

April - 2013

Seat
No.

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BOTANY PAPER - II (NEW) - BOT-112
Cell Biology

P. Pages : 3

Time : Two Hours

Max. Marks : 40

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Draw neat labeled diagram wherever necessary.
5. All questions are compulsory.

1. Solve any eight.

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- a) Which cell organelle is responsible for making proteins ?
 - i) Lysosomes.
 - ii) Ribosomes
 - iii) Mitochondria
 - iv) Cell wall
- b) What is the name of the jelly-like substance that is inside the cell ?
 - i) Cytoplasm.
 - ii) Nucleus.
 - iii) Cytokinesis.
 - iv) Plasma membrane.
- c) Condensation of chromosome is carried in
 - i) Prophase.
 - ii) Metaphase
 - iii) Anaphase.
 - iv) Telophase
- d) The individual halves of chromosome, called chromatids are held together by which object ?
 - i) Centriole.
 - ii) Centromere
 - iii) Chromatin
 - iv) arms
- e) The correct order of the stages of mitosis is
 - i) Anaphase, metaphase, telophase, prophase
 - ii) Prophase, anaphase, metaphase, telophase
 - iii) Prophase, metaphase, anaphase, telophase
 - iv) Prophase, anaphase, telophase, metaphase.
- f) DNA replication occurs during
 - i) G₂ phase
 - ii) G₁ phase
 - iii) M phase
 - iv) S phase

- g) During the cell cycle, the cell spends the most time in
- i) Prophase
 - ii) Anaphase
 - iii) Telophase
 - iv) Interphase
- h) If a cell that has 8 chromosomes goes through mitosis, how many chromosomes will each new cell have ?
- i) 4
 - ii) 8
 - iii) 16
 - iv) 32
- i) Identify the wrong statement about meiosis.
- i) Chromosome number remains constant.
 - ii) Four haploid cells are formed.
 - iii) At the end of meiosis the number of chromosome are reduced to half.
 - iv) Two cycle of DNA replication occurs.
- j) Cells which are not dividing are likely to be at
- i) G_1
 - ii) G_2
 - iii) G_0
 - iv) S phase

2. Solve any four.

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- Why are lysosomes known as 'the cleaners' of cell waste ?
- Define cell.
- What is cell theory.
- What is chemical composition of the cell wall ?
- Describe anaphase of mitosis.
- What is the difference between plasma membrane and cell wall ?

3. Solve any two.

8

- Enlist the differences between Prokaryotic and eukaryotic cell.
- Where in the cell can ribosomes be found ? What is the main biological function of ribosomes ?
- What is cell cycle ? Explain the stages of cell cycle.

4. a) Solve any two.

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i) Describe the structure of plasma membrane.

ii) Explain the structure of endoplasmic reticulum ?

iii) Draw cell cycle and describe G2 phase.

b) What are the main structures within the cell nucleus ?

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5. What is cell division ? Discuss the biological significance of each type of cell division.

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OR

Describe with the help of well labelled diagram the structure of chloroplast ?
What are its main functions ?
