

CBCS Scheme

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15BT52

Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018

Genetic Engineering and Application

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Define vectors outline the salient features of vectors used in genetic engineering with examples. (08 Marks)
b. Write short notes on: i) Casmids ii) YAC's. (08 Marks)

OR

- 2 a. What are Restriction Endonucleases? Explain in detail the different classes with mode of action and examples. (10 Marks)
b. Write critical notes on : i) Ligases ii) Phosphatases. (06 Marks)

Module-2

- 3 a. Sketch the principle and procedure of PCR with applications. (08 Marks)
b. Describe the general technique of southern Blot Hybridization and add a note on its applications. (08 Marks)

OR

- 4 a. Ennumerate the different steps in the construction of a CDNA library. (08 Marks)
b. Describe the steps involved in the isolation of Genomics DNA and add a note on the purification of plasmid DNA. (08 Marks)

Module-3

- 5 a. Explain in detail the Gene Gun method as an effective physical method for gene/DNA transfer. (08 Marks)
b. Explain in detail the liposome mediated gene transfer with applications. (08 Marks)

OR

- 6 a. Outline the salient features of plasmids of Agrobacterium tumefaciens. (06 Marks)
b. Write explanatory notes on the following :
i) Disease control of Agrobacterium (crown gall) ii) Microinjection. (10 Marks)

Module-4

- 7 a. Define molecular farming. Outline the transgenic crops for therapeutic applications. (08 Marks)
b. Explain in detail the various gene mapping strategies in plants. (08 Marks)

OR

- 8 a. Discuss in detail the market assisted selected for plant breeding and livestock improvement. (08 Marks)
b. Describe in detail applications of animals as bioreactors for the production of recombinant protein. (08 Marks)

Module-5

- 9 a. How microbes can be exploited for synthesis of recombinant hormones. Explain with a suitable example. (08 Marks)
b. Microbes can be used to clear biohazard in an oil spill. Justify your answer. (08 Marks)

OR

- 10 a. Outline the different strategies used in cancer gene therapy. (08 Marks)
b. Explain in detail the effectiveness of gene therapy in the treatment of SCID. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.