Telangana Board Class 10 General Science Part II 2019 Question Paper with Solutions

PART - A

Section-I **7 × 1 = 7**

1. **Write two examples of non-renewable resources.**

Answer: Non-renewable energy includes fossil fuels such as coal and petroleum, and they deplete over time. Non-renewable energy is mainly the fuels from fossil deposits. Some examples of non-renewable energy are coal, crude oil, compressed natural gas and uranium.

2. **The two questions which you can ask the doctor to know more details about high blood pressure.**

Answer: Given here are some questions to ask the doctor to know more about high blood pressure:

1. What causes high blood pressure?
2. What are the health problems related to it?
3. What is the treatment for high blood pressure?
4. What are the side effects of the drugs taken for high blood pressure?.

3. **Write two slogans for the campaign on malnutrition.**

Answer: Given below are some slogans for the campaign on malnutrition:

1. “Eat Right, Live Strong” or
2. “Eat Well and Live Well”
3. “Your Health is Your Wealth”

4. **Why do we call the appendix as a vestigial organ?**

Answer: The appendix is called a vestigial organ because its original food digestive functions are lost or almost negligible in the current human body. Vestigial organs are those which are of no function or use to the body. So, the appendix is also called a vestigial organ.

5. **Write two secondary metabolites, which you use in your daily life.**

Answer: Secondary metabolites host in important functions such as protection, competition and species interaction. The secondary metabolites that we humans use in our daily life are medicines, recreational drugs, flavourings, or pigments.

6. **What happens if there is no peristaltic movement in Oesophagus?**

Answer: If there is no peristaltic movement in the Oesophagus, then the food particles we eat will not slide down in the Oesophagus. The digestion of food will also not occur in the stomach and small intestine.

7. Identify the figure.

Answer: This figure represents a forest wildfire.

Section II **6 × 2 = 12**

8. Write two voluntary functions and two involuntary functions you have observed in your body.

Answer: Functions like walking, eating, jumping or running, etc., are voluntary actions while heartbeats, digestion, or sneezing are all involuntary functions. Learn more about voluntary and involuntary actions here.

9. Write two chemicals and two materials required to conduct the experiment "Heat and Carbon dioxide are evolved during anaerobic respiration."

Answer: The chemical used to conduct the experiment includes the KOH or potassium hydroxide solution and Vaseline. Meanwhile, other materials used in this experiment are a conical flask, the beaker, a test tube bend at two angles, germinating seeds, and so on. Check out the experiment here.

10. When does parthenogenesis occur? Write the names of two animals in which parthenogenesis takes place.

Answer: Parthenogenesis is a type of asexual production in which an unfertilised egg produces or develops into a new person. Parthenogenesis occurs in honey bees, parasitic wasp, ants and birds, etc.

11. What happens if there is no evolution?

Answer: Evolution is the basis for this massive world. It is a process that enhances the probability of survival and the formation of new species. In a world with no evolution, there would be no life. Life would have become extinct at the beginning itself without evolution, as it is the process used by the organisms to adapt to the changing environment.

12. Draw the figure of metaphase in Mitosis and write about it.

Answer: Metaphase is the third stage of Mitosis, where the duplicated genetic material is carried from the nucleus of the parent cell to the two identical daughter cells. Find more about metaphase in mitosis with the figure in the link given.

13. Observe the following table:

Name of the phylum/ organism	Excretory system/ organ
Protozoa	Diffusion
Porifera	Water bathes all their cells
Platyhelminthes	Flame cells
Annelida	Nephridia
Arthropoda	Green Glands
Reptiles. Aves and Mammals	Kidney

Based on the above table, write the answers to the following questions.
(i) In the above table, which living organisms contain kidneys as excretory organs like human beings?
(ii) Write the excretory organs present in the Earthworm and Cockroach.

Answer: (i) From the above table, you can see that Reptiles, Aves (birds), and Mammals have kidneys as excretory organs, the same as human beings.
(ii) Earthworm is a part of the Annelida phylum, and so its excretory organ is Nephridia, as shown in the table above. Meanwhile, Malpighian tubules constitute the excretory organs of cockroach and other insects.

Section III **4 × 4 = 16**

14. Explain the process of coagulation of blood.

Answer: Blood Coagulation is the process of forming a clot or thrombus to prevent excess loss of blood from the body. It is a gel-like mass that is formed by

the platelets and fibrin in the blood. Learn about the process of blood coagulation from here.

Or

Explain in brief any two pieces of evidence of evolution.

Answer: Evolution is the change in a species' physical characteristics over numerous generations, and it depends on the process of natural selection. The theory of evolution is based on the idea that all species are related and progressively changes over time. Find here details about evidence of evolution.

15. Explain the Phytohormones, which controls growth in plants.

Answer: Plants need external factors like sunlight, water, oxygen, minerals for their growth and development. Apart from these, some intrinsic factors regulate the growth and development of plants. These are called plant hormones or "Phytohormones."

Or

Explain the importance and implementation of community based interventions and farmer based interventions for water management.

Answer: Given here is the importance and implementation of community based interventions for Water Management:

- The community people make use of water after proper planning. The communities can recognise and agree to utilise only the amount of water required for their daily activities.
- Knowing that water plays a crucial role in everyone's life, the community builds a smooth relationship with their community people and divides water usage.
- They participate in conflict and dispute resolution related to water resource management.
- The importance of water is even taught to kids in the community to enrich water usage among kids.

Find here some farmer-based interventions for Water Management:

- With proper planning, people can manage the farm activities by taking into account the availability of water resources.
- Farmers can save the rain water for household purposes in drums or well, so they need not depend on the other water sources.
- Have to plan proper water usage for various soil types.

16. Explain the procedure and precautions to prove "the presence of starch in leaves" experiment.

Answer: Given here is the experiment to test the presence of starch in leaves.

