

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(Second Semester)

Branch -BIOTECHNOLOGY

CORE ELECTIVE ! : BIOPROCESS TECHNOLOGY

Time: Three Hours

Maximum: 75 Marks

Answer ALL questions

ALL questions carry EQUAL marks

(2 + 5+ 8)

- 1 a Mention the importance of agitator in a bioreactor.
b Explain the importance of turbidostat and chemostat in continuous fermentation with a neat sketch.
c Write a detailed account on substrates used as carbon and nitrogen source in industrial fermentation.
OR
d Define cryopreservation.
e Write a short note on the sterilization techniques used in fermentation,
f Discuss about the different techniques used for strain development of microorganisms in fermentation .technology.
- 2 a Define exponential phase.
b Write a brief note on different centrifugation techniques used in downstream processing.
c Explain the mechanism and kinetics of fed batch process.
OR
d What is crystallization?
e Write the advantages and disadvantages of batch, fed batch and continuous fermentation processes,
f Elaborate any three processes used in downstream processing.
- 3 a Name the microorganism and substrate used in the biosynthesis of . glutamic acid.
b Write the process of fermentation production of vitamin B12.
c Explain the biosynthesis of citric acid.
OR
d Name the microorganism and substrate used in the biosynthesis of lysine,
e Write the biosynthesis of tryptophan,
f Write an essay on biosynthesis of ethanol.
- 4 a Define enzyme immobilization.
b Write a short note the industrial application of pectinase and lipase,
c Explain the microbial production of lactase and its industrial application.
OR
d What is the role of pectinase?
e Explain the microbial production of cephalosporins,
f Elaborate the different methods of enzyme immobilization.
- 5 a Define ergot alkaloids.
b Explain the procedure for biotransfomnation.
c Give a detailed account on Bioremediation and its application.
OR
d Define Bioremediation,
e Explain the types of bioconversion reactions.
f Discuss in detail about the applications of bioconversions, transformation of steroids, non steroid compounds.