

**B.Sc. IN MEDICAL LABORATORY  
TECHNOLOGY (BMLT)**

**Term-End Examination**

**June, 2016**

00346

**BAHI-011 : APPLIED SEROLOGY, IMMUNOLOGY  
AND MICROBIOLOGY**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any *six* questions. Question no. 8 is *compulsory*.

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1. (a) Define immunoglobulins.  
(b) Mention various types of immunoglobulins.  
Write their structural and functional differences.  
(c) Write the indications and functions of immunoglobulins in various disorders. 1+4+3
2. (a) What is immunological apparatus ?  
(b) Define T and B cells. Write their functions.  
(c) Explain the mechanism of humoral and cellular immunity. 2+3+3

3. (a) What are the types of agar used in gel electrophoresis/gel diffusion techniques ?
- (b) Write the role of immunofluorescence in gel diffusion techniques.
- (c) Name the common buffers used in immunodiffusion techniques. Write the main constituents and pH. 2+3+3
  
4. (a) What is counter current immuno-electro-osmopheresis (CIEOP) ? Write its clinical applications.
- (b) What are the fractions of protein immuno-electrophoresis ? Give the importance of 'Beta and Gamma' globulins.
- (c) Write the clinical applications of enzyme immuno assays (EIA). 3+3+2
  
5. (a) Define allergy.
- (b) Write the differences between immediate and delayed hypersensitivity reactions.
- (c) Indicate various disorders associated with hypersensitive reactions. 2+3+3
  
6. (a) On what principle is flow cell cytometry (FCM) based ?
- (b) Name the various equipments available in India to perform FCM.
- (c) Write the clinical applications and limitations of the use of FCM. 2+2+4

7. (a) Write the events of polymerase chain reaction (PCR).  
(b) Write the clinical applications of RT-PCR.  
(c) Name various genetic disorders where PCR applicability is in common use for diagnosis. 3+3+2
8. Write short notes on any *five* of the following :  $5 \times 6 = 30$
- (a) Parameters of check in prevention of nosocomial infections
  - (b) Automation in microbiology
  - (c) Presumptive coliform bacterial counts
  - (d) Quality control measures in culture and sensitivity for routine bacterial organisms
  - (e) Significance and clinical applications of bacteriology of water
  - (f) Methods of bacterial counts for water examination of public health importance
  - (g) HLA- antigens
  - (h) Spread of nosocomial infection
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