

# SUCCESS KEY TEST SERIES

First Term Exam (Sample Paper) [ MODEL ANSWER ]

Std: VIII (E.M)

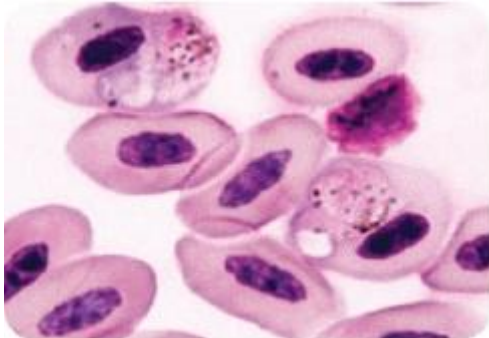
Subject: General Science

Time: 2Hrs

Date :

Chapter No- 1 to 10

Max Marks: 40

- Q.1(A) Attempt the following:** 5
- (1) **Fill in the blanks:** 1  
Ans. Cisternae
- (2) **Find the odd man out** 1  
Ans. Vinegar is a liquid in a liquid type of solution while rest are solid in liquid I type of solution.
- (3) **Complete the analogy:** 1  
Ans. Heterotrophic
- (4) **Write True or False** 1  
Ans. False, Mass of an atom is concentrated is its nucleus.
- (5) **Who am I:** 1  
Ans. Chlorophyll
- (B) Choose the proper alternative and fill in the blanks:** 5
- (1) Ans. (a) Nucleus.  
(2) Ans. (a) Bhopal  
(3) Ans. (b) 2  
(4) Ans. (b) decreases  
(5) Ans. (a) viruses
- Q.2 Attempt the following:(Any Five)** 10
- (1) **Define the following:** 2  
Ans. The unit of potential difference in SI system is Volt (V).
- (2) **Give reasons:** 2  
Ans. 1. There are various techniques to build earthquake resistant buildings.  
2. Separating the foundation of the building from the land prevents the building from collapsing when the earth shakes.  
3. This method is employed with the help of bearings, springs etc., which reduces the intensity of vibration.
- (3) **Draw the following diagram:** 2  
Ans. 
- (4) **Distinguish Between** 2  
Ans. **Contact force:**  
1. A contact force is a force applied to a body by another body that is in contact with it.  
2. The bodies need to be in physical contact.  
3. Eg. Frictional force, Muscular force etc.

**Non-contact force:**

1. A non-contact force is a force that is applied between two objects even if the two objects are not in contact.
2. The bodies need not to be in physical contact.
3. Eg. Electrostatic, gravitational, magnetic force etc.

**(5) Solve the following****2**

Ans. (i) As cells potential is 2 V.

$$\begin{aligned}\text{So Total Potential difference of the battery} &= 2V + 2V + 2V \\ &= 6V\end{aligned}$$

(ii) As cells potential is 2 V.

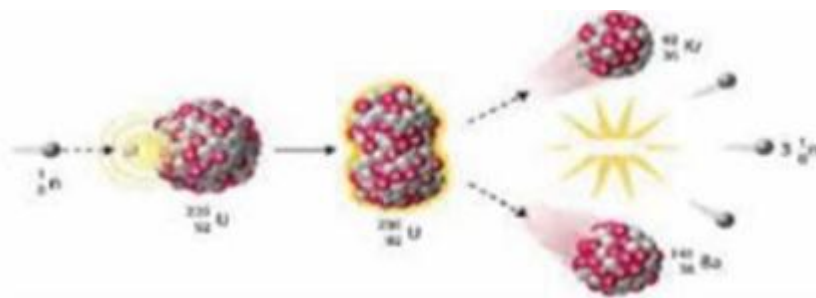
$$\begin{aligned}\text{So Total Potential difference of the battery} &= 2V + 2V + 2V + 2V \\ &= 8V\end{aligned}$$

**(6) Answer the following****2**

Ans. A source is required to produce a uniform flow of charges in a circuit. Such a general device is an electric cell. The main function of various electric cells is to maintain a constant potential difference between its two terminals. These are used in a range of machines from wrist watches to submarines. Out of these, you must be aware of solar cells.

**Q.3 Answer the following in brief: (Any Five)****15**

- (1) Ans. Nucleus at the centre of the atom is present in Rutherford's atomic model but it is absent in Dalton's and Thomson's atomic models.
- (2) Ans. On the basis of  $\alpha$ -particle scattering experiment, Rutherford put forward the nuclear model of an atom consisting of following features:
- i. There is a positively charged centre in an atom called the nucleus,
  - ii. Almost the entire mass of an atom is concentrated in the nucleus,
  - iii. The negatively charged particles called electrons revolve around the nucleus in circular paths,
  - iv. The total negative charge on electrons is equal in magnitude to the total positive charge on protons in nucleus. As the opposite charges are balanced, the atom is electrically neutral.
  - v. There is an empty space between the atomic nucleus and the revolving electrons.
- (3) Ans.
- i. Nuclear reactor is a machine that generates electricity on large scale by using atomic energy.
  - ii. In a nuclear reactor, the nuclear energy in atom is released by bringing about nuclear reactions on the nuclear fuel.
  - iii. a nuclear reaction with example of a nuclear fuel, namely, Uranium - 235. On bombardment with slow speed of neutrons, the nucleus of the isotope Uranium - 235 undergoes nuclear fission to form nuclei of two different elements Krypton - 92 and Barium - 141 and 2 to 3 neutrons
  - iv. A large amount of nuclear energy is released during a chain reaction of fission.
  - v. To control the chain reaction in the nuclear reactor it is necessary to decrease the speed and number of neutrons. For this purpose, the following provision is made in a nuclear reactor.
    - a. Moderator: Graphite or heavy water is used as moderator for reducing the speed of neutrons.
    - b. Controller: To reduce the number of neutron by absorbing them rods of boron, cadmium, beryllium etc. are used as controller.
  - vi. The heat produced in the fission process is taken out by using water as coolant. Water is transformed into steam. By means of this heat, turbines are driven, and electricity is generated.

