans through the food chain.
 - 3) This bio-accumulation cause various physiological disorders such as hypertension, sporadic fever, renal damage, nausea etc.

2 Marks

- What is trophic level? What does it represent in an ecological pyramid?
- If you want to know more about flow of energy in an ecosystem, what questions do you ask?
- What type of information do you require to explain pyramid of biomass?
- Explain why the pyramid of biomass is always upright?
- More snakes are introduced in to an ecosystem. What are the consequences?
- Some children are killing the grasshoppers living in green ecosystem for their fun. How can you prevent them?
- Suggest any three programmes for prevention of soil pollution in view of avoiding pesticides?
- Draw a pyramid of number considering yourself as a top level consumers?

4 Marks

- What type of information do you require to explain pyramid of biomass ?
- Why the most of food chains consists of four steps only?
- Explain the pyramid of biomass taking an example of food chain in which the man feeds on fish?
- Why numbers of organisms decrease as we move from producers to consumers?
- If you want to know about pyramid of biomass, what question will you ask the ecologist?
- What is ecological pyramid ? What con-

cepts are revealed by pyramid of biomass?

5 Marks

- Draw number pyramids and label different tropic levels in it?

10. Natural Resources

IMPORTANT QUESTIONS

1 Mark

- What is sustainable development?
 - Development and conservation can co-exist in harmony. When we use the environment in ways that ensure we have resources for the future, it is called sustainable development.
- Write about the contour strip cropping?
 - Several crops such as corn, wheat and clover are planted in alternating strips across a slope or across the path of the prevailing wind. This is called contour strip cropping.
- What are the uses of gliricidia plant?
 - Gliricidia plant strengthen the field bunds and make the soil nitrogen - rich.
- What is meant by natural resources? How many types are there?
 - The resources which are available in nature are called natural resources. The earth's natural resources include air, water, soil, minerals, fuels, plants and animals. These are of two types.
 - Renewable resources:** These can be replaced after they are used.
Eg: air, water
 - Non-renewable resources:** These resources can't be replaced after they are used.
Eg: Fossil-fuels like coal and petroleum.
- How does we conserve the forests by saving paper?
 - We can use the used paper of waste paper again by recycling it. Then we can save many trees of earth. People in china and mexico are conserving the forest by recy-

cling the waste paper.

- What is the use of selective harvesting?
 - The practice of removing individual plants or small groups of plants leaving, other plants standing to anchor the soil is called selective harvesting.

2 Marks

- Write the differences between soaking pit and percolation tank?
- 'Forest is a renewable resource'. Do you agree? Justify?
- Why should we protect forests and wild life?
- What happens if natural resources decreases rapidly?
- Prepare a question bank to conduct quiz in your school about fuel conservation?
- Prepare a flow chart on water resources in our state?
- Give some suggestions to the farmers about the type of crops to sow in scarcity areas?
- Write 3 stogans to enlight the cycle usage?

4 Marks

- Write a detailed note on management of natural resource?
- Suggest some approaches towards the conservations of forests?
- How does the soil conservation method protects the soil fertility?
- "Earth loses about 36 million acres of forest to deforestation on area about half size of our state." Explain that 'Forests are one of the important resource.'
- The wells and tanks in your village became dry. Ground water level decreases. Assume the causes for this? Will there be no water scarcity if all the farmers of your village work collectively?
- How can you say proper utilization of natural resources helpful to the nation's economical growth ?

Environmental Education

1 Mark

- Write the slogans about fluorosis?
- How education for all is useful for environmental protection?
- How would you help the people affected by natural disaster?
- Comment on Ebola, a very dangerous disease?
- Differentiate between bio degradable and non-biodegradable?
- Why decomposition of plastic takes hundreds of years?
- Why ground water level is decreasing?
- What are the steps will you take to save LPG?
- List the types of mosquitoes and diseases caused by them?
- What are the impacts arising due to particulate pollutants?

2 Marks

- Explain how green house gases are responsible for global warming?

2. What is the contribution of youth sustains the healthy environment?

- Suggest some alternate sources for fossil fuels?
- Write the interaction exists between plants and insects?
- How the bus journey is good for environment?
- Justify that rains are not the only reason for floods but also human mistakes?
- Justify the zoo is for entertainment and amusement?
- Why do we offer prayers for plants and animals?
- What are the precautions to be taken in waste management?
- What are the measures you take to avoid water pollution?
- The domestic garbage from the houses are disposed on streets. Is it good or bad?
- Explain the importance of rain water harvesting?

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



1. Nutrition- Food Supplying System

- The root like organs in dodder are called ____.
- The other name of the salivary amylase is ____.
- Kwashiorkor is caused due to the deficiency of ____.
- Pantothenic acid is ____ soluble vitamin.
- The absorption capacity of small intestine is increased due to ____.
- The closing and opening of stomata depends on ____.
- The mode of food intake in Amoeba is ____.
- The word Oxygen was coined by ____.
- The finger like extensions which are present in Amoeba ____.
- In single celled animals the food is taken through ____.

ANSWERS

- Haustoria; 2) ptyalin; 3) protein; 4) water; 5) villi; 6) guard cells; 7) phagocytosis; 8) Lavoiser; 9) pseudopodia; 10) cell surface

2. Respiration- The energy releasing system

- Due to vibration of vocal cords sounds are produced. These sounds are produced during ____.
- ____ channelises air to lungs.
- ____ membrane covers the lungs.
- If we cut the nerves which goes from respiratory organs to brain ____ happens.
- The total lung capacity of human being is ____.
- Oxygen combine with haemoglobin and forms ____.
- ____ is the only process which gives energy for all metabolic activities
- Energy stored in one ATP is ____.
- ____ plants grow in estuaries and respire with roots.
- ____ are present on the surface of roots to respire.

ANSWERS

- expiration; 2) trachea; 3) pleura; 4) stops respiration process; 5) 5800 ml; 6) oxy haemoglobin; 7) cellular respiration; 8) 7200 cal; 9) mangrove plants; 10) lenticells

3. Transportation - The circulatory System

- The layer which covers the heart is ____.
- The layer which separates the ventricles into left and right is ____.
- ____ is the largest artery
- The vein which collects blood from the posterior parts of the body is ____.
- The liquid portion of blood that enters the tissue is ____.
- The genetic disease which stops the coagulation is ____.
- The releasing of water in the form of vapour from leaves is called ____.

Fill in the Blanks

- Seive tubes are present in ____.
- Vitamin K deficiency leads to delayed ____ of blood.
- Exchange of gases and nutrients occur diffusion between the ____.

ANSWERS

- pericardium; 2) auriculo ventricular septum; 3) aorta; 4) inferior venacava; 5) tissue fluid; 6) haemophilia; 7) transpiration; 8) phloem; 9) coagulation; 10) capillaries and tissue cells

4. Excretion - The wastage disposing system

- The oxygenated blood enters into kidneys through ____ (i) and ____ (ii) collects the de oxygenated blood.
- The bunch of blood capillaries are formed in nephron is called ____.
- According to the studies of evolution the excretory organs were first seen in ____.
- From Hevea brasiliensis ____ i) and ____ ii) from biodiesel will be extracted
- The maintenance of equilibrium of concentration of liquids is ____.
- The inner side of a kidney has ____.
- Millions of microscopic thin tubular units in each kidney are ____.
- The urine has amber colour due to ____.
- Tears are ____.
- ____ alkaloid have ayurvedic values.

