Very Short Answer

1) Do you agree that “A cell is a building unit of an organism”. If yes, explain why?
2) What would happen if the plasma membrane ruptures or breaks down?
3) Why is plasma membrane called selectively permeable membrane? [NCERT]
4) Why does the skin of your finger shrink when you wash clothes for a long
5) time? [NCERT Exemplar]
6) Why is endocytosis found in animals only? [NCERT Exemplar]
7) A person takes concentrated solution of salt, after sometime, he starts vomiting. What is the phenomenon responsible for such situation? Explain. [NCERT Exemplar]
8) Name any cell organelle which is non membranous. [NCERT Exemplar]
9) We eat food composed of all the nutrients like carbohydrates, proteins, fats, vitamins, minerals and water. After digestion, these are absorbed in the form of glucose, aminoacids, fatty acids, glycerol etc. What mechanisms are involved in absorption of digested food and water? [NCERT Exemplar]
10) If you are provided with some vegetables to cook. You generally add salt into the vegetables during cooking process. After adding salt, vegetables release water. What mechanism is responsible for this? [NCERT Exemplar]
11) Bacteria do not have chloroplast but some bacteria are photoautorophic in nature and perform photosynthesis. Which part of bacterial cell performs this? [NCERT Exemplar]
12) Where do the lipids and proteins constituting the cell membrane get synthesised? [NCERT]
13) What would happen to the life of a cell if there was no Golgi apparatus? [NCERT]
14) Give technical term for a medium which has exactly the same concentration as the cell. Why does the size of cell remain the same when placed in such a solution?
15) What would happen if the already swollen raisin is kept in salt solution?
16) What are endo cytosis? Give one example.
17) Why is nucleus called brainof the cell?
18) Which organelle is called factory of ribosomes?
19) What are dictyosomes?
20) Name the energy currency of cell.
21) Which orgqnelle is called power house of the cell? Why? [NCERT]
22) Name the plastid which stores starch, oils and protein granules.
23) What would you observe after five minutes when you drop a deshelled raw egg in pure water? Give reasons
24) Name two cell organelles that contain their own genetic material?
25) Write the name of different plant parts in which chromoplast, chloroplast and leucoplast are present.
26) Why do plant cells possess large sized vacuole?
27) How are chromatin, chromatid and chromosomes related to each other?
28) ‘The functional segments of DNA are genes.’ Give reason.

Short Answer

1) Answer the following question
   (a) What is a cell? Why is it called structural and functional unit of life?
   (b) Why is plasma membrane called selectively permeable membrane?
2) How do substance like CO_2 and water move in and out of the cell? Discuss. [NCERT]
3) What are the consequences of the following conditions? {NCERT Exemplar]
   (a) A cell containing higher water concentration than the surrounding medium
   (b) A cell having low water concentration than the surrounding medium.
   (c) A cell having equal water concentration to its surrounding medium.
4) Two rheo peel were taken one peel was put in a petridish containing cold water and the other was put in a petridish containing hot water after a while both were transferred to hypertonic solutions. If the peels were observed under a microscope, will there be any difference in the observation of both the peels YES or NO.give reason for your answer.
5) Preetha was observing live cells of Onion in the Biology laboratory and she observed cell wall, cytoplasm and nucleus clearly. Suddenly her friend who was doing chemistry experiment spilled a few drops of salt water on the slide. After some time Preetha observed the slide and found some changes. What would have been the change in the live cells of onion peel after adding salt water?
6) Differentiate between diffusion and osmosis. Write any two examples where a living organism uses osmosis to absorb water.
7) Explain your observation in the following with reason involved in the process.
   (a) Salt is applied to raw mango pieces
   (b) Dried raisins are kept in water for a few hours.
8) (a) Explain. the phenomenon of Plasmolysis .
   (b) Explain how do cell walls permit the cells of fungi to withstand very dilute external media without bursting.
9) Answer the following question
   (a) What is DNA? Where is it found?
   (b) Name the function segment of DNA.
10) Answer the following questions
   (a) Expand DNA
   (b) In which part of a cell it is found? State its function
11) Name the scientist who first described golgi apparatus. What are cisterns.
12) What are lysosomes ? why are they called “suicide bags of cell” ?
13) How do vacuoles help in ingestion and egestion in single celled organisms like amoeba ?
14) What do you mean by the following term?
   (i) Protoplasm (ii) Cytoplasm (iii) Nucleoplasm
15) Answer the following question
   (a) What would happen to the life of a cell there was no golgi apparatus?

