

QB365

Important Questions - The Fundamental Unit of Life

9th Standard CBSE

Science

Reg.No. :

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Time : 01:00:00 Hrs

Total Marks : 50

Section-A

- 1) Iodine solution is used to 1
(a) stain onion peel cells (b) stain human cheek cells (c) mount onion peel cells
(d) mount human cheek cells
- 2) The barrier between the cytoplasm and the outer environment in an animal cell is 1
(a) tonoplast (b) nuclear membrane (c) cell wall (d) plasma membrane
- 3) What makes to withstand greater changes in the surrounding medium than an animal cell? 1
(a) Plasma membrane (b) Cell wall (c) Vacuoles (d) Plastids
- 4) Ribosomes are the centre for 1
(a) fat synthesis (b) protein synthesis (c) starch synthesis (d) sugar synthesis
- 5) The complete breakdown of glucose in presence of oxygen in a cell takes place in 1
(a) mitochondria (b) ribosome (c) chloroplast (d) Golgi apparatus
- 6) ATP stands for 1
(a) adenosine triphosphate (b) amino triphosphate (c) amino tri glycerophosphate
(d) adenine tri glycerophosphate
- 7) Which cell organelle is involved in the formation of lysosomes? 1
(a) Mitochondria (b) Golgi apparatus (c) Plastids (d) Endoplasmic reticulum
- 8) Which of the following organelle possesses its own DNA and ribosomes? 1
(a) Mitochondria (b) Lysosomes (c) Golgi apparatus (d) Endoplasmic reticulum
- 9) Stroma is present in 1
(a) mitochondria (b) leucoplast (c) endoplasmic reticulum (d) lysosomes
- 10) Which organelles, like mitochondria, have their own DNA and ribosomes? 1
(a) Golgi apparatus (b) Vacuoles (c) Endoplasmic reticulum (d) Plastids

Section-B

- 11) Describe the role played by the lysosomes in the cell. Why are these termed as suicidal bags? How do they perform their function? 2
- 12) Name two single-celled animals. 2
- 13) Name the largest animal cell. 2
- 14) Name the smallest cell. 2

- 15) Name the longest animal cell. 2
- 16) Name the longest flowering plant cell. 2
- 17) Name the largest plant cell. 2
- 18) Observe the following diagram and answer the questions given below: (i) What is the name of this instrument? (ii) What are the names of the parts marked as 1, 2 and 3? (iii) Which objective you would first view the onion peel cells. 2
- 19) Define osmosis. 2
- 20) What is endocytosis? Give one example. 2

Section-C

- 21) Distinguish between plasma membrane and cell wall. 5
- 22) Differentiate between prokaryotic cell and eukaryotic cell. 5
- 23) What are lysosomes? 5
- 24) Why are lysosomes known as suicide bags? 5

Section-A

- 1) (a) stain onion peel cells 1
- 2) (d) plasma membrane 1
- 3) (b) Cell wall 1
- 4) (b) protein synthesis 1
- 5) (a) mitochondria 1
- 6) (a) adenosine triphosphate 1
- 7) (b) Golgi apparatus 1
- 8) (a) Mitochondria 1
- 9) (c) endoplasmic reticulum 1
- 10) (d) Plastids 1

Section-B

- 11) 2
- (i) • Lysosomes are membrane-bound sacs filled with digestive enzymes. These enzymes are made by rough endoplasmic reticulum.
- Lysosomes are a kind of waste disposal system of the cell.
 - During the disturbance in cellular metabolism, e.g. when a cell gets damaged, lysosomes present in the cell may burst and the enzymes digest the damaged cell. Hence, lysosomes are called as 'suicidal bags' of a cell.
 - Lysosomes break up the foreign materials entering into the cell, such as bacteria or food into small pieces

- 12) Amoeba, Paramecium, Euglena, Dictyostellum (Fungi), Diatoms, Trypanosoma, Trichonympha (cellulose digesting protozoan of insect gut). 2
- 13) An ostrich egg. 2
- 14) Pleuro Pneumonia like organisms (PPLO) 2
- 15) The nerve cell. 2
- 16) The fibre. 2
- 17) Acetabularia. 2
- 18) (i) Compound microscope. (ii) 1. Eyepiece 2. Fine adjustment screw 3. Coarse adjustment screw. (iii) Under 10X objective (low power objective). 2
- 19) The passage of water from a region of higher concentration to a region of lower concentration through a semipermeable membrane is called osmosis. 2
- 20) The process in which a cell due to flexible cell membrane engulfs in food and other material from its external environment is known as endocytosis. Amoeba acquires its food through this process. 2

Section-C

- 21) 5

Plasma Membrane	Cell Wall
1. It is consisted of proteins and lipids. It is living.	It is made up of complex carbohydrate called cellulose. It is dead or non-living.
2. It is found in both plant and animal cells.	It is found in plant cells only.
3. It is semi-permeable.	It is permeable.
4. It is soft and elastic.	It is hard and rigid

- 22) 5

Prokaryotic Cell	Eukaryotic Cell
Cell size is generally small (1-10 μm)	Cell is generally large (5-100 μm)
Nuclear region called nucleoid is not surrounded by a nuclear membrane	Nuclear material is surrounded by a nuclear membrane
Only a single chromosome is present.	More than one chromosomes are present.
Nucleolus is absent	Nucleolus is present
Membrane bound cell organelles are absent.	Cell organelles bounded by membrane are present.
Cell division by fission or budding (no mitosis).	Cell division mitotic or meiotic.

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These are membrane-bound vesicles which bud off from Golgi apparatus. They contain powerful enzymes capable of digesting or breaking down all organic material. The enzymes present in lysosome are synthesised on RER. The membrane that bound lysosomes does not allow the enclosed enzymes to pass freely into the cell cytoplasm. Thus, protects the cell from autolysis (self-dissolution or breakdown). They are absent in RBCs and a few plant cells, for example, yeast, fungi and green algae.

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Lysosome is a membrane bound bag-like cell organelle which contains powerful enzymes. If lysosome bursts, its enzymes eat up (digest) other organelles of its own cell. Therefore, They are known as 'suicide bags'.