ANSWERS

- i) renal artery ii) renal vein; 2) glomerulus; 3) platyhelminthes; 4) i) rubber ii) jatropa; 5) homeostasis; 6) hilus; 7) nephron; 8) urochrome; 9) excretion; 10) nimbin.

5. Coordination - The linking system

- ____ part controls pituitary gland in brain
- Number of peripheral nerves is ____.
- The part which controls anger, pain etc is ____.
- ____ phyto hormone helps in the prevention of loss of water.
- The chemical substance which destroys weeds is ____.
- The special function of cytokinins is ____.
- Apical buds dominate the lateral buds in ____.
- The substance secreted by ductless gland is ____.
- The cells which are destroyed by viruses in polio disease ____.
- The membrane which covers brain ____.

ANSWERS

- hypothalamus; 2) 43; 3) diencephalon; 4) ABA; 5) 2-4-D; 6) cell division; 7) apical dominance; 8) hormones; 9) motor nerves; 10) meninges

6. Reproduction- The generating System

- Ameoba undergoes cystation and divides in to many organisms in unfavourable conditions. This is called ____.
- ____ is the reason for the enlarged cotyledons in beans
- AIDS: virus::Syphilis : ____.
- ASHA means ____.
- The main function of tail in sperm is ____.
- Cotyledons are present in ____.
- ____ joins the embryo to the walls of uterus.
- Fission, budding and fragmentation are the types of ____.
- ____ scientist discovered tissue culture.
- The layer formed around 12th week of pregnancy is ____.

ANSWERS

- Multiple Fission; 2) endosperm; 3) bacteria; 4) Accredited Social Health Activist; 5) Movement; 6) seed; 7) umbilical cord; 8) asexual reproduction; 9) Haberlandt; 10) placenta

7. Coordination in life processes

- ____ discovered the relation of lunch bell and mouth watering.
- The direction of peristaltic movement is ____.
- ____ sphincter that helps in opening of stomach in to duodenum.
- p^H condition of stomach is ____.
- The system which control the levels of the glucose in the blood is ____.
- The nerve which carries the hunger signals to the brain is ____.
- The papillae which are at the end of tongue is ____.
- The recognition of taste is done by the ____ cells present in the taste buds on the tongue.
- The teeth which are used for tearing the food are ____.
- The enzyme which acts on bolus is ____.

ANSWERS

- Ivon Pavlov; 2) progressive & retrogressive; 3) pyloric; 4) acidic; 5) digestive system; 6) vagus nerve; 7) folliate papillae; 8) receptor cells; 9) incisors; 10) salivary amylase

8. Heredity- From Parent to Progeny

- Gene: DNA :: Virus : ____.
- The species which is still living from 40 thousand years is ____.
- Slow and stable process is ____.
- If the % of long plants is 75, then it should be represented in ____.
- If there is two identical factors for a character, it is called ____.
- The characters that transmit from parents to offspring are ____.

- The structure of DNA is ____.
- The study of fossils is called ____.
- The small changes within the species are called ____.
- The larva of frog resembles to ____.

ANSWERS

- RNA; 2) Homo sapiens; 3) evolution; 4) phenotype; 5) Homozygous; 6) Heritable characters; 7) double helix; 8) paleontology; 9) Micro evolution; 10) Fish

9. Our Environment - Our Concern

- The graphic representation of the feeding level of an ecosystem is ____.
- In an industrial area so many industrial effluents are released into the water. If the residues are found in the organisms of food chain it is ____.
- The type of forests are determined by ____.
- When biomass is used for energy production that is called ____.
- The plants float on the surface water of the sea ____.
- ____ happens if plants shed their leaves in autumn season.
- ____ can convert the absorbed colour energy sunlight into chemical energy.
- The mercury, arsenic and lead in pesticides ____.
- The bio indicators of heavy metal pollutants is ____.
- Between grass and grasshopper food chain ends with ____.

ANSWERS

- ecological pyramid; 2) bio-accumulation; 3) temperature, sunlight; 4) bio fuel; 5) phytoplanktons; 6) loss of biomass occur; 7) producers; 8) do not breakdown; 9) fishes; 10) consumers

10. Natural Resources

- ____ is farmer-based intervention.
- UNDP means ____.
- Ramya gave her old books to her sister. It is ____ type of conservation method.
- The life line project for large part of telangana on river godavari is ____.
- The people of Rajasthan who saved forests are ____.
- ____ is not the reason for bio diversity.
- Petroleum will not be used in the production of ____.
- The method in which plastic can be reused is ____.
- The use of percolation pit is ____.
- ____ method is to be followed by farmers in scarcity of water.

ANSWERS

- contour strip farming; 2) United Nations Development Programme; 3) reuse; 4) pochampadu project; 5) bishnois; 6) hunting, pollution, destruction of habitats; 7) bread mould; 8) recycling; 9) increasing ground water level; 10) drip irrigation



August Weisman a biologist hypothesised that.. In successive generations, individuals of the same species have the same number of chromosomes. In successive cell division the number of chromosomes always remain constant.

1. Nutrition- Food Supplying System

- Correct order of the products that are synthesised by plants?
 - glucose, starch, cellulose
 - glucose, proteins, lipids, cellulose
 - proteins, lipids, cellulose
 - glucose, vitamins, alkaloids
- Animals cannot synthesise the following?
 - carbohydrates
 - cellulose
 - lipid
 - protein
 - i only
 - i, ii only
 - iii only
 - iii, iv only
- The correct order in the steps of light reaction?
 - $H_2O \rightarrow H^+ + OH^-$
 - ATP+ NADPH
 - chlorophyll activated
 - i, ii, iii
 - iii, ii, i
 - i, iii, ii
 - iii, i, ii
- Which of the following is an enzyme which is secreted in stomach?
 - amylase, trypsin
 - peptosase, sucrose
 - only pepsin
 - only lipase
- Nithya likes to eat sour tasty fruits, the vitamin she obtains is?
 - pantothenic acid
 - ascorbic acid
 - HCl
 - pyridoxin
- One of the following is not a vitamin deficiency disease?
 - beri- beri
 - diabetes
 - anaemia
 - rickets
- A father got a child having bowlegs. This is due to?
 - lack of growth in bones
 - lack of supply vitamin D
 - lack of supply of retinol
 - it is a gift of life
- Which of the following shows saprophytic nutrition is?
 - mushroom
 - plasmodium
 - leech
 - lice
- The length of small intestine in human being is?
 - 4.5 m
 - 1.5m
 - 3.5m
 - 6.5m
- The enzyme which mixes up with food in alimentary canal first is?
 - pepsin
 - trypsin
 - ptyalin
 - glycogen

ANSWERS

- 1) a; 2) b; 3) d; 4) c; 5) b;
6) b; 7) b; 8) a; 9) d; 10) c

2. Respiration- The energy releasing system

- When pressure is exerted on lungs, the following one occurs?
 - inspiration
 - chest cavity increases
 - expiration
 - chest cavity decreases
- Warming and moisturing goes on this passage?
 - pharynx
 - nasal cavity
 - larynx
 - trachea
- Find the correct statement
 - when we are running pain in muscles occurs
 - due to the conversion of latic acid to pyruvic acid muscle pain occurs

- 1, 2 are true
 - 1 true, 2 false
 - 2 true, 1 false
 - 1, 2 are false
- You respire more when you are tired why?
 - to compensate tire someness
 - to stop compensate tiresomeness
 - to regain strength
 - to increase energy expenditure
 - What is the reason for the entry of air into stomata?
 - due to increase in the density of air
 - behind the stomata, air density increase
 - due to increase in the density of CO_2
 - increase in the density of O_2
 - Arrange the following in order...
 - pharynx
 - larynx
 - alveolous
 - bronchus
 - i, ii, iii, iv
 - i, iii, iv, ii
 - i, ii, iv, iii
 - ii, i, iv, iii
 - Observe the following assertion and reason sentences?

