

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LO 963]

MAY 2019

Sub. Code: 2963

**M.PHARM. DEGREE EXAMINATION
(PCI New regulations 2016)
SEMESTER-I
BRANCH IV–PHARMACEUTICAL BIOTECHNOLOGY – MPB
PAPER III – BIOPROCESS ENGINEERING AND TECHNOLOGY**

Q.P. Code : 262963

Time : Three hours

Maximum : 75 Marks

I. Elaborate on:

(2 x 20 = 40)

1. Define Fermentation and give examples of various classes of fermentation products. Discuss the different types of fermenters and their applications. Elaborate on the parts related to aeration and agitation.
2. Discuss in detail the methods for recovering intracellular constituents from fermentation system.

II. Write notes on:

(7 x 5 = 35)

1. Significance of mass transfer in fermentation.
2. Any one Vitamin produced by fermentation.
3. Briefly discuss the importance of rheology in fermentation process.
4. Write on the biotransformation of steroids with their advantages.
5. Streptomycin fermentation process.
6. Advantages and applications of Immobilisation.
7. Media used in fermentation.
