

**2017**

**M.Sc. 2nd Semester Examination**

**MICROBIOLOGY**

**PAPER—MCB-201**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the margin indicate full marks.*

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

*Illustrate the answers wherever necessary.*

**Group-A**

[ 20 Marks ]

Answer any *two* questions.

1. (a) What do you mean by pathogenicity of an organism ?  
(b) State the role of adhesin molecule during interaction of pathogen with the host.

*(Turn Over)*

- (c) How pathogen spread through the host tissue ?
- (d) How host signals triggers the dimorphic behaviour of fungi during its infection ? 1+3+3+3
2. (a) Write one natural and one synthetic chemical that activate the signalling pathway to acquire resistance against several plant pathogens.
- (b) Name the inhibitors and their mechanism in the transgenic tomato plants that resist the entry of pathogen of powdery mildew disease. 5+5
3. Write short notes on any *four* :  $2\frac{1}{2} \times 4$
- (a) Importance of invasions ;
- (b) Steps of Koch's postulates ;
- (c) Sequential local events after tissue injury ;
- (d) What damages do viruses during infection ?
- (e) Rhytoalexine ;
- (f) Horizontal and Vertical resistance.

**Group-B**

[ 20 Marks ]

Answer any *two* questions.

4. (a) What are primary and secondary lymphoid organs ? Why these are so called ?
- (b) Write a short note on T-dependent and T-independent antibody responses.
- (c) Write a short note on allograft rejection. 3+4+3
5. (a) What is hypervariable region of an antibody ?
- (b) What are the components involved in classical complement pathway. Enlight in detail the step-wise activation of classical pathway.
- (c) What is the genetic basis of class switching ? 1+(2+4)+3
6. Write short notes on any *four* : 4×2  $\frac{1}{2}$
- (a) Factors affecting immunogenicity of an molecule ;
- (b) Surface molecules and function of macrophages ;

- (c) 'Treatment of an enzyme leads to production of identical three fraction of immunoglobulin' — comment on the type and mode of action of this enzyme.
- (d) Complement system ;
- (e) Monoclonal antibodies ;
- (f) Hypersensitivity.
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