Assertion: when we take rest, breathing will be slow

Reason: at the time of running or doing vigorous exercise our breathing be fast

 - A, R both are true
 - A is true, R is false
 - A is false, R is true
 - A and R both are false
 - Photosynthesis and respiration both are called
 - anabolic activities
 - catabolic activities
 - combustion activities
 - metabolic activities
 - Agents present in exhaled air
 - CO_2, O_2
 - O_2 water vapour
 - CO_2 water vapour
 - water vapour
 - The rate of transpiration is more in the following days of atmosphere
 - cold, humid air
 - hot, humid, dry
 - hot, humid air
 - hot, dry air

ANSWERS

- 1) c; 2) a; 3) b; 4) b; 5) d;
6) c; 7) a; 8) d; 9) c; 10) d

3. Transportation - The circulatory System

- Identify the special one from the following
 - superior vena cava
 - interior vena cava
 - aorta
 - coronary artery
 - only i
 - ii and iii only
 - d only
 - i and iv only
- Blood \rightarrow right ventricle \rightarrow pulmonary artery \rightarrow lungs.
lungs \rightarrow pulmonary vein \rightarrow left auricle \rightarrow left ventricle \rightarrow body parts
Which type of circulation it is indicating
 - single circulation
 - double circulation
 - pulmonary circulation
 - cordiac circulation
- The vital link between blood and cell tissues is?
 - blood cells
 - capillary system lymph
 - water
 - serum
- The strongest presence during the time

- systolic
 - blood pressure
 - diostolic pressure
 - atmospheric pressure
- Which of the following is showed hypertension?
 - 120/80
 - 160/90
 - 80/160
 - 110/70
 - Which of the following has the concern with rain fall?
 - osmosis
 - root pressure
 - transpiration
 - wind erosion
 - The predators which will be grown by the foresters to prevent the rabbits?
 - owls
 - foxes
 - badgers
 - all of these
 - Lungs are covered by pleura, then heart is covered by?
 - hyper cardium
 - pericardium
 - epi cardium
 - upper cardium
 - The chambers present in the human heart?
 - 2 auricles- 1ventricle
 - 1 ventricle, 1 auticle
 - 2 auricles, 3 ventricles
 - 2 auricles, 2 ventricles
 - The cells in vasular bundle are
 - xylem, protein
 - xylem, epithelia
 - such situation doesnot arise
 - to take care

ANSWERS

- 1) c; 2) b; 3) b; 4) a; 5) b;
6) c; 7) d; 8) b; 9) d; 10) d

4. Excretion - The wastage disposing system

- Why plants shed their leaves
 - to blooming
 - unable to cope up with heat
 - to reduce the water loss
 - to grow and develop
- some animals can't eat some parts of the plants. Because
 - they do not have taste
 - wasters are stored in them
 - they have thorns
 - animals not prefer them for food
 - a, b are false
 - c and d are true
 - c, d are false
 - a, b are true
- The maintenance of equilibrium of concentration of liquids is
 - homosapien
 - stability
 - homostasis
 - control
- Pathway & sperm release from the testes?
 - seminal duct, epididymis, urethra
 - urethra, epididymis seminnal duct
 - epididymis, epididymis
 - epididymis, seminal duct, urethra
- The cup like structure in nephron is
 - glomerulus
 - bowman's capsule
 - malphigian body
 - loop of henle
- The part where the main tenance of pH occur
 - renal tubule
 - distal convoluted tubule
 - collecting tubule
 - pelvis
- Excessive repeated, dilute urination called
 - diabetes
 - diabetes insipidus
 - diabetes mellitus
 - hepatitis
- Which of the following pigment is not

- formed in the liver.
 - bilirubin
 - biliverdin
 - urochrome
 - haemoglobin
- Cassia and Acacia will be used in
 - varnishes
 - tannins of leathers
 - manufacture of rubber
 - manufacture of bio diesel
 - The failure of the kidney is called
 - ESRD
 - MSRD
 - ASRD
 - KSRD

ANSWERS

- 1) c; 2) d; 3) c; 4) d; 5) b;
6) b; 7) b; 8) d; 9) b; 10) a

5. Coordination - The linking system

- Identify the pair which is not correct?
 - Thyroid-Thyroxin
 - Ovary - Oestrogen
 - Pancreas - Insulin
 - Adrenalin - Testosterone
- Seperate the parts which do not from the synapse
 - axon
 - dendrite
 - nodes of ranvier
 - nisselgranules
 - a, c
 - c, d
 - a, d
 - a, b
- You sat in the cricket ground. Ball was coming towards you and you escaped from it immediately. Which type of reaction is this?
 - valuntary action
 - Involuntary action
 - reflex action
 - controlled action
- Doctor adviced dileep that, he has to take insulin daily compulsorily from which disease is he suffering?
 - epilepsy
 - diabetes insipidus
 - diabetes mellitus
 - langerhans
- The part of the brain that helps you in solving puzzles is?
 - Cerebrum
 - Cerebellum
 - Medulla
 - Diencephalon
- Observe the following A, B statements
A) abscisic acid prevents seed dormancy
B) gibberellin promotes seed dormancy
 - both are true
 - A is true B is false
 - A is false B is true
 - both are false
- The place where auxins are produced
 - nodes
 - Twigs of leaves
 - tips of roots and stem
 - internodes
- The brain is covered by three layers the middle layer is
 - dura matter
 - piamatter
 - arachno matter
 - pleura
- The mechanism which controls the action of hormones is
 - feed back mechanism
 - controlling nervous system
 - effect of auxins
 - growth of organisms



10. Which is not correct pair
 a) adrenaline- pituitary gland
 b) testosterone- testes
 c) insuline-pancrease
 d) estrogen- (ovaries) ovary

ANSWERS

- 1) d; 2) b; 3) c; 4) c; 5) a;
 6) d; 7) c; 8) c; 9) a; 10) a

**6. Reproduction-
The generating System**

1. To get desirable characters, which of the following method is adapted?
 a) Layering b) Grafting
 c) Laboratory d) Genetic exchange
2. Stock and scion are attached. Which type of characters will come in the offspring
 a) characters of stock
 b) characters of scion
 c) special desired characters
 d) can't say
3. Ovary → _____ → Ovum → Ovulation → Fallopian tube → uterus. What will be in the missed one?
 a) Ovary b) Graffian follicle
 c) Cavity of ovule d) canal
4. The organism which reproduce through conjugation is
 a) ameoba b) euglena
 c) paramoecium d) bacteria
5. The process in which the organisms produce their organisms
 a) reproduction b) respiration
 c) endocrine gland d) growth
6. Which of the following material changes in paramoecium in conjugation
 a) protoplasm b) nucleic material
 c) sap of vacuoles
 d) chromatin material
7. Which of the following reproduce through leaves?
 a) Bryophyllum b) Rose
 c) Watermelon d) Marigold
8. Which of the following is not concerned with stored bread mould?
 a) blackish material forms on the bread
 b) formed fungi is Rhizopus
 c) the fungi Rhizopus keeps the bread fresh
 d) Spores are formed in Rhizopus
9. Which of the following reproduce through spores?
 i) Mucor ii) Bacteria
 iii) Rhizopus iv) Fern
 a) i only b) ii, iii, iv only
 c) ii, iii only d) all
10. Which of the following gland belongs to male reproductive system?
 a) salivary gland b) sebacious gland
 c) gastro enteron d) cowper gland

