

**Post Graduate Teaching Department of Zoology**  
**An Autonomous Department of**  
**Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur**  
**Programme: M. Sc. Zoology Semester -I (CBCS)**  
**Theory Examination Winter-2022**  
**Code and Name of Paper: PGZO1T3 Paper-1T3-Cell Biology and Genetics**

**Time: 3hrs**

**Maximum Marks: 60**

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**Note**

- 1. All the questions are compulsory.**
- 2. All questions carry equal marks.**
- 3. Draw well labelled diagrams and charts wherever necessary.**

**Q.1** Give detail account on phases and regulation of cell cycle. **12**  
OR

**Write notes on-**

- (a) Active transport.
- (b) Microfilament.

**Q.2** Describe components and organization of extracellular matrix. **12**  
OR

**Write notes on-**

- (a) Cell-Cell interaction.
- (b) G-protein coupled receptors.

**Q.3** Explain Mendelian dihybrid inheritance. **12**  
OR

**Write notes on-**

- (a) Polygenic traits.
- (b) Sex linkage.

**Q.4** Explain structural alteration of chromosomes. **12**  
OR

**Write notes on-**

- (a) Maternal inheritance.
- (b) Conjugation.

**Q. 5 Write in brief on the followings: -** **12**

- (a). Peroxisomes.
- (b). cAMP.
- (c). Loss of function mutation.
- (d). Huntington's disease.