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**B.M.S COLLEGE FOR WOMEN**  
**Bengaluru -560 004**

**I SEMESTER END EXAMINATION – JAN/FEB – 2024**

**B.Sc - ZOOLOGY: CYTOLOGY, GENETICS AND INFECTIOUS DISEASES**  
**(NEP Scheme 2021-22 onwards F + R)**

**Course Code: ZOO1DSC01**

**QP Code: 1017**

**Time: 2 ½ Hours**

**Max Marks: 60**

*Instructions: 1. Draw neat labelled diagrams wherever necessary.*  
*2. Answer should be completely in English.*

**PART- A**

**I. Answer the following in one word or one sentence**

**(5x1=5)**

1. Name the mechanism by which proteins are transported to their appropriate destinations.
2. The number of nuclear pores correlates to ..... activity of the cell.
3. Write the dihybrid test cross ratio.
4. What is a phenocopy?
5. Give an example of X-linked dominant trait.

**PART- B**

**II. Answer any five of the following:**

**(5x3=15)**

1. Differentiate between exocytosis and endocytosis.
2. Match the following organelles with their functions:

Organelles	Functions
1. Peroxisomes	a. Provides structural support to the cells
2. Ribosomes	b. Sequester diverse oxidative reactions
3. Intermediary filaments	c. Protein synthesis
	d. Sorting and packing biomolecules

3. Write a note on the functions of cell junctions.
4. What activates apoptosis? How are apoptotic cells eliminated?

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5. Write a note on dosage compensation.
6. A man with blood group A (heterozygous) marries a woman with blood group B (heterozygous), what type of blood groups are expected in their children.
7. Draw a neat labeled diagram of SARS-COV-2.

### PART- C

#### III. Answer any four of the following (4x5=20)

1. With a neat labeled diagram, describe the ultrastructure of mitochondrion.
2. Describe the chemical structure of DNA.
3. Comment on the role of cyclins and cdks in cell cycle regulation.
4. With reference to chromosomal sex determination, write notes on:
  - a) XX – XY type
  - b) ZZ – ZO type
5. The inheritance of Colour blindness in man follows a crisscross pattern. Justify.
6. Write a short note on Turner's syndrome.

### PART- D

#### III. Answer any two of the following (2x10=20)

1. Explain the chemical composition and fluid mosaic model of the plasma membrane.
2. Give an account on:
  - a. Differentiate between A, B, and Z types of DNA
  - b. Pachytene and Diplotene stage
3. Define polygenic inheritance. Explain it with reference to inheritance of skin colour in man.
4. Explain the life cycle of Wuchereria.

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