ANSWERS

- 1) b; 2) c; 3) b; 4) c; 5) a;
 6) b; 7) a; 8) c; 9) d; 10) d

7. Coordination in life processes

1. Reverse peristalsis is seen in
 a) tiger b) squirrel
 c) cow d) cat

2. When does peristalsis occur in anti clock-wise?
 a) when bolus moves forward
 b) when we drink water
 c) when vomiting
 d) when we are in fasting
3. Mohan took lunch at 1'O clock. How much time it takes to digest 100% and again he has to eat?
 a) 2-5 hours b) 2-3 hours
 c) 4-7 hours d) 4-5 hours
4. Which of the following is not concerned with Ghrelin
 a) This hormone secretes when stomach is empty
 b) certain cells in the walls of stomach secretes ghrelin
 c) due to the secretion of Ghrelin, hunger signals generates
 d) Ghrelin suppresses the hunger
5. Janani wrote the dental formula like this $\frac{2}{2}, \frac{1}{1}, \frac{2}{2}, \frac{2}{2}$. Which teeth were lacked in this?
 a) premolars b) incissors
 c) canines d) molars
6. What do we know by the p^H value?
 a) Acid base medium
 b) Acid medium only
 c) Base medium only
 d) Acid, base and neutral medium
7. The animal which are active during night time and collect food are called
 a) nocturnals b) amphibians
 c) sponges d) diurnals
8. If the chyme is pushed backwards in small quantity, then it reaches to
 a) oesophagus b) small intestine
 c) duodenum d) large intestine
9. Which nerve plays an important role in identification of taste?
 a) 6th cranial nerve b) thick nerve
 c) 5th cranial nerve d) 10th nerve
10. The type of teeth used to tear a sugarcane
 a) incissors b) canines
 c) premolars d) molars

ANSWERS

- 1) c; 2) c; 3) d; 4) d; 5) d;
 6) d; 7) a; 8) c; 9) c; 10) b

**8. Heredity-
From Parent to Progeny**

1. Which of the following is not concerned with Mendels observation on seeds
 a) colour b) shape
 c) yellow and green colour
 d) length of the stem
2. Which of the following is not the reason for choosing of pea plant by Mendal for his experiments?
 a) having of bisexual flower
 b) annual plant
 c) self pollination
 d) not suitable for crossing
3. Observe A and B statements
 A. Yellow colour YY is pure breed
 B. Green colour yy is also pure breed
 a) both are true b) only A is true
 c) only B is true d) both are false
4. If there are two different factors for a character, it is called

- a) Heterozygous b) Homozygous
 c) independent assort
 d) dominant
5. The alleles or factors which are named by Mendal are known as
 a) Genes b) Heritable factors
 c) factors d) traits
6. The number of autosomes in human being
 a) 23 pairs b) 22 pairs
 c) 1 pair d) 46 pairs
7. During the following, variation occurs
 i) During reproduction
 ii) changes in DNA transcription
 iii) changes in RNA transcription
 iv) synthesis of protein
 a) i, ii, iii only b) i only
 c) i, ii only d) i, iv only
8. One person become obese along with his age. Is this obese character also be transmitted to his progeny?
 a) can't say b) not transmitted
 c) compulsorly transmitted
 d) may be expressed in F2 generation
9. Which of the following are analogous organs
 a) wings of birds, legs of cheetah
 b) wings of bat, fins of whale
 c) wings of birds, wings of bat
 d) wings of bat, legs of horse
10. In which of the following rocks, the fossils are formed?
 a) Magnus rocks b) Sediments
 c) Modified rocks d) All

ANSWERS

- 1) d; 2) d; 3) a; 4) a; 5) a;
 6) b; 7) c; 8) b; 9) c; 10) b

**9. Our Environment -
Our Concern**

1. Insectivores feed on aphids grasshopper. we can represent the statement through one of the following
 a) food levels b) food chain
 c) Trophic level d) food web
2. Rotation of crops genetic strains, sterility are the methods to prevent the peets
 a) bio-accumulation
 b) bio-magnification
 c) bio-pollution
 d) bio-logical control
3. Which of the following is biotic factor
 a) air b) soil c) plant d) sunlight
4. Minimata disease in Japan was caused by the accumulation of
 a) DDT b) Lead
 c) Methyl mercury d) Arsenic
5. Which of the following should be less, so that the top most carnivores will get more energy
 a) producers b) tropic levels
 c) consumers d) mass
6. Which of the following do plants not compete for?
 a) water b) food
 c) space d) All the above
7. First trophic level of ecological pyramid indicates
 a) Producers b) Primary consumers
 c) Secondary consumers
 d) Top consumers

8. The loss of energy at each trophic level of food chain is
 a) about 10-20% b) about 20-30%
 c) about 30-40% d) about 40 to 60%
9. The fossil fuels are
 a) Coal b) Petroleum
 c) Natural gas d) All the above
10. Swatch Bharath program related to
 a) agriculture b) industries
 c) environment d) stock market

ANSWERS

- 1) d; 2) d; 3) c; 4) c; 5) b;
 6) d; 7) a; 8) a; 9) d; 10) c

10. Natural Resources

1. Which one of the following is micro irrigation technique?
 a) lift irrigation b) farrow irrigation
 c) tube wll irrigation d) Sprinklers
2. This logo shows



- a) Sustainable development
 b) Unsustainable development
 c) Regular employment
 d) Continuous development.
3. Which of the following practice is suitable for farmer with less water resource?
 (i) select short term crops
 (ii) cultivate commercial crops
 (iii) adapt drip irrigation system
 (iv) crop holiday
 a) i, ii b) i, ii, iii
 c) i, iv d) iii, iv
4. Drip irrigation can reduce water consumption by
 a) 50 % b) 20% c) 2% d) 70%
5. Percolation tanks helps to
 a) supply waste for agriculture
 b) increase ground water level
 c) preserve rain water
 d) prevent overflow of water during rainy season
6. The plants used for production of biofuel are
 a) Jatropa carcus b) Acacia arabica
 c) Helianthus anus d) Arachis hypogea
7. Biodiversity is more important for more than just food and for ___ also
 a) firewood b) medicines
 c) honey d) plastics
8. Which of the following is a non renewable resource?
 a) petroleum b) coal
 c) natural gas d) all the above
9. Which one of the following is a renewable resource?
 a) petroleum b) coal
 c) plants d) natural gas
10. Which is alternative method to prevent ground water depletion?
 a) Percolation pits b) Water sheds
 c) Recharge tanks d) All of them

ANSWERS

- 1) d; 2) a; 3) b; 4) d; 5) d;
 6) b; 7) b; 8) d; 9) c; 10) d



The first kidney transplantaion was performed between identical twins in 1954 by Dr. Charles Hufnagel was a surgeon in USA.

