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BCS 554

IV Semester M.Sc. Degree Examination, September/October 2022

BIOCHEMISTRY

Microbial Biochemistry

Time : 3 Hours

Max. Marks : 70

I. Answer **any ten** of the following :

(10×2=20)

- 1) a) Define fermentation process.
- b) Write a note on nutrient cycling.
- c) Define non symbiotic nitrogen fixation.
- d) What is quorum sensing ?
- e) Define Corrosion.
- f) Name any two microbes involved in butyric acid fermentation.
- g) Write a note on bacterial conjugation.
- h) Define mutant enrichment.
- i) What are endospores ?
- j) What is Tet-regulation ?
- k) What is biofouling.
- l) What are antifoaming agents ? Give example.

II. Answer **any five** of the following :

(5×10=50)

- 2) a) Explain the process of microbial degradation of lipids.
- b) Describe nitrogen cycle. **(5+5=10)**
- 3) a) Give an account on metabolism in autotrophs.
- b) Describe the metabolism of aromatic compounds. **(5+5=10)**

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- 4) a) Explain the industrial production of alcohol.
b) Discuss the fermentation pathways in microorganisms citing an example. **(5+5=10)**
5. a) Enlist and explain the DNA transfer methods in bacteria.
b) Discuss how to over express the recombinant proteins using *P. Pastoris*. **(5+5=10)**
6. a) What are bacterial mutants ? Explain the different methods of mutant analysis.
b) What are regulatable promoters ? Explain citing an example. **(5+5=10)**
7. a) Explain the role of microbes in degradation of industrial waste.
b) Describe Fatty acid biosynthesis. **(5+5=10)**
8. a) Distinguish between reversion versus suppression.
b) *E.Coli* is good expression system for recombinant proteins. Justify it. **(5+5=10)**
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