

U.G. 5th Semester Examination - 2021
Molecular Biology & Biotechnology
[HONOURS]
Course Code : MBBT(H)/CCR-12 (502P)
[PRACTICAL]

(Recombinant and DNA Technology)

Full Marks : 20

Time : 2 Hours

The figures in the right-hand margin indicate marks.

*Examinees are advised to answers in their own words
as far as practicable.*

1. Assuming that you have to perform any **one** of the following experiments; how would you perform it.

10×1=10

- a) Isolate genomic DNA from the supplied plant sample or from supplied bacterial sample and run it on a 0.8% agarose gel. Write down the principle, requirement and observation of the same and interpret your result. 3+2+4+1

OR

- b) Isolate plasmid DNA from the supplied bacterial sample by alkaline lysis method and run it on a

1% agarose gel. Write down the principle, requirement and observation of the same and interpret your result. 3+2+4+1

OR

- c) Perform restriction digestion of the supplied plasmid DNA using restriction endonuclease EcoRI (or any other available RE) and run it on a 1% agarose gel. Write down the principle, requirement and observation of the same and interpret your result. 3+2+4+1

OR

- d) Prepare competent cell of *E.coli* DH5 α (or any other supplied bacterial cell) and subsequently transform the supplied Plasmid (with antibiotic resistance) into the host. Write down the principle, requirement and observation of the same and interpret your result. 3+2+4+1

OR

- e) You have to amplify a gene from *E.coli* genomic DNA (template DNA). The forward and reverse primers are of 21 nucleotides each and have Tm 59°C and 54°C, respectively. The size of the gene of interest is 1197 kb. Write down the principle, requirement, procedure and design a

[Turn over]

PCR program for the aforementioned
experiment. Interpret and pictorially represent
your result. 2+2+3+3

2. Laboratory Notebook / Practical based Home
Assignment. 5
3. Viva-voce. 5