General Science-2 MODEL PAPER-I

GENERAL SCIENCE

(English Version)

Parts A and B

Time: 2½ Hours Maximum Marks: 50

Instructions:

1. Answer the questions under Part-A on a separate answer book.
2. Write the answers to the questions under Part-B on the question paper itself and attach it to the answer book of Part-A

PART - A

Time: 2 Hours

Marks: 35

SECTION - I

4×1 = 4

Note:

1. Answer ANY FOUR questions from the following.
 2. Each question carries ONE mark.
1. What are the similarities between excretion and secretion?
 2. Suma wants to know why belching is occurred. Write your answer?
 3. What is root pressure? How it is useful to plants?
 4. What is cell cycle?
 5. What will happen if Phytoplanktons are absent in pond eco system?
 6. What are the connecting substances between light reaction and dark reaction?

SECTION - II

5×2 = 10

- Note: 1. Answer ANY FIVE questions, choosing atleast TWO from each Group A and B.
2. Each question carries TWO marks.

GROUP - A

7. What would be the consequences if your diet completely lacks leafy vegetables?
8. Write the importance of pulmonary artery and pulmonary vein?
9. Write the health tips for protection of kidneys?
10. What is the inference about experiments with aphids?

GROUP - B

11. In what ways does sexual reproduction differs from asexual one? State atleast three reasons?
12. Why the stomach is structured like a bag rather than like a tube?
13. Why the pyramid of Biomass is always upright?
14. What are the impacts arising due to particulate pollutants?

SECTION - III

4×4 = 16

Note:

1. Answer ANY FOUR questions from

the following, choosing atleast TWO from each Group A and B.

2. Each question carries FOUR marks.

GROUP - A

15. Nutrition in autotrophs occur when there is light and even without light also. What is the difference between these two situations?
16. You want to talk to your drill teacher about muscular pain while doing exercise. Write some questions that you ask him?
17. Give reasons for the following questions?
 - a) Blood that flows from stomach to intestine will not go directly to heart but flows via liver. Why?
 - b) Valves are present only in veins but not in arteries why?
18. Define the following..
 - a) niche
 - b) food web
 - c) pyramid of number
 - d) bioaccumulation

GROUP - B

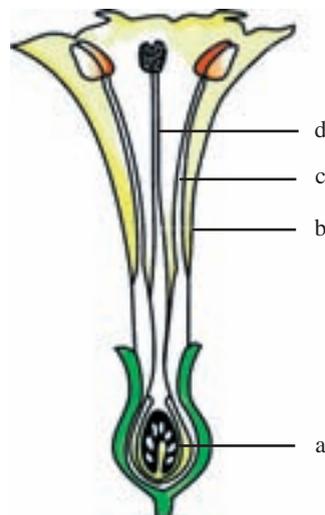
19. The man who developed by depending on the resources today is become reason for spoiling them. Analyse this?
20. Write the differences between mitosis and meiosis?
21. To understand the activity of saliva. Which test is to be conducted on carbohydrates. Write the procedure and precautions to follow while doing experiment?
22. Describe the process of dialysis in man? why it needed?

SECTION - IV

1×5 = 5

Note:

1. Answer ANY ONE question from the following.
 2. This question carries FIVE marks.
23. Draw a neat and labelled diagram of L.S. of kidneys?
 24. Observe the picture and label the following parts a, b, c, d and write their main functions?



PART - B

Time: 30 minutes

Marks: 15

30×½ = 15

I) Multiple choice questions:

Answer all the following..

1. The rate of Photosynthesis is not affected by:
 - a) light intensity
 - b) humidity
 - c) temperature
 - d) concentration of CO₂
2. The power houses of cells are
 - a) chloroplasts
 - b) nucleoli
 - c) Mitochondria
 - d) chromosomes
3. Which structures of the heart control the flow of the blood?
 
 - a) Arteries
 - b) Veins
 - c) Valves
 - d) Capillaries
4. Amber colour to urine is due to
 - a) Urochrome
 - b) Vasopressin
 - c) Creatine
 - d) Estrogen
5. Leaf movement in mimose helps to
 - a) reduce Photosynthesis
 - b) protect from grazers
 - c) releasing phyto hormones
 - d) regulate its growth
6. The part of the female reproductive system that produces the eggs?
 - a) ovary
 - b) epididymis
 - c) cervix
 - d) fallopian tube
7. Peristalsis is because of
 - a) concentration of longitudinal muscles
 - b) concentration of circular muscles
 - c) under control of autonomous nervous system
 - d) digestive secretions
8. Which of the following is not a variation in rose plant?
 - a) coloured petals
 - b) spines
 - c) tendrils
 - d) leaf margin
9. Which of the following plants not compete for?
 - a) water
 - b) food
 - c) space
 - d) all the above
10. Which of the following practice is suitable to farmer who is less water resources..
 - I) select short term crops
 - II) cultivate commercial crops
 - III) adopt drip system
 - IV) crop holiday
 - a) I, II
 - b) I, II, III
 - c) I, IV
 - d) I, III, IV

11. To save household fuel..
 - I) soak the food material before boiling
 - II) use pressure cooker for cooking
 - III) plan your cooking

Choose your answer.

 - a) I only
 - b) I, II
 - c) III only
 - d) All the above
12. Find, which gas is not a green house gas?
 - a) Methane
 - b) Ethane

- c) Chlorofluorocarbons
 - d) CO₂
13. Mosquito that causes malaria
 - a) female anopheles
 - b) aedes aegypti
 - c) culex fatigans
 - d) male anopheles
 14. Complete the flow chart..

Salt Water	97%
↓	
Ice, Glaciers	2.5 - 2.75%
↓	
Ground water	?

 - a) 0.01%
 - b) 3.2%
 - c) 0.7-0.8%
 - d) 4.2%
 15. You are remove all the incandescent bulbs in your home and fitted LED bulbs. This practice is known environmentally..
 - a) Reduce
 - b) Reuse
 - c) Recycle
 - d) Recover
 16. Identify the apparatus to prove salivary action on starch
 - I) testtube
 - II) flour
 - III) Iodine
 - IV) watch glass
 - a) I, II only
 - b) II, III only
 - c) III only
 - d) All the above
 17. The phyto hormone, relating to the ripening of fruits is?
 - a) abscisic acid
 - b) cytokinin
 - c) Ethylene
 - d) Gibberellin
 18. Immediately after the delivery, the mammary glands of the mother secrete?
 - a) milk
 - b) colostrum
 - c) blood
 - d) water
 19. In our country the legal age for marriage for boys is?
 - a) 21
 - b) 20
 - c) 18
 - d) 23
 20. The junction between nerve cells is known as
 - a) synapse
 - b) axon
 - c) stimuli
 - d) neuron

II) Fill in the blanks..

21. The food synthesized by the plant is stored as ____.
22. An aphid pierces its proboscis into the ____ to get plant juices.
23. Bowmans capsule and tubule taken together make a ____.
24. The part of the brain helps you in solving puzzles is ____.
25. ASHA means ____.

