



Shree H. N. Shukla College of Science

(Affiliated to Saurashtra University)

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B.Sc. (Sem- II) (CBCS)

**PAPER: [201-Cell biology & Plant Biochemistry]
[Sem- 2 prelims – 2018]**

Date: 17/03/2018

Total marks- 70

Q-1(a) Answer the following: (4)

1. Define cell.
2. Give two examples of prokaryotic organisms.
3. Give two examples of autonomous organelles.
4. Which carbohydrate makes up the cell wall of the plant?

Q-1(b) Answer any one of the following questions in brief: (2)

1. Write a function of actin and myosin protein.
2. What is the function of peroxisomes and glyoxysomes

Q-1(c) Answer any one of the following questions in detail: (3)

1. What are the functions of plasma membrane?
2. Write the differences between virus , viroids and prions.

Q-1(d) Answer any one of the following in detail: (5)

1. Write a detail note on plant cell wall and its composition.
2. Write and explain the structure and function of chloroplast.

Q-2(a) Answer the following questions: (4)

1. Where do light reactions of photosynthesis take place?
2. Define cell organelles and give some examples.
3. Which different types of enzymes are found in peroxisomes?
4. Who proposed the cell theory?

Q-2(b) Answer any one of the following questions in brief: (2)

1. Enlist the functions of smooth ER.
2. Define endocytosis and exocytosis.

Q-2(c) Answer any one of the following questions in detail: (3)

1. Write the functions of cytoskeleton.
2. Write a short note on glyoxysomes.

Q-2(d) Answer any one of the following questions in det (5)

1. Write a detailed note on function of cytoskeleton in cell.
2. Write a detailed note on nucleus.



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Q-3(a) Answer the following questions: (4)

1. What is an integral membrane protein?
2. What is a cell membrane made up of?
3. Who proposed the fluid mosaic model of the plasma membrane?
4. Which different classes of lipids are found in plasma membrane?

Q-3(b) Answer any one of the following questions in brief: (2)

1. What are the interactions that contribute to the formation of lipid bilayer?
2. Give differences between active transport and passive transport?

Q-3(c) Answer any one of the following questions in detail: (3)

1. Give experimental evidences of fluid mosaic model.
2. Explain glucose transport in epithelial cell of intestine.

Q-3(d) Write any one of the following questions in detail: (5)

1. Explain fluid mosaic model of plasma membrane.
2. Explain the structure and function of $\text{Na}^+/\text{K}^+ - \text{ATPase}$ (coupled system).

Q-4(a) Answer the following questions: (4)

1. Define photosynthesis.
2. Define photosynthetic reaction center.
3. What is the function of rubisCO ?
4. Give some examples of CAM plants?

Q-4(b) Answer any one of the following questions in brief: (2)

1. Draw and explain kranz anatomy.
2. Write some functions of ethylene.

Q-4(c) Answer any one of the following questions in detail: (3)

1. Write a note on cyclic photosynthetic reaction.
2. Write a note on calvin cycle.

Q-4(d) Answer any one of the following questions in detail: (5)

1. Write a detailed note on Hatch and Slack cycle.
2. Write a detailed note on light reactions.

Q-5(a) Answer the following questions: (4)

1. What is meant by homologous chromosomes?
2. What is meant by cell cycle?



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3. Define chiasmata.
4. What is meant by synapsis?

Q-5(b) Answer any one of the following questions in brief: (2)

1. How does anaphase I differ from anaphase II of meiosis?
2. Define and explain the phenomenon of crossing over.

Q-5(c) Answer any one of the following questions in detail: (3)

1. Describe in brief about cell cycle.
2. Write the significance of meiosis.

Q-5(d) Answer any one of the following questions in detail: (5)

1. Describe in detail about steps of mitosis.
2. Differentiate between mitosis and meiosis.

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