

Master of Science (M.Sc.) (Microbiology) Semester—II (C.B.C.S.) Examination

MICROBIAL METABOLITES (MMT)

Paper—2

Time : Three Hours]

[Maximum Marks : 80

N.B. :— ALL questions are compulsory and carry equal marks.

1. Describe structure, mode of action and functions of plant secondary metabolites. 16

OR

Describe structure and importance of following :

- (a) Collagen 4  
(b) Spermidine 4  
(c) Hyaluronic acid 4  
(d) Amylopectin. 4
2. Write history of discovery of antibiotics and add a note on various mechanisms of antibiotic resistance. 16

OR

Describe structure and mode of action of following antibiotics :

- (a) Amikacin 4  
(b) Amoxicillin 4  
(c) Chloramphenicol 4  
(d) Azithromycin. 4
3. Give a detail account on pigments of eukaryotes. 16

OR

Write notes on :

- (a) Accessory pigments 8  
(b) Rhodospira and bacteriochlorophylls. 8

## Master of Science (M.Sc.) Semester-II (CBCS) (Microbiology) Examination

## MICROBIAL METABOLITES (MMT)

## Paper-2

Time : Three Hours]

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1. What is secondary metabolite ? Describe plant secondary metabolites in detail. 16

**OR**

What are polyamines ? Explain the synthesis and functions of putrescine and spermine. 16

2. Discuss the phenomenon of antibiotic resistance and explain different mechanisms of antibiotic resistance. 16

**OR**

Discuss the structure and mode of action of Amoxicillin, Chloramphenicol, Doxycycline and Sulfamethoxazole. 16

3. Discuss the structures, properties and natural occurrence of phycobiliproteins and bacteriochlorophylls. 16

**OR**

Give the general account of pigments. Write a note on defensive role of pigments. 16

4. Write an account on structure, functions and chemistry of retinol. 16

**OR**

Discuss the different characteristics of fat and water soluble vitamins. 16

5. Write notes on :

- (a) Dextrin. 4  
(b) Mode of action of fucanazole. 4  
(c) Accessory pigments. 4  
(d) Scurvy. 4

Master of Science (M.Sc.) Semester—II (C.B.C.S.) (Microbiology) Examination  
MICROBIAL METABOLITES (MMT)

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- N.B. :— (1) All questions are compulsory and carry equal marks.  
(2) Draw diagrams wherever necessary.

1. Describe various secondary plant metabolites 16

OR

Write notes on :

- (a) Xanthan 8  
(b) Polyamines. 8

2. Discuss the history and discovery of antibiotics and explain mechanism of antibiotic resistances. 16

OR

Write notes on :

- (a) Structure and mode of action of Tetracyclines and Quinolones 8  
(b) Structure and mode of action of Sulphonamides and Fluconazole. 8
3. Describe various types of eukaryotic pigments and their significance. 16

OR

Write notes on :

- (a) Haemoglobin 3  
(b) Bacteriochlorophylls. 8
4. Discuss the structure, chemistry and functions of Ascorbic acid and Retinol. 16

OR

Write notes on :

- (a) Pellagra 8  
(b) Glossitis. 8
5. Write short notes on :
- (a) Patulin 4  
(b) Amoxicillin 4  
(c) Defensive role of pigments 4  
(d) Scurvy. 4

Master of Science (M.Sc.) Semester—II Choice Based Credit System (CBCS) (Microbiology)  
Examination

MICROBIAL METABOLITES (MMT)

Paper—2

Time : Three Hours]

[Maximum Marks : 80

N.B. :— All questions are compulsory and carry equal marks.

1/ Give a detailed account on 'secondary metabolites'. 16

OR

What are biopolymers? Explain with suitable examples. 16

2/ What is antibiotic resistance? Describe the various mechanisms of antibiotic resistance. 16

OR

Describe the structure and mode of actions of the following with example :

(a) Tetracyclines. 8

(b) Aminoglycosides. 8

3. Describe various microbial pigments. 16

OR

Write notes on :

(a) Carotenoids of eukaryotes 4

~~(b)~~ Myoglobin 4

~~(c)~~ Haemoglobin 4

~~(d)~~ Bile pigments. 4

4. Describe the structure, function and chemistry of Cyanocobalamin (Vitamin B<sub>12</sub>) and Ascorbic acid (Vitamin C). 16

OR

Describe various vitamin deficiency diseases in humans. 16

5. Write notes on :

(a) Polyamines 4

~~(b)~~ Mode of action of Fluconazole 4

~~(c)~~ Defensive role of pigments 4

(d) Characteristics of fat soluble vitamins. 4

M.Sc. Second Semester (Microbiology) (C.B.C.S. / NEP)  
Choose Any one Elective-I Optional Paper-VII (DSE-2) - MMI2T07 A  
Microbial Metabolites

P. Pages : 1  
Time : Three Hours



PRS/KS/24/10160  
Max. Marks : 80

- Notes : 1. All questions are compulsory and carry equal marks.  
2. Draw well labelled diagram wherever necessary.

1. Discuss polypeptides with suitable examples. 16  
OR  
Write note on:  
a) Aflatoxin 8  
b) Spermidine 8
2. Discuss in details mechanism of antibiotic resistance. 16  
OR  
Write note on:  
a) Quinolones 8  
b) Sulphonamides 8
3. Describe various type of Prokaryotic pigments and their significance. 16  
OR  
Write notes on.  
a) Vaso-Relaxants 8  
b) Laxatives 8
4. Discuss the detail account of structure and chemistry of vit B<sub>12</sub> & Vit C. 16  
OR  
Write note on.  
a) Keratomalacia 8  
b) Pellagra 8
5. Write notes on.  
a) Hyaluronic acid. 4  
b) Chloramphenicol. 4  
c) Defensive role of pigments. 4  
d) Beri Beri 4

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