Or

Explain the procedure and observations of the experiment conducted to observe the internal structure of the kidney.

Answer: Aim: Studying the external and internal features of a kidney

Materials required: Freshly collected specimen of sheep/goat's kidney from the butcher or 3D Model of a kidney, sharp blade/scalpel, tray, and a jug of water.

Procedure for observation:

1. Before coming to the class, wash the kidney thoroughly so that blood is completely drained.
2. Put the kidney in the tray and observe it.
3. Note your observations in the observation book.
4. With the help of a sharp blade, take a longitudinal section here; you are advised to do this activity under your teacher's guidance and observe the internal structure.

Draw what you have observed and compare it with Kidney of Goat and LS Kidney of Goat. Check

- What is the shape of kidneys?
- What is the colour of the kidney?
- Do you find any attachments on the upper portion of the kidney?
- Are the Internal structures similar to the Kidney of a Goat?
- What is the colour of the outer part in L.S of the kidney?
- In L.S of the kidney where do you find the dark brown colour portion?
- How many tubes are coming out from the kidney fissure?

Don't forget to wash your hands with antibacterial lotion after completing dissection. Now let us know the structure of the human excretory system and its functions. In Human beings there is a pair of beans shaped, reddish brown structures in the abdominal cavity attached to the dorsal body wall (fig-3) one on either side of the backbone, they are kidneys. The right kidney is placed slightly lower than the left kidney. The size of the kidney is 10 cm in length, 5-6 cm in breadth, and 4 cm in thickness. Each kidney is convex on the outer side and concave on the inner side. The position of the right kidney is lower than the left kidney due to the presence of the liver above. The inner side of each kidney has a fissure or hilum for the entry of a renal artery, exit of a renal vein and an ureter. Renal artery brings oxygenated blood loaded with waste products and renal vein carries deoxygenated blood. The waste products generated in various organs of the body are filtered and removed by the kidneys.

Internal structure of the kidney: Observe L.S of the kidney to know more about internal structure. It shows two distinct regions. Dark-coloured outer zone called the cortex and pale inner zone called medulla. Each kidney is made up of approximately more than one million (1.3 to 1.8 million) microscopic and thin tubular functional units called nephrons or uriniferous tubules

Do not forget to wash your hands with antibacterial lotion after completing dissection. Now let us know the structure of the human excretory system and its functions. In Human beings, there are a pair of beans shaped, reddish-brown structures in the abdominal cavity attached to the dorsal body wall, one on either side of the backbone; they are kidneys. The right kidney is placed slightly lower than the left kidney. The kidney's size is 10 cm in length, 5-6 cm in breadth, and 4

cm in thickness. Each kidney is convex on the outer side and concave on the inner side. The right kidney position is lower than the left kidney due to the liver's presence above. Each kidney's inner side has a fissure or hilum for the entry of a renal artery, exit of a renal vein, and a ureter. The renal artery brings oxygenated blood loaded with waste products, and the renal vein carries deoxygenated blood. The waste products generated in various organs of the body are filtered and removed by the kidneys.

The kidney's internal structure: Observe L.S of the kidney and find out more about the internal structure. It shows two distinct regions. The dark-coloured outer zone is called the cortex, and the pale inner zone is called the medulla. Each kidney is made up of approximately more than one million (1.3 to 1.8 million) microscopic and thin tubular functional units called nephrons or uriniferous tubules.

17. Observe the following table:

Reproduction system	Organisms
Fission	Paramoecium, Bacteria
Budding	Yeast, Hydra
Fragmentation	Flatworms, Spirogyra
Rhizome	Ginger, Turmeric
Cutting	Rose, Hibiscus
Grafting	Citrus, Apple

Based on the information given in the table, write the answers to the following questions.

(i). Write the names of two organisms that show asexual reproduction.

(ii) Write two artificial vegetative propagation methods mentioned in the table.

(iii) Write the names of two plants, which undergo natural vegetative propagation mentioned in the table

(iv) In fission, how many organisms can we get from one organism.

Answer: (i) Fission, Budding, and fragmentation are all asexual methods of reproduction. Hence, two organisms that show asexual reproduction are Bacteria and flatworms.

(ii) Cutting and grafting are the two artificial vegetative propagation methods.

(iii) Ginger and Turmeric are two plants that undergo natural vegetative propagation

(iv) In fission, two or more organisms can be produced from one organism.

Or

Observe the following:

Observe the following:
Glucose → Pyruvic Acid + Energy
(3 Carbon compound)

Absence or low amount of Oxygen (Anaerobic respiration and fermentation)

↓

Lactic acid + Energy
E.g. Lactobacillus

Ethanol + CO_2 + Energy
E.g. Yeast

Presence of Oxygen (Aerobic Respiration)

CO2 + H20 + Energy
E.g. Plants and Animals

Write the answers to the following questions.

(i) How many Pyruvic acid molecules form from one glucose?
(ii) What condition influences Pyruvic acid to participate in Aerobic and Anaerobic respiration?
(iii) In which we get more energy in both Aerobic and Anaerobic respiration?
(iv) The chemical that is formed in human muscles during anaerobic respiration.

Answer: (i) One glucose breaks down into two molecules of Pyruvic acid
(ii) If the Oxygen is absent or only available in a low amount, then the Pyruvic acid takes part in Anaerobic respiration or fermentation. At the same time, it takes place in aerobic respiration in the presence of oxygen.
(iii) Aerobic respiration is more effective at releasing energy as compared to anaerobic respiration. Hence, we can conclude that we get more energy during Aerobic respiration.
(iv) The glucose found in the human muscles gets converted to lactic acid during anaerobic respiration. So, the chemical that is formed in the human muscles during anaerobic respiration is Lactic acid.