

Post Graduate Teaching Department of Zoology
An Autonomous Department of
Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
M. Sc. Zoology Semester -IV (CBCS)
Theory Examination Summer-2023
Name of the Paper: Paper 4T4: Radiation and Chronobiology

Time: 3hrs

Maximum Marks: 60

Note: -

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

Q.1 Describe in detail the radiation sensitizers and protectors. **12**
OR

Write notes on: -

- (a) Scope and significance of radiation biology.
- (b) General classification of radiation.

Q.2 Explain in detail radiation effects in the developing embryo and fetus. **12**
OR

Write notes on: -

- (a) Radiation induced cancer.
- (b) Health consequences after total body irradiation from radiation accidents.

Q.3 Give detail account on organization of circadian system in multicellular animals. **12**
OR

Write notes on: -

- (a) Circadian pacemaker system in invertebrates.
- (b) Circadian pacemaker system with particular reference to rodents.

Q.4 Describe in detail depression and sleep disorders in mammals. **12**
OR

Write notes on: -

- (a) Centers of biological clock.
- (b) Clock function and dysfunction.

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

- (a) Radiobiological effect on cell.
- (b) Long term radiation risks.
- (c) Peripheral clock system.
- (d) Chronomedicine.