

2016

M.Sc.

3rd Semester Examination

BIOMEDICAL LABORATORY SCIENCE AND MANAGEMENT

PAPER—BLM-301

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

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

1. Answer any ten questions : 10×1

(i) Which of the following is not a quality of an effective vaccine :

(a) It should require periodic boosters to maintain its effectiveness ;

(Turn Over)

- (b) It should stimulate the production of memory cells ;
 - (c) It should stimulate both humoral and cell mediated immunity ;
 - (d) All of the above.
- (ii) Why is using the adjuvant disadvantageous :
- (a) It alleviates the necessity of booster dose ;
 - (b) It enhances immunogenicity of antigen ;
 - (c) It helps prevent back mutation of attenuated microbial antigen ;
 - (d) Both b and c.
- (iii) What term is defined as the ability of a test to detect small concentration of antigen or antibody :
- (a) Titer ;
 - (b) Sensitivity ;
 - (c) Serology ;
 - (d) Agglutination.
- (iv) What type immunologic reaction occurs when specific antibodies are mixed with whole cell antigens :
- (a) Precipitation ;
 - (b) Flocculation ;

- (c) Agglutination ;
- (d) Immunodiffusion.
- (v) What is the agglutininogen in a viral hemagglutination test ?
- (a) Red blood cells ;
- (b) Antigen ;
- (c) Antibody ;
- (d) Patient Serum.
- (vi) The double diffusion method allows for disease identification and diagnosis and is an application of following technique :
- (a) Agglutination ;
- (b) Precipitation ;
- (c) Immunodiffusion (double) ;
- (d) Complete fixation.
- (vii) Complement fixation testing requires all of the following except :
- (a) Antigen ;
- (b) Antibody ;
- (c) SRBC ;
- (d) Streptolysin toxin.

(viii) Serotyping is used :

- (a) to identify, classify and subgroup of certain bacteria into categories ;
- (b) to determine the susceptibility of sheep red blood cells to compliant ;
- (C) Both of the above ;
- (D) None of the above.

(ix) What reagent is quantified when performing an indirect ELISA :

- (a) Chromogen ;
- (b) Antigen ;
- (c) Antibodies of patient serum ;
- (d) Complement.

(x) What is heat in activation of Serum ?

(xi) What is lattice ?

(xii) What do you mean by venereal disease ?

(xiii) What is meant by window period ?

(xiv) What is ccr_5 ?

(xv) Write the full form of FITC.

2. (a) Define IPHT and RPHA.
(b) What is Coagglutination test?
(c) Discuss experimentally how zone of equivalence is formed.
(2+2)+2+4
3. (a) What is the immunological basis of RA and discuss the role of anti-CCP in RA?
(b) Describe any two specific tests for Syphilis detection.
6+4
4. (a) Classify hypersensitivity reactions.
(b) What is anaphylactic shock syndrome?
(c) Describe the mechanism of one type of hypersensitivity reaction with diagram.
3+2+5
5. (a) How SLE is diagnosed?
(b) Describe the immunological and symptomatic features of SLE.
(c) Discuss tumor immunology.
2+3+5

6. (a) State the significance of CD count in HIV infected patients.
- (b) How HIV virus destroys in CD^{4+} lymphocytes?
- (c) Briefly describe Western blot technique for HIV detection.

2+4+4
