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Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019 Genetic Engineering and Applications

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Give an account on salient features of vectors. (08 Marks)
b. Describe in detail construction of BAC and write its application in generic engineering. (08 Marks)

OR

- 2 a. Explain in detail classification of restriction enzymes with examples. (08 Marks)
b. Write a note on : (08 Marks)
(i) Ligases (ii) Polynucleotide Kinase

Module-2

- 3 a. Explain in detail techniques and procedures of southern blotting technique and its application. (08 Marks)
b. What is PCR? Write its principle, procedure and application. (08 Marks)

OR

- 4 a. Explain important steps and methods involved in isolation of plasmid. (08 Marks)
b. Describe the procedure for construction of eDNA library. (08 Marks)

Module-3

- 5 a. Write a note on : (08 Marks)
(i) Liposome mediated gene transfer
(ii) Microinjection (08 Marks)
b. Describe in detail Agrobacterium mediated gene transfer in plants. (08 Marks)

OR

- 6 a. Write a note on : (08 Marks)
(i) Electroporation (ii) Gene gun method. (08 Marks)
b. Describe in detail chloroplast transformation and its application. (08 Marks)

Module-4

- 7 a. What are transgenic plants? Give detailed account on use of transgenic plants as bioreactors. (08 Marks)
b. Write various methods involved in production of insecticide resistant transgenic plants. (08 Marks)

OR

- 8 a. Give an account on biopharming animals as bioreactors for recombinant proteins. (08 Marks)
b. Describe in detail Marker associated selection and genetic improvement of live stock. (08 Marks)

Module-5

- 9 a. Write a note on :
- (i) Engineered microbes for the production of growth hormones. (08 Marks)
 - (ii) Engineered microbes for the production of enzymes. (08 Marks)
- b. Describe the process involved in the production of monoclonal antibodies. (08 Marks)

OR

- 10 a. Discuss the role of gene therapy in the treatment of SCID. (08 Marks)
- b. Discuss in detail challenges and future of gene therapy. (08 Marks)

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