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**NEPNY—04—2023**

**FACULTY OF SCIENCE**

**M.Sc. (NEP) (First Year) (First Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**BIOTECHNOLOGY**

**Paper-SBTTC-401**

**(Cell and Developmental Biology)**

**(Wednesday, 20-12-2023)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—3 Hours*

*Maximum Marks—80*

*N.L. :— (i) Question No. 1 is compulsory.*

*(ii) Of the remaining, attempt any three questions.*

*(iii) Draw neat and labelled diagram wherever necessary.*

1. Write brief notes on the following :

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(a) Osmosis

(b) Gap junctions

(c) Cell cycle and its regulation

(d) Fertilization.

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2. (a) Describe in detail structure and function of Nucleus. 10
- (b) Explain in brief lysosomes. 10
3. (a) Write a note on cell adhesion and roles of different adhesion molecules. 10
- (b) Explain in detail G-Protein coupled receptors. 10
4. (a) Describe in detail different phases of mitosis. 10
- (b) Explain in brief meiosis. 10
5. (a) What is spermatogenesis ? Describe it in detail. 10
- (b) Write a note on stem cells. 10
6. Write brief notes on the following : 20
  - (a) Cell theory
  - (b) Integrins
  - (c) Oncogenes
  - (d) Blastulation.

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