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| **ST. JOSEPH’S UNIVERSITY, BANGALORE-27** |  |
| **M.Sc. ZOOLOGY - I SEMESTER** |  |
| **END SEMESTER EXAMINATION: NOVEMBER 2023****(Examination conducted in November /December 2023)** |  |
| **ZO 7222- ADVANCED CELL BIOLOGY AND GENETICS** |  |
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| **Time - 2 hrs** |  |  **Max Marks - 50** |  |  |
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| **This paper contains 2 printed pages and four parts** |  |

 **Note: Draw neat labelled diagrams wherever necessary**

 **PART A**

**Answer the following: 5 X 1 = 5**

1. Lysosomes are membrane bound vesicles that arise from --------------------.
2. \_\_\_\_\_\_\_\_\_\_\_\_ is the largest family of cell surface receptors.
3. The \_\_\_\_\_\_\_\_\_\_\_\_\_ phase implies the exit of cell from cell cycle.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_ is caused by a deletion of the end of the short (p) arm of chromosome 5.
5. \_\_\_\_\_\_\_\_ is a cross between the F1 generation hybrid and a double recessive

**PART B**

**Answer the following: 5 X 2 = 10**

1. Differentiate between active and passive transport.
2. How is apoptosis different form necrosis?
3. Explain the four different type of cell junction.
4. What is co-dominance, explain with example.
5. Draw and label the structure of chromosome.

 **PART C**

**Answer any THREE of the following: 3 X 5 = 15**

1. Why are mitochondria called as semi-autonomous body? Explain the structure of mitochondria with neat labelled diagram.
2. In dogs the barking trait is dominant over the silent trait. Using Punnet Square work out the possible puppies born to the two barking parents with genotype (Rr). Show the phenotypic and genotypic ratio.
3. Explain the mechanism of protein targeting to endoplasmic reticulum.
4. Explain any four inborn errors of metabolism.
5. Write a note on the patterns of inheritance.

**PART D**

**Answer any TWO of the following: 2 X 10 = 20**

1. Explain Singer and Nicolson model of plasma membrane, its function with a neat labelled diagram.
2. Explain Lyon’s Hypothesis.
3. Explain numerical and structural aberration of chromosomes.

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