

2020

MICROBIOLOGY — HONOURS — PRACTICAL

Paper : CC-6P

Full Marks : 30

The figures in the margin indicate full marks.

1. (a) Define generation time.
 (b) Suppose in your laboratory you are monitoring the growth rate of *Escherichia coli* by following proper conditions. After the completion of the experiment you have obtained the following data of optical density at 600 nm.

Time (minute)	Optical density at 600 nm
0	0.080
30	0.101
60	0.220
90	0.410

Time (minute)	Optical density at 600 nm
120	0.620
150	0.840
180	0.860

- (i) Draw the graph (Time vs. Optical density) with these data
 (ii) Calculate the generation time from these data. 1+(5+4)
2. (a) Suppose in your laboratory you are monitoring the fermentation experiment with *Saccharomyces cerevisiae*.
 (i) Which media would you prefer for this fermentation practical? Mention the composition and pH of the selected media.
 (ii) Which observations would you expect from this experiment?
- (b) Suppose you are studying the effect of temperature on growth of *Escherichia coli*. After 2 hours of incubation you have obtained the following optical density data at 600 nm.

Temperature	Optical density at 600 nm
15°C	0.181
25°C	0.225
37°C	0.630
50°C	0.310
60°C	0.210

- (i) Draw the graph with these data (Temperature vs. Optical density).
 (ii) At which temperature the growth of the above mentioned microorganism is maximum? (3+2)+(4+1)
3. Viva voce and Laboratory Notebook 10