III) Match the following:

- | | |
|--------------------------|-------------------------|
| I) Group-A | Group-B |
| 26. Cell cycle | () A) DNA synthesis |
| 27. G ₁ stage | () B) Cytokinesis |
| 28. S stage | () C) Mitotic stage |
| 29. G ₂ Stage | () D) Transition stage |
| 30. M stage | () E) Inter stage |
| | () F) prophase |

KEY

- 1) b; 2) c; 3) c; 4) a; 5) b; 6) a; 7) c; 8) b; 9) d; 10) d; 11) d; 12) b; 13) a; 14) c; 15) a; 16) d; 17) c; 18) b; 19) d; 20) a; 21) starch; 22) phloem; 23) glomerulus; 24) cerebrum; 25) Accredited Social Health Activist. 26) E; 27) D; 28) A; 29) B; 30) C.



General Science-2 MODEL PAPER-II

GENERAL SCIENCE

(English Version) Parts A and B

Time: 2½ Hours Maximum Marks: 50

Instructions:

1. Answer the questions under Part-A on a separate answer book.
2. Write the answers to the questions under Part-B on the question paper itself and attach it to the answer book of Part-A

PART - A

Time: 2 Hours

Marks: 35

SECTION - I

4×1 = 4

Note: 1. Answer ANY FOUR questions from the following.

2. Each question carries ONE mark.
1. What is the role of saliva in the digestion of food?
2. Why does the rate of respiration change from time to time?
3. Which type of blood vessels carry blood away from the heart?
4. In winter season excessive repeated urination occurs. Why does it happen?
5. What is trophic level?
6. Is an insect visits to only one type of flower for nectar or different types of flowers?

SECTION - II

5×2 = 10

Note: 1. Answer ANY FIVE questions, choosing atleast TWO from each Group A and B.

2. Each question carries TWO marks.
- GROUP - A**
7. More snakes were introduced in one ecosystem. Write about the consequences?
8. Explain the necessary conditions for autotrophic nutrition in plants and what are its by products?
9. food some times enters the wind pipe and causes choking. How does it happen?
10. Write brief note on analogous organs?

GROUP - B

11. What is the difference between bolus and chyme?
12. Describe the process of the curd making experiment that you are conducted in your lab?
13. Write the functions of gibberelic acid?
14. Why the legs only causes edema during bus journeys?

SECTION - III

4×4 = 16

Note: 1. Answer ANY FOUR questions from the following, choosing atleast TWO from each Group A and B.

2. Each question carries FOUR marks.
- GROUP - A**
15. One student has done the experiment regarding the factors for Photosynthesis. He took the potted plant. He kept it in the

dark for 24 Hours. The next day he covered one of its leaves with black paper on which a design is cut and kept the total arrangement in the sun light for some hours.

Now answer the questions:

1. Which factor of Photosynthesis he wanted to observe?
2. Is there any controlling in this experiment? If yes, Explain?
3. Why did the student kept the plant in dark nearly 24 hours before going to perform the experiment?
16. What happens if diaphragm is not there in the body?
17. Which items do you take into consideration to explain the differences of arteries and veins?
18. The byproducts of plants are very useful to us. Prepare a table about alkaloids and its uses?

GROUP - B

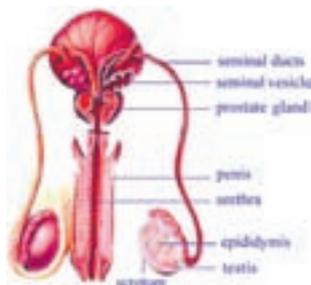
19. What happens if all functions of the human body are controlled only by brain?
20. which type of questions would you ask to know about the function of insulin to prevent diabetes?
21. Write the differences between..
 - a) Grafting- Layering
 - b) Stamen- Carpel
22. Male is responsible for sex determination of baby do you agree? If yes, write you answer with flow chart?

SECTION - IV

1×5 = 5

Note: 1. Answer ANY ONE question from the following.

2. This question carries FIVE marks.
23. Name the picture, observe the parts and answer the following questions?



1. How is epididymis formed?
2. Write the function of testis?
24. Draw the pyramid of number for the following food chain.
 - a) Grass grasshopper frog snake kite
 - b) Grass rabbit wolf

PART - B

Time: 30 minutes

Marks: 15

30×½ = 15

I) Multiple choice questions: Answer all the following..

1. Study the following..
 - a) Phenotype ratio 3:1
 - b) Genotype ratio 9:3:3:1
 - c) Independent assortment ratio 1:2:1:2
 Identify the correct ones among the above. ()

- a) a, b and c
 - b) a is correct, b is not correct
 - c) a is incorrect, b is correct
 - d) b is correct and c is incorrect
2. Travelling by the ship HMS beagle, Charles Darwin landed on one of these islands? ()
 - a) Maldives
 - b) Andaman, Nicobar islands
 - c) Galapagos islands
 - d) Fiji islands
 3. This vitamin is not soluble in the water ()
 - a) Riboflavin
 - b) Pyridoxine
 - c) Ascorbic Acid
 - d) Calciferol
 4. ATP, NADPH₂ are utilized in ()
 - a) light reaction
 - b) excretion
 - c) dark reaction
 - d) respiration
 5. Tracheal respiration is done in the following organisms ()
 - a) Amoeba
 - b) Grasshopper
 - c) Fish
 - d) Frog
 6. Haemoglobin present in our red blood cells is a kind of ()
 - a) carbohydrates
 - b) fat
 - c) protein
 - d) juices
 7. When we are hungry, the hunger pangs arise in our stomach. These hunger pangs are controlled by ()
 - a) diencephalon and 10th cranial nerve
 - b) medulla oblongata
 - c) diencephalon and 5th cranial nerve
 - d) peripheral nerves
 8. The wings of bats have skin folds stretched between elongated fingers is called? ()
 - a) adipose
 - b) petagium
 - c) blupper
 - d) malphigian
 9. Saliva secreted by us per day is? ()
 - a) 1-1.5 liters
 - b) 2-2.5 liters
 - c) 1-1.25 liters
 - d) 1.75 liters
 10. The most poisonous of all waster products of metabolism is ()
 - a) urea
 - b) uric acid
 - c) bilverdin
 - d) ammonia
 11. Identify the incorrect pair ()
 - a) Thyroxin - Thyroid
 - b) Adrenalin - Pituitary
 - c) Insulin - Pancreas
 - d) progesterone - Ovary
 12. Planting Gliricidia on field bunds makes the soil ()
 - a) Phosphorus rich
 - b) Potasium rich
 - c) Oxygen rich
 - d) Nitrogen rich
 13. The end products of aerobic respiration are ()
 - a) Lactic acid+Energy
 - b) Ethanol+CO₂+Energy
 - c) Lactic acid+Ethanol+Energy
 - d) CO₂+ Water+Energy
 14. Observe the a, b statements.. ()
 - a) Chloroplasts convert simple inorganic substances into compelx organic compounds
 - b) Light energy is required for synthesis of Carbohydrates
 - a) Both a and b are true
 - b) a is correct, b is wrong
 - c) b is correct, a is wrong
 - d) Both a and b are wrong
 15. If we cut the nerves which goes from res-

- piration organs to brain what happen.. ()
 - a) stops circulation of blood
 - b) reduces pulse
 - c) stops respiration process
 - d) unable to cut the nerves
16. Munemma is in uremia stage. so ()
 - i) limbs are swollen
 - ii) water and waste materials accumulate in the body
 - iii) suffers from weakness and fatigue
 - iv) no danger to kidney
 - a) All are correct
 - b) only 4th statement is true
 - c) 4th statement is false
 - d) second statement is false

17.
 It is a ()
 - a) sensory nerve
 - b) motar nerve
 - c) mixed nerve
 - d) synapse
18. List-A List-B ()

1. Budding	a. paramecium
2. Fusion	b. bacteria
3. Binary fusion	c. Yeast

 Identify the mis matched pairs ()
 - a) 1, 2
 - b) 2, 3
 - c) 1, 3
 - d) 1, 2, 3
19. Human organism is an internal combustion machine because of ()
 - a) assimilation of energy from food
 - b) liberate CO₂ during respiration
 - c) expel waste food at the end state digestion
 - d) secrete powerful digestive juices
20. The process of transmission of varied characters to offspring from parents ()
 - a) Inheritance
 - b) Mutation
 - c) Diversity
 - d) Environment

II) Fill in the blanks..

