

**VCD-29/09/15 BIOTECHNOLOGY-I S.Y.B.Sc. SEM III EXAM MARKS 75 2<sup>1/2</sup> HRS (80)**

- All questions are compulsory.
- Figures to Right indicate marks.
- Draw diagram wherever necessary.

**Q I (A) Fill in the blanks (Any four):** (04)

1. \_\_\_\_\_ immunity is not specific to any one pathogen but rather constitutes a first line of defense.
2. \_\_\_\_\_ receptors recognize only antigen that is combined with either class I or class II MHC molecules.
3. \_\_\_\_\_ antigens are degraded in the cytoplasm and then displayed with class I MHC molecules on the host cell surface which might be a tumor cell or virally altered cell.
4. The \_\_\_\_\_ response is best suited for elimination of endogenous antigens.
5. All \_\_\_\_\_ are antigens but not all antigens are immunogens.
6. \_\_\_\_\_ is the ability to induce a humoral and/or cell mediated response.
7. Blood can be separated in a centrifuge into a fluid and cellular fraction, the fluid fraction is called as \_\_\_\_\_.
8. For each immunoglobulin molecule there are \_\_\_\_\_ Fab sites because they bind to antigen and one Fc site that crystallizes under freezing conditions.

**Q I (B) Define any two following terms:** (04)

- |                 |  |
|-----------------|--|
| 1. Antigenicity | 3. Idiotype                            |
| 2. Adjuvants    | 4. Naturally acquired passive immunity |

**Q I (C) Answer any two of the following:** (12)

1. What are the different events involved in inflammation?
2. Explain secondary line of defense.
3. State the properties of antigens.
4. Diagrammatically explain the basic structure of immunoglobulins.

**Q II (A) Explain any three of the following terms:** (06)

- |                           |                         |
|---------------------------|-------------------------|
| 1. Pathogenicity          | 4. Nosocomial infection |
| 2. Opportunistic pathogen | 5. Acute infections     |
| 3. Sign                   | 6. Bacteremia           |

**QII(B) Give significance of any one the following as virulence factors of pathogens** (02)

- |                   |              |
|-------------------|--------------|
| 1. Hyalourinidase | 2. Coagulase |
|-------------------|--------------|

Contd 2/--

(12)

**Q II (C) Answer any two of the following:**

1. Give a brief account on virulence factors.
2. Differentiate between endotoxins and exotoxins.
3. What are resident microflora? Describe briefly about the normal flora of the gastrointestinal tract.
4. Give different types of infections and briefly describe the stages of clinical infections.

(08)

**Q III (A) Explain any four of the following:**

- |                     |                      |
|---------------------|----------------------|
| 1. Nick translation | 5. Vaccination       |
| 2. HAT medium       | 6. DNA vaccines      |
| 3. BCG vaccine      | 7. TAB vaccine       |
| 4. DNA probes       | 8. Conjugate vaccine |

(12)

**Q III (B) Answer any two of the following:**

1. How would you find a particular DNA in a sample. Elaborate on the method.
2. What are sub-unit vaccines? Explain with a suitable example.
3. Define monoclonal antibodies. How are they produced through hybridoma technology?
4. A person stepped on a rusty iron nail. What kind of vaccine he has to go for and why?

**Q IV Write short notes on any three of the following:**

(15)

1. B- lymphocytes.
2. Oxygen- independent phagocytosis.
3. Edible vaccines.
4. Advantages of modern vaccines over traditional vaccines.
5. Koch's postulates.
6. Normal flora of the mouth.

-----XXXXXXXX-----