(b) Which cell organelle will detoxify poisons and drugs in liver of vertebrae?

16) Which organelle is known as the powerhouse of the cell? Why?

17) (a) In which form does the mitochondria release energy ? Write its full form.
(b) The inner membrane of mitochondria is deeply folded. What is the advantage of these folds?

18) Name the energy currency of the cell. Which cell organelle releases this currency?

19) Name the organelle of cell involved in the formation of lysosomes. Write its functions.

20) Name the membrane bound cell organelle filled with powerful digestive enzyme. Write any four function it performs inside the cell.

21) What are chromoplasts and leucoplasts? Give an example of chromoplasts which has green pigment.

22) Grass looks green, papaya appears yellow. Which cell organelle is responsible for this?

23) Name the cell organelle found only in plant cell. Mention its various type, function and location respectively.

24) State any two reasons for plant cells to have large central vacuole.

25) Which kind of plastid is more common in [NCERT Exemplar]
(a) roots of the plant
(b) leaves of the plant
(c) flowers and fruits

26) Which type of cell division is required for growth and repair of body and which type is involved in formation of gametes?

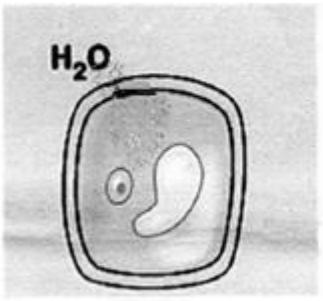
27) How are the following related to each other?
(i) Chromatin fibre and chromosomes
(ii) Chloroplast and chlorophyll
(iii) Genes and DNA

Long Answer

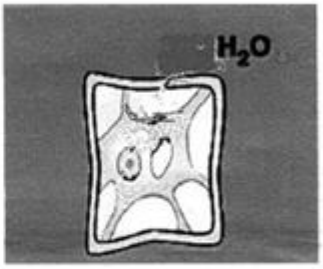
1) What happens to the dry raisins, when we put them in plain water for some time? State the reason for whatever is observed. What would happen if soaked raisins are now placed in concentrated salt solution?

2) Carry out the following osmosis experiment: [NCERT]
Take four peeled potato halves and scoops each one out to make potato cups. One of these potato cups should be made from a boiled potato. Put each potato cup in a trough containing water. Now,
(a) Keep cup A empty
(b) Put one teaspoon sugar in cup B
(c) Put one teaspoon salt in cup C
(d) Put one teaspoon sugar in the boiled potato cup D.
Keep these for two hours. Then observe the four potato cups and answer the following:
i. Explain why water gathers in the hollowed portion of B and C.
ii. Why is potato A necessary for this experiment?
iii. Explain why water does not gather in the hollowed out portions of A and D.

3) Classify the following as osmosis or diffusion
   (a) Aquatic animals using oxygen dissolved in water during respiration
   (b) Swelling up of raisins on keeping in water
   (c) Spreading of virus on sneezing.
4) Answer the following question
   (a) Why does nuclear membrane have pores?
   (b) why do chromosomes contain DNA in nucleus?
   (c) give two role of nucleus in the cell.
5) Answer the following questions
   (a) Categorise plastids based on their colour and function.
   (b) Mention the strange similarity between plastids and mitochondria with refence to synthesisof their own material? What do they synthesise?
6) Answer the following questions
   (a) Explain why chromosome is one of the chief component of a nucleus
   (b) Which two organelle of a cell contain their own genetic material? What will happen if the organisation of a cell is destroyed due to some physical or chemical influence.
7) Answer the following question
   (a) Give the chemical composition and function of plasma membrane and cell wall. Differentiate between the two.
   (b) What is meant by membrane biogenesis? Which cell organelle is concerned with membrane biogenesis?
8) Answer the following question
   (a) What is lacking in a virus which makes it dependent on a living cell to multiply?
   (b) Expand RER and SER. Differentiate between them for their structure and function.
9) Answer the following question
   (a) Why organisms like bacteria are called prokaryotes?
   (b) In what way mitochondria and chloroplast are different from other organelles present in a cell?
   (c) Mention any two function of vacuoles
10) Answer the following questions
   (a) Distinguis between chloroplast and leucoplast with respect to their pigments and function.
   (b) How would (i) A plant cell (ii) An animal cell behave when placed in a hypotonic solutionof sodium chloride? Explain giving reasons.
11) Answer the following questions
   (a) List any three diffrences between prokaryotic cell and eukaryotic cell
   (b) Write down the composition of a chromosome. Name the part of a cell where it is formed.
12) Observe the figure and answer the following:
   (a) What has happened to cell A and B? Explain
   (b) Idenitify the type of solution into which cell A and B are placed.
   (c) Name and explain the process that has taken place in cells A and B.



