

(i) Printed Pages : 3]

Roll No.

(ii) Questions : 9]

Sub. Code :

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Exam. Code :

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**B.A./B.Sc. (General) 4th Semester
Examination****1047****INDUSTRIAL MICROBIOLOGY
(Microbial Technology)**

(Elective)

Paper : IMB 402**Time : 3 Hours]****[Max. Marks : 33**

Note :- Attempt *five* questions in all, including Q. No. 1 (Section-A) which is compulsory and attempt *one* question from each Section B-E.

Section-A

1. Answer the following :

- (a) What are haptens ?
- (b) What do you mean by lymphocyte traffic ?
- (c) Role of colony stimulating factors.

- (d) Define the HLA.
- (e) Functions of vaccines.
- (f) Enlist various factors affecting antibody production. 1.5×6=9

Section-B

- 2. Describe the functions of various cells of immune system.
- 3. Give an account on MALT and CALT. 6,6

Section-C

- 4. Explain the structure of antigenic combining regions of antibodies.
- 5. Write a note on antibody diversity. 6,6

Section-D

- 6. (a) What are interferons ?
(b) Briefly describe the mechanism of classical complement pathway. 2,4
- 7. Write short notes on the following :
 - (a) Applications of monoclonal antibodies.
 - (b) Functions of accessory cells. 3,3

Section-E

(Compulsory Question)

8. What is the procedure, advantages and disadvantages of Widal test. 6
9. (a) Discuss the principle and use of western blotting.
- (b) Discuss the principle of Weil-Felix reaction. 3,3