GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

RN190012208

Registration No: | | | | | | | | | | |

Total Number of Pages : 2 AR-17 B.TECH

B.TECH 5th SEMESTER EXAMINATIONS, NOV/DEC 2019

BBTPE5043 INDUSTRIAL MICROBIOLOGY AND ENZYME TECHNOLOGY

BIOTECH BRANCH

Time : 3 Hours Maximum : 100 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) 10 x 2=20 Mark

Q.1. Answer *All* Questions

a The Aeration is mainly provided to organisms present in _____ [CO1] [PO1]

a) Submerged culture b) Solid State culture

c) Batch culture d) Surface culture

b The continuous culture or fermentation can be used to produce_____ [CO1] [PO1]

a) Biomass b) Primary metabolites

c) Secondary metabolite d) Antibodies

c Olive oil is being used as a substrate for _____ production. [CO2] [PO2]

a) Penicillin b) Protease c) Lipase d) Starch

d The Induced mutations results in _____ formation [CO3] [PO3]

a) A-A dimer b) T-T dimer c) G-G dimer d) C-C dimer

e The fermentation media should be free from _____ [CO3] [PO3]

a) Precursors b) Defoamers c) Inhibitors d) Toxicity

f Which is not fruit or vegetable based fermented product [CO2] [PO2]

a) Beer b) Wine c) Vinegar d) Sauerkraut

g The final electron acceptor in lactic acid fermentation is [CO2] [PO2]

a) NAD b) Oxygen c) Lactic acid d) Pyruvate

h Which of the following is not a method of immobilization? [CO4] [PO4]

a) Ionic bonding b) Adsorption c) Entrapment d) Encapsulation

i Enzymes that are used to remove protein stains from clothes are called_____ [CO4] [PO4]

a) Amylase b) Protease c) Coenzyme d) Cellulase

j Separation of proteins in 2D gel electrophoresis is based_____ [CO4] [PO4]

a) Relative mass and charge b) Relative molecular weight

c) Relative atomic weight of amino d) Charge

PART – B: (Short Answer Questions) 10X2=20 Marks

Q.2. Answer *ALL* questions

a What is the principle of turbidostat [CO1] [PO1]

b What is generation time? [CO1] [PO1]

c What should be the criteria for selection of microorganisms for fermentation? [CO3] [PO3]

d Describe the importance of yeast in industry. [CO2] [PO2]

e	Differentiate between upstream process and downstream process.	[CO2] [PO2]
f	What is lyophilization?	[CO3] [PO3]
g	What is the fermentation condition and microorganism used for Glutamic acid production?	[CO2] [PO2]
h	Name any two proteins used for diagnostics and medical therapy.	[CO4] [PO4]
i	Define isoelectric point of a protein.	[CO4] [PO4]
j	Which class of enzymes catalyzes transfer of groups within the molecule and group transfer reactions respectively?	[CO4] [PO2]

PART – C: (Long Answer Questions) 4X15=60 Marks

Answer *ALL* questions

Q. 3			
a	Describe different type of fermenters used for large scale production in industry.	8 + 7 Marks	[CO1] [PO1]
b	How batch fermentation is different from continuous fermentation.		[CO1] [PO1]
	OR		
c	Discuss on the microbial growth and its kinetics in batch culture.	8 + 7 Marks	[CO1] [PO1]
d	Write notes on feed batch fermentation.		[CO1] [PO1]
Q. 4			
a	Describe the microbial process for manufacture of citric acid in an industry.	8 + 7 Marks	[CO2] [PO2]
b	Describe industrial scale of protease production with a neat flowsheet.		[CO2] [PO2]
	OR		
c	How insulin is being produced commercially.	8 + 7 Marks	[CO2] [PO2]
d	Write a note on the microbial species used industrially for production of antibiotics.		[CO2] [PO2]
Q. 5			
a	Write in detail about the media selection and development for fermentation process.	8 + 7 Marks	[CO3] [PO2]
b	How genetically engineered strain can be developed?		[CO3] [PO2]
	OR		
c	Explain various methods used for strain improvement of industrially important microorganisms.	8 + 7 Marks	[CO3] [PO2]
d	How inoculums are developed for fermentation process?		[CO3] [PO2]
Q.6			
a	Discuss the methods used for enzyme stabilization for industrial products.	8 + 7 Marks	[CO4] [PO2]
b	Write a note on application of biocatalyst.		[CO4] [PO2]
	OR		
c	Discuss on the various application of enzymes in industry.	8 + 7 Marks	[CO4] [PO2]
d	How chemical modification occurs by using enzymes?		[CO4] [PO2]