A



B

13) What is osmosis? What are its types? What happens to a cell when it is placed in hypotonic, isotonic and hypertonic solutions respectively? State two points of difference between osmosis and diffusion.

14) Answer the following question
   (a) How does smooth endoplasmic reticulum differ from rough endoplasmic reticulum? (3points)
   (b) What do you understand by "membrane bio genesis"?

15) Answer the following question
   (a) Why mitochondia are known as the powerhouse of the cell . explain?
   (b) What are chromoplast and leucoplast? Give an example of chromoplast which has green pigmnet
   (c) Give any three point of difference between plant and animal cell
   (d) Why is cell called structiral and functional unit of cell

16) Answer the following question
   (a) What is endoplasmic reticulum?
   (b) Describe its structure.
   (c) Name its two types
   (d) What role does it play in the liver cells of vertebrates?
   (e) What is membrane biogenesis?

17) In brief state what happens when
   (a) dry apricots are left for sometime in pure water and later transferred to sugar solution?
   (b) a Red Blood Cell is kept in concentrated saline solution
   (c) the Plasma-membrane of a cell breaks down?
   (d) rheo leaves are boiled in water first and then a drop of sugar syrup is put on it?
   (e) golgi apparatus is removed from the cell? [NCERT Exemplar]

18) Given below statement have italic words which may be incorrect. Rewrite these words and state one function for each of them
   (a) The fundamental organisational unit of life is a *tissue*
   (b) The *cell wall* is an active part of the cell and selectively permeable.
   (c) The *plasma membrane* enables the cells of plants and fungi to exist in hypotonic media without brusting.
   (d) The *Golgi body* functions both as a passageway for intracellular transport and as a manufacturing surface.

(e) *Leucoplasts* contains carotenoids and their primary function is storage.

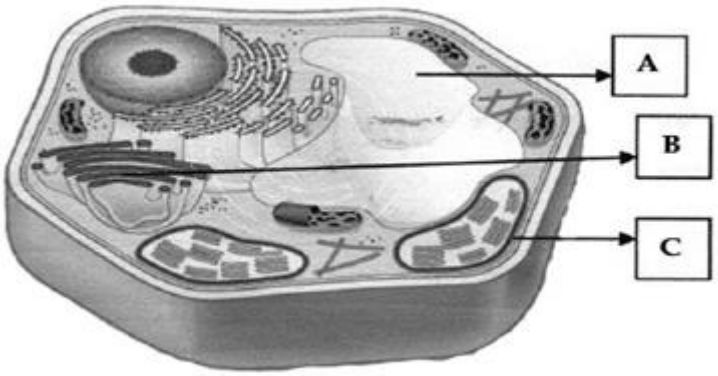
19) Answer the following questions

(a) In the diagram given below identify the part marked B and C

(b) What are the substance that organell A stores?

(c) Mention one function of organelle B and C

(d) What are cisterns?



28) Draw a plant cell and label the parts which [NCERT Examplar]

(a) determines the function and development of the cell

(b) packages materials coming from the endoplasmic reticulum

(c) provides resistance to microbes to withstand hypotonic external media without bursting

(d) is site for many biochemical reactions necessary to sustain life.

(e) is a fluid contained inside the nucleus

29) Draw a well labelled diagram of an animal cell.

(a) The organelle that contain powerful digestive enzymes

(b) The organelle that has its own DNA

(c) The organelle that forms cytoplasmic framework

(d) The organelle that helps in expelling excess water in amoeba

30) Draw a plant cell and label the following parts:

(a) Mitochondrion

(b) Cell wall

(c) Lysosome

(d) Golgi apparatus