

**M.Sc. 3rd Semester Examination, 2018**

**BIOMEDICAL LABORATORY SCIENCE  
AND MANAGEMENT**

**PAPER -- BLM-301**

*Full Marks : 40*

*Time : 2 hours*

**Answer Q. No. 1 and any three from the rest**

*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*

**1. Answer all questions of the following with  
correct option : 1 × 10**

**(a) In counter immunoelectrophoresis**

**(f) electrophoretic current will drive the  
antibody and antigen parallel to each  
other**

*( Turn Over )*

( 2 )

- (ii) electrical pulse will drive the antibody antigen towards each other
  - (iii) antibody and antigen migrates towards anode
  - (iv) antibody and antigen will be in a neutral state
- (b) Heterogenous nature of antigen/antibody can be identified through the following technique
- (i) SRID
  - (ii) ODD
  - (iii) DDIE
  - (iv) Both (iii) and (iv)
- (c) Ag and Ab reaction can be measured effectively by
- (i) Light scattering
  - (ii) Immunoturbidimetry
  - (iii) Nephelometry
  - (iv) All of the above

- (d) Protein A is required in
- (i) Coagulation
  - (ii) Coaglutination
  - (iii) Microtitration
  - (iv) CFT
- (e) HLA typing is essential in
- (i) RA
  - (ii) SLE
  - (iii) Organ transplant
  - (iv) Benign tumour
- (f) Anamnestic reaction may visible after
- (i) WIDAL test
  - (ii) VDRL test
  - (iii) RA test
  - (iv) SLE test
- (g) Hemolycin requires in
- (i) CFT

- (ii) RA test
  - (iii) TORCH panel test
  - (iv) SLE test
- (h) Anti-ds-DNA test requires in
- (i) SLE
  - (ii) RA
  - (iii) Typhoid
  - (iv) Paratyphoid
- (i) Heat inactivation can be avoided by adding the following in serum
- (i) Ammonium persulfate
  - (ii)  $(\text{NH}_4)_2\text{SO}_4$
  - (iii) Choline chloride
  - (iv) All of the above
- (j) Which of the following test is more credible than ESR test for inflammatory response
- (i) ASO
  - (ii) CRP
  - (iii) CFT
  - (iv) WIDAL

2. (a) Elaborate the principle of western blot technique and interpret the result of western blot test for AIDS detection.
- (b) Why is blocking essential in western blot ?
- (c) How does HIV attack host Lymphocytes -- discuss with special reference to the role of CCR5 and CXCR4. 4 + 2 + 4
3. (a) What do you mean by algorithm of an infectious disease detection ?
- (b) Discuss the different types of specific trepanomal tests.
- (c) Write the principle of FTA-abs test. 2 + 5 + 3
4. (a) What do you mean by clonal selection in the preparation of monoclonal antibody ?
- (b) What is the role of electroporation and electrofusion in hybridoma technology ?
- (c) *What is the role of HAT medium ?*

- (d) Why it is mandatory to select HGPRT gene deficient myeloma cells in hybridoma technology ?  $2\frac{1}{2} + 2\frac{1}{2} + 2\frac{1}{2} + 2\frac{1}{2}$
5. (a) Write the role IgG-CH<sub>2</sub> domain in the progression of RA.
- (b) How does anti-CCP is formed in degenerative RA?
- (c) Name the tests for diagnosis of SLE. 4 + 4 + 2
6. Write short notes on :  $2\frac{1}{2} \times 4$
- (a) WIDAL test
- (b) Toxoplasmosis detection
- (c) Microtitration plate technique
- (d) Lattice formation.
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