



**DCW-003-1013016**

Seat No. \_\_\_\_\_

**Second Year B. Sc. (Sem. III) (CBCS)**

**(W.E.F. 2016) Examination**

**August - 2022**

**Microbiology : MB-301**

***(Microbial Systematics & Environmental Microbiology)***

**Faculty Code : 003**

**Subject Code : 1013016**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :** (1) Attempt any five out of ten questions.  
(2) All questions has equal marks weightage.  
(3) Figures in the right indicates total marks.

- 1 (a) Answer the following questions : 4  
(1) Define species  
(2) Define Numerical approach  
(3) Define jaccard coefficient  
(4) Who introduced numerical taxonomy ?
- (b) Answer in brief : 2  
Explain taxonomical rank
- (c) Answer in detail : 3  
Numerical Taxonomy
- (d) Write a note 5  
Describe Whittaker's five kingdom classification
- 2 (a) Answer the following questions : 4  
(1) Who is father of microbial evolution?  
(2) Full form of SSM and SJ  
(3) Define taxonomy  
(4) Write a seven major group of taxonomy
- (b) Answer in brief : 2  
Write a brief note on metagenomics
- (c) Answer in detail : : 3  
Explain numerical taxonomy
- (d) Write a note : 5  
Endosymbiotic hypothesis

- 3 (a) Answer the following questions : 4
- (1) Give a two examples of enterobacteriacea
  - (2) Write a two examples of endospore forming gram positive bacteria
  - (3) Treponema pallidum the causative agent of syphilis belongs to the ...
  - (4) Cell wall of the genus mycobacterium contain.....
- (b) Answer in brief : 2  
What are methanogens?
- (c) Answer in detail : 3  
Cyanobacteria
- (d) Write a note : 5  
Explain Enterobacteriaceae
- 4 (a) Answer the following questions : 4
- (1) The extra cellular extension possessed by members of the stalked bacteria is called a .....
  - (2) The genus nitrosomonas carries out the first step of nitrification process converting ..... to .....
  - (3) Give two examples of methanogens
  - (4) Write a two features of pseudomonaceae family.
- (b) Answer in brief : 2  
Write about proteobacteria
- (c) Answer in detail : 3  
Explain micrococcaceae
- (d) Write a note 5  
Explain in detail : Endospore forming gram positive bacteria.
- 5 (a) Answer the following questions : 4
- (1) Define algae
  - (2) Define protozoa
  - (3) Define autotrophy
  - (4) Comments on pseudopodia
- (b) Answer in brief : 2  
Ultra structure of algae
- (c) Answer in detail : 3  
Economic importance of protozoa
- (d) Write a note 5  
Describe in detail : reproduction of algae

- 6 (a) Answer the following questions : 4
- (1) The principal component of fungal cell wall is....
  - (2) Unicellular yeast reproduce asexually by process of .....
  - (3) *Aspergillus flavus* reproduce by the process of .....
  - (4) The ..... connection is a morphological feature unique to basidiomycetes
- (b) Answer in brief : 2
- Write a brief note on symbiotic protozoa
- (c) Answer in detail : 3
- Write a note on specialized somatic structure of fungi.
- (d) Write a note : 5
- Economic importance of fungi
- 7 (a) Answer the following questions : 4
- (1) Define Prions
  - (2) Give two examples of plant virus
  - (3) Define virulent phage
  - (4) Give the two Name of dsDNA containing virus
- (b) Answer in brief : 2
- Write about bacteriophage
- (c) Answer in detail : 3
- Write a note on structure of virus
- (d) Write a note : 5
- Explain in detail : cultivation of animal virus
- 8 (a) Answer the following questions : 4
- (1) Define Virus
  - (2) Give the two examples of DNA animal virus
  - (3) Give the name of dsRNA containing Virus
  - (4) Define Viroids
- (b) Answer in brief : 2
- Explain Helical symmetry
- (c) Answer in detail : 3
- Write on Replication of animal virus
- (d) Write a note : 5
- Write a note on nucleic acid found in virus

- 9** (a) Answer the following questions : **4**
- (1) Define Pollution
  - (2) Define Bioremediation
  - (3) Full form of MEOR and HEPA
  - (4) Define Biodegradation
- (b) Answer in brief : **2**  
Explain Biomagnification of DDT
- (c) Answer in detail : **3**  
Ecological effect of pesticide
- (d) Write a note : **5**  
Write a note on Biofuel
- 10** (a) Answer the following questions : **4**
- (1) What is Pollutants ?
  - (2) Define Biodeterioration
  - (3) Define Bioleaching
  - (4) What is Bioplastic?
- (b) Answer in brief : **2**  
Difference between bioremediation and biodegradation.
- (c) Answer in detail : **3**  
Explain about microbial oil recovery
- (d) Write a note **5**  
Write a note on microbial air pollution.
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