

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Summer 2022-23 Examination

Semester: 4**Date: 22-03-2023****Subject Code: 11224281****Time: 2:00pm to 4:30pm****Subject Name: Molecular Basis of Diseases****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q1. A) Essay type [08]**
Explain the molecular basis of cancer. What are roles of oncogenes and tumor suppressor genes in progression of cancer.
- Q1. B) Answer the following questions (Any two)**
- i) Write a note on cell signaling process. [04]
 - ii) Short note on DNA synthesis process. [04]
 - iii) Give a description of gene structure. [04]
- Q2. A) Answer the following questions.**
- i) Discuss about significance of molecules as biomarker in normal and disease situations [04]
 - ii) Write a note on post-transcriptional modifications. [04]
- Q2. B) Answer the following questions. (Any two)**
- i) Give an account on apoptosis. [03]
 - ii) Write a note on Regulation of cell cycle. [03]
 - iii) List out three oncogenes. [03]
- Q3. A) Brief note (4 × 2) (Each of 4 marks)**
Explain DNA damage and DNA repair systems [08]
- Q3. B) Answer the following questions. (Any two)**
- i) Write short notes on the following [04]
 - a) Define Autoimmunity with example.
 - b) enlist two examples each of autosomal and sex-linked disease.
 - ii) Explain telomerase shortening and its significance in aging. [04]
 - iii) Write a note on genetic pedigree and its inheritance pattern [04]
- Q4. A) Answer the following questions.**
- i) Explain genetic markers and their significance in detail. [04]
 - ii) Explain prognosis and identification of drug targets leading to development of diagnostics and therapeutics. [04]
- Q4. B) Answer the following questions. (Any two)**
- i) Short note/ Multiple choice questions. (Each of 01 marks) [03]
 - a) Give example of cell line used to study human disease
 - b) Give example of animal models to study human diseases.
 - c) Give example of neurodegenerative disorder.
 - ii) Write a note on Inborn errors of metabolism. [03]
 - iii) Explain structure and function of Telomerase. [03]