

Day : Thursday
Date : 08-10-2015

Time : 10.00 A.M. To 1.00 P.M.
Max. Marks : 60

N.B.:

- 1) Q.No.1 and Q.No.5 are **COMPULSORY**. Out of remaining questions attempt **ANY TWO** questions from each section.
- 2) Answers to both the sections should be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1 Name the following: [10]
- a) Cytokines secreted by T – cells.
 - b) T – dependent and B – dependent area in lymph nodes.
 - c) Major antibody produced in primary and secondary immune response.
 - d) Immunoglobulin molecules which serve as membrane receptors of B – cells.
 - e) Two non-covalent interactions between antigen and antibody.
- Q.2 a) With the help of a suitable diagram explain the structure of Thymus. [05]
- b) Write a short note on HLA antigens. [05]
- Q.3 a) Describe the process of phagocytosis. [05]
- b) Explain the terms Allotype, Isotype and Idiotypic. [05]
- Q.4 Write a short note on: [10]
- a) Western blotting
 - b) Immunofluorescence

SECTION – II

- Q.5 Attempt the following: [10]
- a) Expand the following terms: ADCC, PALS, HAT, CTLs.
 - b) Name two methods of HLA Typing.
 - c) What is the composition of membrane attack complex?
 - d) What is transcytosis?
 - e) What is inflammation?
- Q.6 a) What is hematopoiesis? Name and state the functions of various blood cells formed from a hematopoietic stem cell. [05]
- b) Describe the clinical uses of monoclonal antibodies. [05]
- Q.7 a) Describe type – I hypersensitivity with the help of a suitable diagram. [05]
- b) Discuss the mechanisms and components of immune system participating in graft rejection. [05]
- Q.8 a) What are cytokines? Describe briefly the properties of cytokines. [05]
- b) How does the “complement system” complement the immune response? [05]

ACHOLA-II (CBCS COURSE) : WINTER 2015
SUBJECT: rDNA IN MEDICINE

Day : Tuesday
Date : 13-10-2015

Time : 10:00 A.M. To 1:00 P.M.
Max. Marks : 60.

N.B.:

- 1) Q.1 and Q. No. 5 are **COMPULSORY**.
- 2) Attempt any **TWO** questions from the remaining questions of each Section-I & II.
- 3) Both the sections should be written in **SEPARATE** answer books.
- 4) Draw well labeled diagrams **WHEREVER** necessary.
- 5) Figures to the **RIGHT** indicate full marks.

Q.1 With the help of suitable diagrams, show the reactions catalyzed by the following enzymes: (10)

- a) DNA ligases
- b) DNase I
- c) Polynucleotide kinase
- d) EcoRI

Q.2 Elaborate on different methods of any **TWO** of the following: (10)

- a) DNA labeling
- b) Library screening
- c) Transcript analysis

Q.3 Briefly explain the principle of any **FOUR** of the following techniques: (10)

- a) Southern hybridization
- b) FISH
- c) Yeast two hybrid system
- d) Restriction mapping
- e) Shot gun cloning.

Q.4 Write short notes on the following: (10)

- a) Expression vectors
- b) Phage display
- c) Difference between cDNA and genomic DNA library
- d) Vectors for cloning in yeast

SECTION-II

Q.5 Elaborate on principle and applications of any **TWO** of the following: (10)

- a) Sanger's method of DNA sequencing
- b) Si RNA technology
- c) Site directed mutagenesis.

P.T.O.

Q.6 Briefly explain the principle of any **FOUR** of the following techniques: (10)

- a) SSCP
- b) DGGE
- c) ASA
- d) SOEing
- e) Cloning of PCR products

Q.7 Explain in detail any **TWO** of the following: (10)

- a) Gene therapy for inherited diseases.
- b) Different types of DNA polymerases and reactions catalyzed by them.
- c) Differential gene expression.

Q.8 Explain in brief any **FOUR** of the following: (10)

- a) q-PCR
- b) Hot start PCR
- c) RT-PCR
- d) Multiplex PCR
- e) Touch down PCR.

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Day: Thursday
Date: 15-10-2015

Time: 10.00 A.M. To 1.00
Max. Marks: 60 P.M.

N.B.:

- 1) **Q. No. 1 and Q. No. 5** are **COMPULSORY** Out of remaining attempt any **TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION-I

- Q.1** Answer any **FIVE** of the following: (10)
- a) Coagulase test
 - b) BCG vaccine
 - c) Satellitism
 - d) Standard tests for syphilis
 - e) Diphtheria toxin.
 - f) Cutaneous anthrax
- Q.2** Answer the following questions: (10)
- a) Laboratory diagnosis of UTI.
 - b) Laboratory diagnosis of Gas gangrene.
- Q.3** Describe the morphology cultural characteristics, biochemical reactions and pathogenicity of Mycobacterium tuberculosis and add a note on laboratory diagnosis of Tuberculosis. (10)
- Q.4** Answer the following: (10)
- a) Describe the laboratory diagnosis of Bacterial pneumonia.
 - b) Describe the laboratory diagnosis of Enteric fever.

SECTION-II

- Q.5** Answer any **FIVE** of the following: (10)
- a) Gametocytes of Plasmodium falciparum.
 - b) Dracunculus medinensis.
 - c) Antigenic shift and antigenic drift.
 - d) Classification of fungal infections.
 - e) Structure of Rabies virus.
 - f) Trichomonas vaginalis.
- Q.6** Answer the following: (10)
- a) Discuss the pathogenicity and laboratory diagnosis of E-B virus.
 - b) Discuss the pathogenicity and laboratory diagnosis of Cryptococcosis.
- Q.7** Describe the morphology, life cycle and pathogenicity of Ancylostoma duodenale. Add a note on its laboratory diagnosis. (10)
- Q.8** Answer the following: (10)
- a) Laboratory diagnosis of Kala-azar.
 - b) Laboratory diagnosis of Hydatid disease