21. TT or YY, Tt or Yy are responsible for a ____ character.
22. Cultivation of paddy is suitable for ____ areas.
23. Narmada Bachao Andolan is initiated by ____
24. Solid particles and light particles present in air are called ____
25. Blood circulation was discovered by ____

III) Match the following:

- | | |
|----------------|---------------------------------------|
| I) Group-A | Group-B |
| 26. Villi | () A) Connecting small intestine |
| 27. Roughage | () B) avoid constipation |
| 28. Defecation | () C) Connecting large intestine |
| 29. Duodenum | () D) Inner walls of small intestine |
| 30. Colon | () E) Bolus formation |
| | F) Eliminating waste food |

KEY

- 1) a; 2) c; 3) d; 4) c; 5) b; 6) c; 7) a; 8) b; 9) a; 10) d; 11) b; 12) d; 13) d; 14) a; 15) c; 16) c; 17) a; 18) c; 19) a; 20) a; 21) dominant; 22) waterich; 23) Medha Patkar; 24) particulate matter; 25) William Harvey; 26) D; 27) B; 28) F; 29) A; 30) C.



ఇండస్ట్రియల్ అండ్ ప్రొడక్షన్ ఇంజనీరింగ్ కోర్సును మెకానికల్ ఇంజనీరింగ్కు అనుబంధంగా బోధిస్తున్నారు. చీట్లలో మెకానికల్ పూర్తిచేసిన అభ్యర్థులు ఎంటికలో ఇండస్ట్రియల్ అండ్ ప్రొడక్షన్ ఇంజనీరింగ్ కోర్సును చదువుకోవచ్చు.

Important Concepts

- Photosynthesis is a process by which green plants containing chlorophyll, produce food substances [glucose & starch] from CO₂ and H₂O using light as source of energy and release O₂ into atmosphere.
- In 1648, Von Helmont of Belgium, found that water was essential for the increase of plant mass.
- In 1770, Joseph Priestly revealed the essential role of air in the growth of plants. He discovered O₂ in 1774, but the name oxygen was coined by Lavoisier in the year 1775.
- In 1779, Jan Ingenhousz, a Dutch scientist, experimentally proved that in bright sunlight gas bubbles were formed around the hydrilla plant and it was Oxygen.
- In 1883, Julius Von Sachs found that chlorophyll is present in the chloroplast.
- In 1954, Daniel I. Arnon extracted chloroplast from plant cells, which could carry the photosynthesis.
- Saliva secreted by three pairs of salivary glands contains an enzyme amylase (ptyalin), which helps down in the breakdown of complex carbohydrates to simple ones.
- Vitamins are micro nutrients required in small quantities. They are water soluble (B complex, Vitamin C) and fat soluble (Vitamin A, D, E and K).
- Respiration is a process by which food is broken down by release of energy.
- Oxygen is carried in the blood by binding to haemoglobin which is present in the red blood cells.
- Each ATP molecule gives 7200 calories of energy. This is stored in the form of phosphate bonds.
- During daytime, the rate of photosynthesis is usually higher than that of respiration while at night it is just reverse in most plants.
- In human beings the transport of materials such as oxygen, carbon dioxide, food and excretory product is a function of the circulatory system.
- Heart is the vital organ of human beings and it is the beat of the heart that makes us alive. The size of our heart is approximately the size of our fist.
- William Harvey dissected the hearts of dead people and studied the valves between each atrium and its ventricle and noticed they were one way walls.
- Marcello Malpighi with the microscope saw the tiny blood vessels and identified that smallest arteries and veins were connected by very fine blood vessels called capillaries.
- Doctors measure the blood pressure with a device called sphygmomanometer.
- The normal BP of a healthy person is 120/80 mm of Hg, of which the numerator indicates systolic pressure while the denominator indicates diastolic pressure.
- In human beings, the waste products include CO₂, H₂O, Nitrogenous compounds like Ammonia, Urea, Uric acid, bile pigments and excess salts etc.
- Each kidney is composed of more than one million microscopic and thin tubular functional units called nephrons.
- Formation of urine involves 4 stages; Glomerulus filtration, Tubular reabsorption, Tubular secretion and Concentration of Urine.
- The artificial kidney that filters wastes from blood is called "dialysis machine" (William J Kolff, 1947).
- Nervous system and endocrine system are the systems that control and co-ordinate various functions in the body.
- Reproduction is necessary for life process for continuation of life by the production of offsprings which is of two kinds: 1. Sexual reproduction 2. Asexual reproduction.
- Cell division is of 2 types: 1. Mitosis or somatic cell division and 2. Meiosis or reproductive cell division.
- Russian scientist Pavlov found that even the thought of food will water our mouth.
- The walls of the stomach secrete HCl which kills bacteria present in the food.
- The acidic nature of the food in the intestine initiates the production of hormones like secretion and cholecystokinin which stimulates pancreas, liver and walls of small intestine to secrete pancreatic juice, bile juice and succus entericus.
- Respiration is controlled by the medulla oblongata of the autonomous nervous system.
- In about 1857, Gregor Johann Mendel started working on the problem of how variations are passed from one generation to another. He had chosen pea plants consisting of 7 distinguishing forms: flower colour, position, seed colour, shape, pod colour, pod shape, stem length.
- Law of dominance states that, among a pair of alleles for a character, only one expresses itself in the first generation, as one of the allele is dominant over the other.
- Each human cell contains 23 pairs of chromosomes. Out of these, 22 pairs are called autosomes and one pair is called allosomes.
- Fossils are the evidence of ancient life forms or habitats which have been preserved by the natural processes.
- The world of living things is termed as "Biosphere"
- The main climatic influences which determine these ecosystems are rainfall, temperature & the availability of light from the sun.
- By 2025, 1.8 billion people will be living in countries with absolute water scarcity.
- Scientists are exploring alternatives to fossil fuels. They are trying to produce renewable biofuels to power cars and trucks.

ఆంధ్రోపాలజీలో పీజీ..



డా. మురళీధరన్ టి.ఎం.ఐ. నెటవర్క్



ప్రొడక్షన్ అండ్ ఇండస్ట్రియల్ ఇంజనీరింగ్ కోర్సును అందిస్తున్న ఇన్స్టిట్యూట్ల వివరాలు తెలపండి?

