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NB—10—2023

FACULTY OF SCIENCE

B.Sc. (Third Year) (Fifth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

BIOTECHNOLOGY

(r-DNA Technology)

(Saturday, 02-12-2023)

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

Time—3 Hours

Maximum Marks—75

N.L. :— (i) Attempt *all* questions.

(ii) Each question carries equal marks.

1. What are reporter genes ? Explain types of reporter genes and add a note on reporter assay in gene cloning. 15

Or

(a) Explain various vectorless gene transfer methods. 8

(b) Explain pBR322 as a vector. 7

2. Describe in detail principle and mechanism of PCR. Add a note on its types and applications. 15

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Or

- (a) Describe in detail DNA microarray. 8
- (b) Explain in detail southern blotting 7
3. Describe in detail construction of genomic DNA library and cDNA library. 15
- Or
- (a) Explain in detail Sanger's method of DNA sequencing. 8
- (b) Describe and explain Autoradiography of DNA. 7
4. What is gene therapy ? Describe its types and approaches of gene therapy. 15
- Or
- (a) Describe production technology of recombinant human growth hormone. 8
- (b) Describe in detail golden rice. 7
5. Write short notes on any *three* of the following : 15
- (a) BACS
- (b) Automated DNA Sequencing
- (c) Molecular Probes.
- (d) Recombinant insulin
- (e) Bt-cotton

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