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## 2020/TDC(CBCS)/ODD/SEM/ BTCHCC-502T/306

# TDC (CBCS) Odd Semester Exam., 2020 held in March, 2021

### BIOTECHNOLOGY

(5th Semester)

Course No.: BTCHCC-502T

(Recombinant DNA Technology)

Full Marks: 50
Pass Marks: 20

Time: 3 hours

The figures in the margin indicate full marks for the questions

## SECTION—A

- 1. Answer any ten of the following questions:  $2 \times 10 = 20$ 
  - (a) What are plasmids?
  - (b) What are cosmids?
  - (c) What is BAC?
  - (d) What is YAC?

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(Turn Over)



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- (e) What is restriction mapping?
- (f) What is reverse transcription?
- (g) What is cDNA library?
- (h) Define restriction modification system.
- (i) What is genome mapping?
- (j) What is DNA finger printing?
- (k) What are ES cells?
- (1) What is gene targeting?
- (m) What is primer extension?
- (n) What is a PCR-based method?
- (o) What is random mutagenesis?
- (p) What is gene shifting?
- (q) What is T-DNA?
- (r) What is T, plasmid?
- (s) What is crown gall disease?
- (t) What is hairy root disease?

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(3)

#### SECTION-B

### Answer any five questions

- 2. What are restriction enzymes? What are the major types of restriction enzymes? Describe briefly, the role of restriction endonucleases in recombinant DNA technology.

  1+2+3=6
- What is PCR? What is Taq polymerase? State briefly the different steps of PCR. Mention two important uses of PCR technology. 1+1+3+1=6
- **4.** Write a note on northern hybridization technique. Mention the applications of the said technique. 4+2=6
- Write a note on the methods of screening of recombinants (any two) and state their limitations.
- **6.** Write a note on the application of genetic engineering.
- 7. What are vaccines? Write a note on the role of genetic engineering in production of vaccine.

2+4=6

8. What is site directed mutagenesis? Mention two uses of this technique in molecular biological research. Describe briefly PCRbased methods for site directed mutagenesis.

1+2+3=6

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| 9.   | Write a note on the production of chimeric proteins.   | 6   |
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| 10.  | Write a note on direct DNA transfer in plants.   | 6   |
| 11.  | Write a note on gene targeting in plants.  | 6   |
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