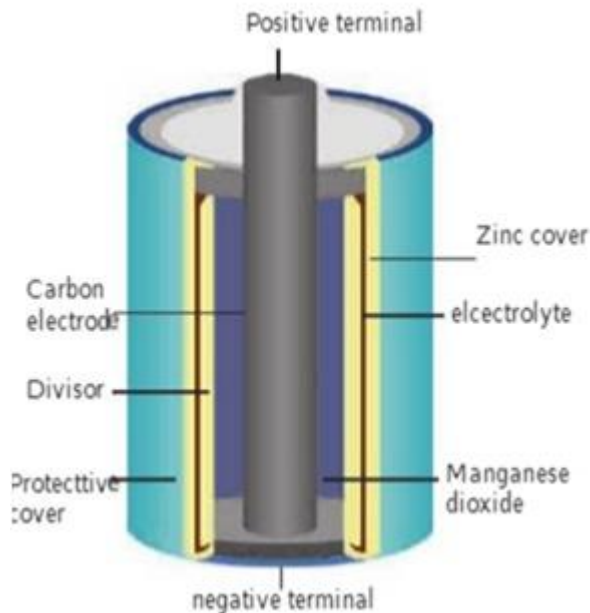


- (4) Ans. Some radioactive isotopes are used in various fields such as agriculture, industry, medicine and research,
- i. Uranium-235 is used for electricity generation and for nuclear fission.
  - ii. Cobalt-60 is used in the treatment of fatal diseases like cancer,
  - iii. Iodine-131 is used in the treatment of goitre,
  - iv. Sodium-24 is used for detection of cracks (leakage) in the underground pipes,
  - v. Carbon-14 is used for determining the age of archeological objects,
  - vi. Some radioactive isotopes are used for food preservation.
- (5) Ans. 1. Water pollution:
- a. Effluent from small scale industries directly released in water bodies changes it's the chemical properties and colour.
  - b. Dumping of garbage into streams result in pollution by plastic, waste food, etc.
2. Soil pollution:
- a. Landfilling or improper dumping of domestic garbage leads to pollution of soil.
  - b. Leakage of sewer pipeline or sewage tanks pollute soil.
3. Air pollution:
- a. Heavy vehicular traffic causes release of pollutants in air.
  - b. Burning of waste contaminates the air with particulate matter, fly ash and other toxic pollutants.
- (6) Ans. According to Dalton's Atomic Theory
- i. matter is made of atoms and atoms are indivisible and indestructible.
  - ii. All atom of an element are alike while different element have different atom with different mass.
  - iii. According to John Dalton, the atom turns out to be a hard, solid sphere with no internal structure.
  - iv. Atoms combine to form molecules.
  - v. Molecule is the smallest unit of compound.
  - vi. According to this theory, the mass is distributed uniformly in an atom.
- (7) Ans. The buoyant force comes from the upward pressure exerted on the object by the fluid. Because the pressure increases as the depth increases, the pressure on the bottom of an object is always larger than the force on the top - hence the net upward force. The buoyant force is present whether the object floats or sinks. Examples: we feel lighter when we are in water, this is due to buoyant force. Following factors decides whether any object will get sunk in the liquid or will float on the surface, or float inside the liquid:
1. The object floats if the buoyant force is larger than its weight.
  2. The object sinks if the buoyant force is smaller than its weight.
  3. The object floats inside the liquid if the buoyant force is equal to its weight
- Buoyant force depends on two factors
1. Volume of the object - The buoyant force is more if the volume of the dipping object is more.
  2. Density of liquid - More the density of liquid, more is the force of buoyancy.

#### Q.4 Attempt the following: (Any One)

5

- (1) Ans. Construction: A dry cell consists of a zinc container whose base acts as the negative electrode. The carbon rod placed at the centre with a brass cap acts as the positive electrode. A paste of Manganese dioxide ( $\text{MnO}_2$ ) is filled outside the rod. The electrolyte contains negatively and positively charged ions and it acts as the battery between the anode and cathode. These are the carriers of electricity. The electrolyte is a wet pulp of Zinc chloride ( $\text{ZnCl}_2$ ) and Ammonium chloride ( $\text{NH}_4\text{Cl}$ ). There is a graphite rod at the centre of the cell.
- Working: Dry cell batteries create electrical energy by converting chemical energy into electricity. ... These materials are placed within the electrolyte paste within the battery. They react with each other through a chemical process in which the electrolyte (carbon or manganese dioxide) reacts with the zinc, creating electricity.



Uses: The most common type of battery used today is the "dry cell" battery. The dry cells are used in our radio sets, wall clocks, torches, wristwatches or calculators. Although they vary widely in composition and form, they all work on the same principle. The shelf life of dry cells is longer.

- (2) Ans. 1. Efficiency of the heart decreases due to decreased blood supply and thereby oxygen and nutrient supply to the heart muscles.
2. Due to this heart has to perform more work that leads to stress on it. This may cause heart attack.
3. In case of heart attack immediate consultation of doctor and treatment is necessary.
4. Symptoms such as severe chest pain, pain in shoulder, neck, arms, uneasiness, cramps in hand and tremors are felt during heart attack.
5. Heart attack is caused by smoking, alcoholism, diabetes, hypertension etc.