

**M.Sc. 1st Semester Examination, 2019**

**MICROBIOLOGY**

**PAPER – MCB-101**

*Full Marks : 40*

*Time : 2 hours*

**Answer all questions**

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

**GROUP—A**

**[ Marks : 20 ]**

**1. Answer any two questions : 2 × 2**

**(a) What is Peptide mass fingerprinting ?**

*( Turn Over )*

- (b) What is molecular taxonomy ?
- (c) Name two chemotaxonomic marker of plasma membrane.
- (d) What is Gaidukov phenomenon ?

2. Answer any *two* questions : 4 × 2

- (a) Discuss about various techniques of isozyme typing.
- (b) Compare between RFLP and RAPD.
- (c) Write short note on endosymbiotic hypothesis.
- (d) Name the latest volumes of Bergey's Manual of systematic Bacteriology.

3. Answer any *one* question : 8 × 1

- (a) What is unculturability? Mention the reasons of unculturability in vitro. Discuss briefly any one method about the metagenomic study of unculturable microbes. 2 + 2 + 4

- (b) Why did you consider amino acid as chemotaxonomic marker of cell wall? Describe different processes of amino acid analysis.

3 + 5

GROUP-B

[ Marks : 20 ]

4. Answer any *two* questions : 2 × 2

(a) Define Viroid. Mention any one viroid disease. 1 + 1

(b) Distinguish between a positive-strand RNA virus and a negative-strand RNA virus. 2

(c) Why do some viruses need to be uncoated after penetration and others do not? 2

(d) Name any two anti-viral drugs mentioning their use. 2

5. Answer any *two* questions : 4 × 2

(a) Draw and describe the one step growth curve of virus replication. Explain why the "growth curve" for viruses is stepped rather than smooth (as seen in bacterial multiplication).

1 + 2 + 1

- (b) How does a prion differ from a viroid ? How does sporadic prion disease differ from the transmitted form ? 2 + 2
- (c) Describe the features of Baltimore classification of virus. 4
- (d) Mention the importance of Hepadnaviridae in viral pathogenesis. 4

6. Answer any *one* question : 8 × 1

- (a) Describe the mode of infection and pathogenesis of Poliovirus. 4 + 4
- (b) (i) Briefly discuss the variation in the structure of bacteriophages.
- (ii) Describe the control of lysogeny. 4 + 4
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