

M.Sc 3rd Semester Examination , 2009

**BIOMEDICAL LABORATORY SCIENCE
AND MANAGEMENT**

PAPER—IX (U - 17)

Full Marks : 40

Time : 2 hours

Answer all questions

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

MODULE—1

1. Answer any five questions : 1 × 5

**(a) What is the difference between CH 50 and
CH 100 ?**

(Turn Over)

- (b) What is the significance of combined vaccine ?
- (c) What is xenograft ?
- (d) What is anaphylactic shock ?
- (e) What is acute phase protein ?
- (f) What are the primary and secondary lymphoid organs ?
- (g) What is the full form of TGF-p ?
- (h) What do you mean by "goodness of fit" ?
2. (a) Describe complement fixation test with diagram mentioning its application.
- (b) Briefly discuss the lectin pathway of the complement system ?
- (c) Mention the role of complement on respiratory burst in leukocytes. 3 + 4 + 1

Or

- (a) How do you perform blocking during Western Blot and mention why it is essential?
- (b) What is zone of equivalence and how do you co-relate it with lattice formation?
- (c) Mention the principle of immunoelectrophoresis. What is the difference between immunoelectrophoresis and rocket immunoelectrophoresis?

$$\left(1 + 1\frac{1}{2}\right) + \left(1\frac{1}{2} + 1\right) + \left(1\frac{1}{2} + 1\frac{1}{2}\right)$$

3. (a) Briefly describe the procedure for the preparation of monoclonal antibody.

(b) How many hybrids can be generated from the cells of a single mouse spleen?

(c) What is the actual ratio of spleen cells form a viable hybrid with a myeloma cells?

(d) Write the name of the cells of the mononuclear phagocytic system.

4 + 1 + 1 + 1

Or

(a) Mention the clinical significance of α -feto protein detection.

(b) What is Zeta potential?

(c) Why IgM antibodies are more efficient at agglutination?

(d) Briefly describe the implication of the immune response in graft rejection.

$$1 + 1 + 1\frac{1}{2} + 3\frac{1}{2}$$

MODULE—2

4. Answer any *five* questions : 1 × 5

(a) Site an example of "Point-of-care testing" test.

(b) Mention the name of a false-positive reaction in a latex agglutination test for hCG.

(c) A classic technique for the detection of viral antibodies is :

(i) Passive hemagglutination

(ii) Indirect hemagglutination

(iii) Hemagglutination inhibition

(iv) Both (i) and (ii).

(d) Nephelometry can be used to assay all the following except :

(i) IgM

(ii) IgG

(iii) IgD

(iv) IgE.

(e) The primary incubation period for *T. pallidum* is usually about :

(i) 1 week

(ii) 2 weeks

(iii) 3 weeks

(iv) 4 weeks.

(f) Laboratory features of SLE include :

(i) The presence of ANAS

(ii) Circulating anticoagulants and immune complexes

(iii) Levels of complement

(iv) All the above .

(g) Arrange the following steps properly in the pathogenesis of rheumatoid arthritis :

(i) Immunologic events perpetuate the initial inflammatory reaction.

(ii) The primary etiologic factor initiates synovitis

(iii) An inflammatory reaction in the synovium develops into a proliferative destructive process of tissue.

(h) How do you inactivate serum complement without heat ?

5. (a) Mention the algorithm of serologic test for syphilis.
- (b) How do you perform double stained FTA-abs? State briefly with flowchart. 4 + 4

Or

(a) What is the clinical significance of anti-CCP test? How it is generated from arginine? Give the reaction.

(b) Give the schematic diagram of anti-CCP test by MEIA.

$$2 + 2\frac{1}{2} + 3\frac{1}{2}$$

6. Write short notes on : 3 + 4

(i) Anti cardiolipin antibody

(ii) Serological methods of visceral leishmaniasis detection in brief mentioning merits and demerits.

Or

- (a) Mention the names of 3 basic elements of flow cytometry.
- (b) How does two coloured FACS system works for CD4 + detection in the diagnosis of AIDS?
- (c) What is the demerit of above technique and how do you solve the problem by the application of more upgraded system? 1 + 3 + (1 + 2)
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