- హైదరాబాద్లోని ఉస్మానియా విశ్వవిద్యాలయం.. ప్రొడక్షన్ ఇంజనీరింగ్లో బీఈ అందిస్తోంది. అర్హత: మ్యాథ్ మెటిక్స్, ఫిజిక్స్, కెమిస్ట్రీలతో ఇంటర్మీడియట్/10+2 ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.uceou.edu
- ఇండస్ట్రియల్ అండ్ ప్రొడక్షన్ ఇంజనీరింగ్ కోర్సును మెకానికల్ ఇంజనీరింగ్కు అనుబంధంగా బోధిస్తున్నారు. బీటెక్లో మెకానికల్ పూర్తిచేసిన అభ్యర్థులు ఎంటికలో ఇండస్ట్రియల్ అండ్ ప్రొడక్షన్ ఇంజనీరింగ్ కోర్సును చదువుకోవచ్చు. ఎంటిక అందిస్తున్న సంస్థల వివరాలు... హైదరాబాద్లోని జవహర్లాల్ నెహ్రూ టెక్నలాజికల్ విశ్వవిద్యాలయం.. ఇండస్ట్రియల్ ఇంజనీరింగ్ అండ్ మేనేజ్మెంట్లో ఎంటిక అందిస్తోంది.

- అర్హత: బీఈ/బీటెక్. ప్రవేశం: గేట్/పీజీఈసెట్లో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.jntuh.ac.in
- విశాఖపట్టణంలోని ఆంధ్రా విశ్వవిద్యాలయం.. ఇండస్ట్రియల్ ఇంజనీరింగ్లో ఎంటిక అందిస్తోంది. అర్హత: బీఈ/బీటెక్. ప్రవేశం: గేట్/పీజీఈసెట్/ఎయూసెట్లో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.andhrauniversity.edu.in
- హైదరాబాద్లోని ఉస్మానియా విశ్వవిద్యాలయం.. ప్రొడక్షన్ ఇంజనీరింగ్ స్పెషలైజేషన్తో ఎంటిక అందిస్తోంది. అర్హత: బీఈ/బీటెక్. ప్రవేశం: గేట్/పీజీఈసెట్లో ర్యాంకు ఆధారంగా. వెబ్సైట్: www.uceou.edu
- ఉద్యోగావకాశాలు: మ్యానుఫ్యాక్చరింగ్ అండ్ ఇంజనీరింగ్ సంస్థల్లో ఉపాధి పొందవచ్చు. ఆటోమొబైల్, ఏరోనాటికల్, షిప్ బిల్డింగ్, ఇన్స్ట్రుమెంట్ షిప్, అగ్రికల్చర్ / కన్స్ట్రక్షన్ పరిశ్రమల్లో ఉద్యోగాలు సాధించవచ్చు. విద్యుదు: ప్రొడక్షన్ ఇంజనీర్/సెప్టి ఇంజనీర్/ క్వాలిటీ కంట్రోల్ ఇంజనీర్/ప్లాంట్ ఇంజనీర్/మ్యానుఫ్యాక్చరింగ్ ఇంజనీర్/ ప్రాసెస్ ఇంజనీర్.

బ్యాచిలర్ ఆఫ్ ఫిజియోథెరపీ అందిస్తున్న సంస్థల వివరాలు తెలపండి?

- విశాఖపట్టణంలోని వీఎఫ్ఎంఎస్ కాలేజ్ ఆఫ్ ఫిజియోథెరపీ.. ఫిజియోథెరపీ కోర్సును అందిస్తోంది. ఈ ఇన్స్టిట్యూట్ డాక్టర్ ఎన్టీఆర్ ఆరోగ్య విశ్వవిద్యాలయానికి అనుబంధంగా పనిచేస్తుంది. అర్హత: ఫిజిక్స్, కెమిస్ట్రీ, బయాలజీలో ఇంటర్మీడియట్/10+2

- ప్రవేశం: ఎంసెట్లో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.vapms.org
- ఎన్టీఆర్ హెల్త్ యూనివర్సిటీకి అనుబంధంగా ఉన్న అనేక ప్రైవేటు హాస్పిటళ్లు, కాలేజీల్లో ఫిజియోథెరపీ కోర్సు అందుబాటులో ఉంది. అర్హత: బైపీసీతో ఇంటర్మీడియట్/10+2 ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: http://ntruhs.ap.nic.in/

ఆంధ్రోపాలజీలో పీజీ కోర్సును అందిస్తున్న కోర్సుల వివరాలు తెలపండి?

- విశాఖపట్టణంలోని ఆంధ్రా విశ్వవిద్యాలయం.. ఆంధ్రోపాలజీలో పీజీని అందిస్తోంది. అర్హత: బీఎస్సీ/ జవాలజీ ఒక సబ్జెక్టుగా బీఎస్సీ. ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.andhrauniversity.edu.in
- తిరుపతిలోని శ్రీ వేంకటేశ్వరా విశ్వవిద్యాలయం.. ఆంధ్రోపాలజీలో పీజీని అందిస్తోంది.

- అర్హత: జవాలజీ సబ్జెక్టుతో బీఎస్సీ. ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా.
- ఇదే యూనివర్సిటీ బయాలజీకల్ ఆంధ్రోపాలజీలో పీజీ అందిస్తోంది. అర్హత: సోషల్ ఆంధ్రోపాలజీలో బీఏ. ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా.
- సోషల్ ఆంధ్రోపాలజీలో పీజీ అందిస్తోంది. అర్హత: ఏడైనా డిగ్రీ. ప్రవేశం: ప్రవేశపరీక్షలో ఉత్తీర్ణత ఆధారంగా. వెబ్సైట్: www.svuniversity.ac.in



మీ సలహాలు, సందేహాలు చంపాల్సిన చిరునామా: సాక్షి భవిత, కేరాఫ్ సాక్షి జర్నలిజం సూయర్, 8-2-696, 697/75/1, సిఆర్ గ్రాండ్ హోటల్ పక్కన, రోడ్ నెం.12, బంజారాహిల్స్, హైదరాబాద్-500034. ఈ-మెయిల్: sakshieducation@gmail.com

ఎదోతరగతి స్టడీ మెటీరియల్

హైదరాబాద్: మార్చిలో పదోతరగతి పరీక్షలు జరగనున్న నేపథ్యంలో సాక్షి ఎడ్యుకేషన్ సమగ్ర స్టడీ మెటీరియల్ రూపొందించింది. కొత్త సిలబస్ ప్రకారం తెలుగు, ఇంగ్లీష్లో గౌడెన్స్, పాఠ్యాంశాలు, బిట్బ్యాంక్, కాన్సెప్టు, పుస్తకాలను అందిస్తోంది. వీటితోపాటు సబ్జెక్టుల వారీగా మోడల్ పేపర్లు, ప్రీవియస్ పేపర్స్, మ్యాప్ పాయింటింగ్, సైన్స్ ఇన్ డైలీ లైఫ్ వంటివి సైట్లో అందుబాటులో ఉన్నాయి. అలాగే ఏపీఆర్టీసీ, పాలిసెట్కు కూడా సమగ్ర స్టడీ మెటీరియల్, బిట్బ్యాంక్, మోడల్ పేపర్లు, ప్రీవియస్ సాల్వ్డ్ పేపర్లు వెబ్సైట్లో చూడొచ్చు. వివరాలకు.. <http://www.sakshieducation.com/Tclass/Index.html>

