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UG/5th Sem/Biot(H)/T/19

2019

B.Sc. (Honours)

5th Semester Examination

BIOTECHNOLOGY

Paper - C12T

(Recombinant DNA Technology)

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

1. Answer any five questions : 5×2=10
- (a) What is disarmed strain of *Agrobacterium tumefaciens* ?
- (b) Why heat-stable DNA polymerase is important in PCR method ? Name one. 1+1
- (c) What is site-directed mutagenesis ? 2

[Turn Over]

(2)

- (d) Why do bacteria have restriction endonucleases ?
2
- (e) What is the role of AmpR and BamHI in pBR322 ?
1+1
- (f) What is reporter gene ? Give example. 1+1
- (g) Describe chimeric proteins. 2
- (h) Mention the applications of RAPD. 2
2. Answer any *four* questions : 4×5=20
- (a) Explain the steps of Southern blotting with labelled diagrams. How does a probe function ?
3+2
- (b) What is reverse transcription ? Describe schematically the construction of cDNA library.
1+4
- (c) Write a brief note on restriction enzymes. What are cohesive termini ?
3+2
- (d) Explain the steps involved in a PCR reaction with neat diagram. What is 'cycle' in PCR ?
3+2

(3)

(e) Discuss the various methods of recombinant screening. Mention two criteria for plasmids for acting as cloning vector. 4+1

(f) Outline the production of insulin through RDT. What is transgenesis ? 3+2

3. Answer any *one* question : 1×10=10

(a) Discuss in brief the production of pesticide-resistant plant varieties. What is DNA fingerprinting ? 7+3

(b) Describe the application of RDT in the production of recombinant vaccines. Write down the strategies for gene transfer to plant cells. 7+3
