



Date : 7th Dec 2023

General Knowledge - Cells

English

**Q:1** Which unicellular organism acquires food by a process in which cells absorb external material by engulfing it with the cell membrane?

1. Yeast
2. Volvox
3. Amoeba
4. Spirogyra

**Q:2** Which is the major microtubule-organising centre (MTOC) in eukaryotic cells involved in various cellular processes, including sensory reception, locomotion, and embryogenesis?

1. Lysosomes
2. Centrosome
3. Plastids
4. Vacuoles

**Q:3** Match Column-A with Column-B.

Column-A (Vitamin)	Alternative name
i. Vitamin A	a. Ascorbic acid
ii. Vitamin B12	b. Retinol
iii. Vitamin C	c. Cobalamin
iv. Vitamin D	d. Ergocalciferol

1. i-b, ii-a, iii-c, iv-d
2. i-a, ii-b, iii-c, iv-d
3. i-c, ii-b, iii-d, iv-a
4. i-b, ii-c, iii-a, iv-d

**Q:4** Which of the following blood group has only B antigen on red cells and A antibody in the plasma?

1. A
2. B
3. AB
4. O

**Q:5** Which organelle is found both in eukaryotic and prokaryotic cells?

1. Ribosome
2. Golgi bodies
3. Mitochondria
4. Lysosome

**Q:6** Enzymes are \_\_\_\_\_ that act as catalysts within the living cells.

1. vitamins
2. proteins
3. carbohydrates
4. calcium

**Q:7** Which of the following vitamins helps hold cells together in the human body?

1. Vitamin E
2. Vitamin K
3. Vitamin A
4. Vitamin C

**Q:8** Which process is used by the unicellular freshwater organisms and most plant cells to take in water?

1. Morphogenesis
2. Osmosis
3. Hybridisation
4. Tropism

**Q:9** In which of the following tissues are the cells living, elongated, and irregularly thickened at the corners?

1. Collenchyma
2. Sclerenchyma
3. Parenchyma
4. Aerenchyma

**Q:10** In animal cells, which membrane-bound cell organelles are generally smaller and help to separate waste products?

1. Plastids
2. Cytosols
3. Golgi apparatus
4. Vacuoles

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### Answer Key

1. (3)	2. (2)	3. (4)	4. (2)	5. (1)
6. (2)	7. (4)	8. (2)	9. (1)	10. (4)

### Answers and Solutions

**Q:1** The correct answer is **Option 3. i.e. Amoeba.**

- Amoeba acquires food by a process called phagocytosis.
- It is process where amoeba absorb external material by engulfing it with the cell membrane with the help of pseudopodia.
- Amoeba is made up of only one cell.

**Q:2** The correct answer is **Option 2. i.e. Centrosome.**

- Centrosomes are organelles that serve as the main microtubule-organizing centers for animal cells.
- The centromere appears as a constricted region of a chromosome and plays a key role in helping the cell divide up its DNA during division (mitosis and meiosis).

**Q:3** The correct answer is **Option 4 i.e. i-b, ii-c, iii-a, iv-d.**

- Vitamin B12 is a very important water-soluble vitamin. It is needed for producing and maintaining new cells (nerve and red blood cells) and for making DNA.
- Vitamin A is a fat-soluble vitamin that is naturally present in many foods.
- Vitamin C improves the absorption of non-heme iron, the type of iron found in plant foods such as leafy greens.
- Vitamin D (also referred to as "calciferol") is a fat-soluble vitamin that is naturally present in a few foods, added to others, and available as a dietary supplement.

**Q:4** The correct answer is **Option 2 i.e. B**

Blood Group	Antigen and Antibody
<b>A</b>	Has only A antigen on red cells (and B antibody in the plasma)
<b>B</b>	<b>Has only B antigen on red cells (and A antibody in the plasma)</b>
<b>AB</b>	Has both A and B antigens on red cells (but neither A nor B antibody in the plasma)
<b>O</b>	Has neither A nor B antigens on red cells (but both A and B antibody are in the plasma)

**Q:5** The correct answer is **option 1 i.e. Ribosome.**

Cell has two broad categories: Prokaryotic and Eukaryotic. All cells share four common components:

- 1) a plasma membrane, an outer covering that separates the cell's interior from its surrounding environment
- 2) cytoplasm, consisting of a jelly-like region within the cell in which other cellular components are found
- 3) DNA, the genetic material of the cell and
- 4) Ribosomes, particles that synthesize proteins.

**Q:6** The correct answer is **Option 2 i.e. proteins**

Enzymes are proteins functioning as catalysts that speed up reactions by lowering the activation energy. A simple definition of an enzyme is that it is a biological catalyst that accelerates a chemical reaction without altering its equilibrium.

**Q:7** The correct answer is **option 4 i.e. Vitamin C.**

- Vitamin C (ascorbic acid) is a nutrient your body needs to form blood vessels, cartilage, muscle and collagen in bones.
- Vitamin C is also vital to your body's healing process.



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- Vitamin C is an antioxidant that helps protect your cells against the effects of free radicals — molecules produced when your body breaks down food or is exposed to tobacco smoke and radiation from the sun, X-rays or other sources.

**Q:8** The correct answer is **option 2** i.e. **Osmosis**.

- Osmosis is the transport of a solvent through a semipermeable membrane that separates two solutions of differing solute concentration.
- During osmosis, the solvent moves from the solution that is lower in solute concentration to the solution that is higher in solute concentration.

**Q:9** The correct answer is **option 1** i.e. **Collenchyma**.

- Collenchyma is a supporting tissue characteristic of the growing organs of many herbaceous and woody plants, and it is also found in stems and leaves of mature herbaceous plants, including those that are only slightly modified by secondary growth.
- Collenchyma tissue is composed of elongated living cells of uneven primary thick walls, which possess hemicellulose, cellulose, and pectic materials.
- It provides support, structure, mechanical strength, and flexibility to the petiole, leaf veins, and stem of young plants, allowing for easy bending without breakage.

**Q:10** The correct answer is **option 4** i.e. **Vacuoles**.

- In animal cells, vacuoles are usually small and help to separate waste products.
- A vacuole is a membrane-bound cell organelle. In animal cells, vacuoles are generally small and help sequester waste products.
- In plant cells, vacuoles help maintain water balance. Sometimes a single vacuole can take up most of the interior space of the plant cell.