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(20516)

Roll No.

B. Sc. (Micro.)-II Year

3496

B. Sc. (Micro.) Examination, May 2016

Microbial Physiology

(B-203)

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt any five questions. All questions carry equal marks.

1. Give a brief account of secondary metabolites produced by microorganism. 10
2. Write notes on any two of the following: 5 each
 - (i) Mycotoxins
 - (ii) Synchronous growth
 - (iii) Metabolic mill.

(2)

3. Describe different phases of microbial growth and growth kinetics. 5,5

4. How will you prepare the culture medium? Write the formulation and nutritional components of culture medium. 4,6

5. Write short notes on any four of the following: 2½ each

- (i) Microbial herbicides
- (ii) Yeasts
- (iii) Batch culture
- (iv) Pasteur's effect
- (v) Primary metabolites
- (vi) Michaelis constant (K_m)

6. Explain with suitable examples oxygenic and anoxygenic photosynthesis. 5,5

7. Give a detailed account of method of purification and sequencing of proteins. 5,5

(3)

8. Write an account of molecular basis of cellular transport mechanism in microbes. 10

9. Write notes on any two of the following : 5 each

(i) Cytochromes

~~(ii) Chemical factors responsible for the growth of microorganisms.~~ *del. sm*

(iii) Redox potential.

~~10. Write short notes on any four of the following : 2½ each~~

~~(i) Chemosynthesis bacteria~~

~~(ii) Photosynthesis pigments in cyanobacteria~~

~~(iii) Growth and development~~

~~(iv) Continuous culture of microbes~~

(v) Allosteric enzyme

(vi) Beta-oxidation of fatty acids

(vii) Nutrition modes in microbes.

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Roll No. 1596101662

B.Sc. (Micro.)-II Year

3496

B.Sc. (Micro.) Examination, May-2017

Microbial Physiology

(B-203)

Time : Three Hours]

[Maximum Marks : 50

Note: Attempt any five questions. All questions carry equal marks.

1/ What is a culture medium? Discuss the types of culture media used in microbial cultures.

10

2/ Write the mechanism of nutrient transport across the membrane in microbes.

10

3/ What are the major differences between bacterial and eukaryotic photosynthesis. Discuss the mechanism of CO₂ fixation in prokaryotes.

10

P.T.O.

4. What are Photoautotrophs? Discuss Heterotrophic mode of nutrition in bacteria with example. 10
5. What does dynamics of microbial growth imply? Discuss the different phases of microbial growth. 10
6. Write short notes on : 5+5=10
(a) Chemotrophs
(b) Bacterial Cell structure
7. What are ATP- binding cassettes? Discuss ATP- dependent transport in microbes. 10
8. What are synchronous and asynchronous growth? Enumerate the various effects of chemical factors on growth of microbes. 10
9. Write short notes on : 5+5=10
(a) Batch Cultures
(b) Microbial stress response

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10. Write short notes on : 2.5×4=10

- (a) Ionophores
- (b) Extremophiles
- (c) Antibiotics as secondary metabolites
- (d) Green sulphur bacteria

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(20518)

Roll No. 164356917

B. Sc. (Micro.) -II Year

3496

B. Sc. (Micro.) Examination, May 2018

Microbial Physiology

(B-203)

Time : Three Hours]

[Maximum Marks : 50

Note : Answer any Five questions. All questions carry equal marks.

1. Write in detail about the mechanism of photosynthesis in bacteria. Explain with the help of diagrams. 10
2. Discuss the growth of microbes with special reference to effect of physical and chemical factors on it. 10

(2)

3. "Assimilation of CO_2 can be used as a measure of metabolic activity in heterophilic bacteria." Is the statement true or false? Support your answer with suitable explanation and also give examples. 10
4. What is Microbial Physiology? What do we study under it? Write a short description of microbial metabolic processes. 10
5. Describe the importance of microorganisms and their diversity in nature with reference to their cellular structure and function. 10
6. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$
- (a) Acidophile
 - (b) Halophile
 - (c) Obligate aerobe
 - (d) Chemotaxis.
7. How do solid cultures differ from liquid cultures? Explain Batch cultures and continuous cultures with examples. 10

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(3)

8. Write short notes on the following: $5+5=10$
- (a) Phases of growth in microbial batch cultures
 - (b) Secondary metabolites in microorganisms.
9. What are bacterial autotransporters? Explain the nutrient transport mechanism in microbes. Give diagrams. 10
10. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$
- (a) Passive transport
 - (b) Symport and antiport
 - (c) Bacteriochlorophyll
 - (d) Difference between plant photosynthesis and bacterial photosynthesis.

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