2021

MICROBIOLOGY — HONOURS — PRACTICAL

Eighth Paper

Full Marks : 100

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

1. Write the principle of "Double Immunodiffusion Ouchterlony Method". 12

2. (a) Write the procedure of isolation of plasmid DNA from bacterial cells. 10

(b) Draw a properly labelled diagram of DNA agarose gel containing three lanes, showing—
(i) control plasmid DNA
(ii) plasmid DNA without RNase treatment
(iii) plasmid DNA after RNase treatment. 8

3. Calculate the average transformation efficiency when *E. coli* cells were transformed with "2µl of 100ng/µl" of plasmid DNA; and the number of colonies obtained were "90" and "105" on two different ampicillin plates. Show the calculations separately of two plates and then calculate the average transformation efficiency. [Assume 100 µl was plated.] 10

4. (a) Write the procedure of bacterial conjugation experiment. 7

(b) In a tabular format, show the result that you will observe. 6

(c) Write an interpretation. 2

5. (a) Write the procedure of setting up Hind III digestion of lambda DNA in 40 µl reaction taking 1 µgm of DNA. 7

(b) Show the pattern of bands that will be obtained when the above digestion mix is run in an agarose gel also containing lanes of 'Uncut lambda DNA' and 'DNA ladder'. Proper labelling should be done. 8

6. Laboratory Notebook. 15

7. Viva voce. 15
