ST. JOHN'S PUBLIC SCHOOL, NAGPUR

Science Model Answer Paper

Class 7

Q: I) Choose the correct answer: (1x5=5M)

1. Ans: d. Kerosene
2. Ans: a. Battery
3. Ans: d. Salt
4. Ans: b. bud
5. Ans: c. Odometer

Q: II) Fill in the blanks: (1x5= 5M)

1. Mirror
2. Sewage
3. Fuse
4. Living
5. Gas/Gaseous

Q: III) Name the following: (1x5=5M)

1. Forest
2. Real image
3. Heart Rate
4. Stamen
5. Electromagnet

Q: IV) Answer the following in one sentence each: (1x5=5M)

1. World Water Day celebrated is celebrated on 22nd March.
2. Transfer of pollen grains from anther to stigma is termed as Pollination.
3. There are small openings on the lower surface of the leaves. These pores are called stomata.
4. Electric current has the following effect : (Any 1)
   (i) Electric current can give rise to heating and lighting.
   (ii) Electric current can convert a straight conductor into a temporary magnet.
5. Any 1 (i) Concave mirrors are commonly used in torches, searchlights and headlights of vehicles to get powerful parallel beams of light.
   (ii) They are used as shaving mirrors to see a larger image of the face.
   (iii) Dentists use concave mirrors to view large images of the teeth of the patients.
   (iv) Large concave mirrors are used to concentrate sunlight in order to produce heat in the solar furnaces.

Q: V) Answer the following in short: (3x5=15M)

1. Sanitation and disease are closely related. Lack of sanitation leads to unhygienic conditions; which creates many communicable (contagious) diseases. Maintenance of sanitation removes the chances of such diseases.
2. The image which cannot be obtained on a screen is called virtual image. For example, virtual image is always formed in case of plane mirror and convex mirror.
3. .No. Since the given circuit does not have any current source, the wire does not behave as a magnet and hence, the compass needle will not show any deflection.

   OR

   Wastewater is passed through bar screens which remove large objects like rags, sticks, cans, plastic packets, napkins etc. Water then goes through Grit and Sand removal tank, where sand, grit and pebbles settle down. Water so cleared is called clarified water.

4. Time taken by Suraj is 20 min.
   Speed of Suraj is 2 m/s
   As we know,
   Speed = distance / time ,
   Distance = Speed × Time
   Now time in seconds (for same unit in equations) = 20 × 60 = 1200 sec
   Distance = 2 × 1200 = 2400 m
   Hence 2400m = 2400/1000 = 2.4 km
   Hence 2.4 km is the distance.
5. A concave lens always forms a virtual image of an object. The images formed by a concave lens are also diminished, that is, smaller than the size of the object.

OR

If the people of the fifty houses use the ten tube wells, then the water required by them is drawn from the ground. If these tube wells are used for long time, then the ground water would be reduced and the water table would go down.

Q: VI) Answer the following in detail: (5x2=10M)

1. Sewage or wastewater from various sources needs to be treated. The treatment involves physical, chemical and biological process. The steps involved in getting clarified water are as follows:

(i) Firstly all the physical impurities like stones, plastic bags, cans etc. are to be removed. It is done by passing the water through bar screens.

(ii) Then water is taken to grit and sand removal tank where impurities are removed by sedimentation (allowed to settle down).

(iii) Solid impurities and feaces etc. are collected from bottom of water. These impurities collected are called sludge.

(iv) Clarified water is cleaned of other impurities by aerator. All disease causing bacteria are removed by chlorination.

OR

The heart is an organ which beats continuously to act as a pump for the transport of blood, which carries other substances with it. The human heart is divided into four chambers. The upper two chambers are called right and left atrium and the lower two chambers are called the right and left ventricles. Right atrium receives carbon dioxide-rich blood from the body. Blood from right atrium enters the right ventricle, which contracts and pumps the blood to the lungs. On the other hand, oxygen-rich blood from the lungs returns to the left atrium. From the left atrium, blood enters left ventricle. Left ventricle contracts and pumps the blood to all parts of the body. Hence, the rhythmic contraction and expansion of various chambers of the heart maintains the transport of oxygen to all parts of the body.

2. There is no waste in forest because:
   i. Forest includes autotrophs, heterotrophs, saprotrophs and decomposers.
   ii. Autroptrophs prepare their own food from the nutrients available in the soil, while heterotrophs depend upon autotrophs or other heterotrophs for food.
   iii. Saprotrophs act upon dead and decaying matter.
   iv. When autotrophs and heterotrophs die, decomposers acts upon them and form humus.
   v. Humus contain nutrients that are again used up by autotrophs.
   vi. Thus the cycle of nutrients continue.
   vii. The end products of one level are used up organism in the next level.

Q: VII) Draw neat-labeled diagram of the following: (5x1=05M)

a. Make a sketch showing groundwater and water table.