Name: _____	**Subject:** Biology	**Class:** 12th	**Time:** 80 minutes	Total Marks:	**40**
Chapter No.21	**MJDexpert.com**			Obtained marks	

Note: Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

Q#1 Encircle the Correct Option (10 x 1 = 10)

1. During which phase does the number of chromosomes double?
A) G1 phase B) G2 phase C) S phase D) G0 phase

2. Which phase is characterized by extensive metabolic activity?
A) G1 phase B) G2 phase C) S phase D) G0 phase

3. The syndrome characterized by trisomy of chromosome 21 is known as?
A) Turner's syndrome B) Down syndrome C) Klinefelter syndrome D) None

4. In plants, meiosis is primarily involved in the formation of?
A) Gametes B) Spores C) Zygotes D) Embryos

5. How many cells does each diploid cell produce after meiosis?
A) 2 cells B) 3 cells C) 4 cells D) 8 cells

6. During which phase is the mitotic apparatus organized?
A) Prophase B) Metaphase C) Anaphase D) Telophase

7. What type of cells are primarily affected by cancer-causing mutations?
A) Sex cells B) Malignant cells C) Reproductive cells D) Somatic cells

8. What term describes the division of the nucleus during cell division?
A) Cytokinesis B) Karyokinesis C) Karyotype D) Plasmolysis

9. What is the term for the unequal separation of chromosomes?
A) Disjunction B) Junction C) Non-disjunction D) Metastasis

10. Which of the following is not associated with Turner's syndrome?
A) Short stature B) Webbed neck C) Broad face D) Absence of ovaries

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Q #2 Short Questions (2 x 10 = 20)

1. What are the key changes that occur during the S phase of the cell cycle?
2. How do cancerous cells differ from normal cells?
3. How can one identify a person with Turner's syndrome?
4. What are the functions of the mitotic apparatus during cell division?
5. Is interphase considered a resting phase? Explain why or why not.
6. What is metastasis in the context of cancer?
7. What is crossing over, and why is it important?
8. Write a brief note on Down syndrome (mongolism).
9. What is non-disjunction and its implications?
10. Define chromatin and its role in the cell.

Q #3 Long Questions (2 x 5 = 10)

1. Describe the process of meiosis and explain its biological significance.
2. Explain mitosis and discuss its importance in cellular function.