

PGIIS- 1561 B-18
M.Sc. III Semester Degree Examination
BIO CHEMISTRY
(Immunology)
Paper - HCT 3.2

Time : 3 Hours**Maximum Marks : 80**

Instruction: Answer Question No.1 and any four of the remaining.

1. Answer the following: (2×10=20)
- a) What is opsonization? Name few opsonins.
 - b) What is antibody dependent cell mediated cytotoxicity?
 - c) What are secondary lymphoid organs? Name them.
 - d) Distinguish between precipitation and agglutination reactions of antibodies.
 - e) Name any two pro-inflammatory and anti-inflammatory cytokines.
 - f) What are haptens?
 - g) How would you identify B and T lymphocytes in the blood?
 - h) Give the salient features of germ line theory.
 - i) What is SCID?
 - j) What is passive immunity? Give an example.
- (4×15=60)
2. a) Describe how phagocytosis play a role in the elimination of pathogens in innate immunity.
- b) Discuss the development of T and B lymphocytes. (8+7=15)
3. a) Give a detailed account on the T and B cell interaction in antibody production.
- b) Explain the general structure of an antibody. Add a note on immunoglobulin variants (7+8=15)
4. a) Describe the classical pathway of complement activation. Add a note on the effector functions of complement activation.
- b) Explain the principle and types of ELISA. Add a note on applications of sandwich ELISA. (8+7=15)

- 5. a) Describe the mechanism of antibody heavy chain gene re-arrangement.
b) Explain the structure and functions of MHC proteins.
c) Explain the mechanism of type I allergy. (7+4+4=15)
- 6. a) Discuss the processing and presentation of intracellular antigens.
b) Distinguish between primary and secondary immune responses.
c) What are monoclonal antibodies? Give their uses. (7+4+4=15)
- 7. Write short notes on any three of the following (3×5=15)
 - a) Tissue transplantation
 - b) Immunofluorescence
 - c) Tissue matching
 - d) Vaccines



PGIIS- 1560 B-18
M.Sc. III Semester Degree Examination
BIO CHEMISTRY
(Metabolism-II)
Paper - HCT 3.1

Time : 3 Hours

Maximum Marks : 80

Note:

Answer Question No.1 and any four of the remaining.

1. Answer the following: (2×10=20)
- a) Explain the role of ACP in fatty acid metabolism.
 - b) What is carnitine? How is formed?
 - c) What is nonoxidative deamination?
 - d) What are keto and glucogenic aminoacids?
 - e) What is xanthuria? How is it treated?
 - f) How is glutathione biosynthesized?
 - g) How is serine formed from 3-phosphoglycerate?
 - h) Explain the reason for maple syrup disease.
 - i) Give the reaction for the conversion of tryptophan to indole 3acetic acid.
 - j) What is the ation of Azaserine?
2. a) Describe the oxidation of C16 fatty acid in the animal system and calculate its energetic. (7+8=15)
- b) Explain the steps involved in the biosynthesis of palmitic acid in cell. (7+8=15)
3. a) Explain the mechanism of biological nitrogen fixation. (7+8=15)
- b) Describe the detoxification of ammonia by the animal cell. (7+8=15)
4. a) Outline the steps involved in the catabolism of C3 family of amino acids. (7+8=15)
- b) Describe the catabolic pathways of methionine. (7+8=15)
5. a) Explain the biosynthetic pathways for Phyenyl alanine and tyrosine from prephenate. (7+8=15)
- b) Give an account of regulation of amino acid biosynthesis. (7+8=15)
6. a) Describe the regulation of purines biosynthesis. (7+8=15)
- b) How are pyrimidine nucleotides biosynthesized in E.Coli. (7+8=15)
7. Write notes any three of the following (3×5=15)
- a) Cholesterol biosynthesis.
 - b) Metabolism of one carbon compounds.
 - c) Heme catabolism.
 - d) Antifolate drugs.

PGIIS- 1562 B-18
M.Sc. III Semester (CBCS) Degree Examination
BIO CHEMISTRY
(Clinical Biochemistry and Hormones I)
Paper - SCT 3.1

Time : 3 Hours

Maximum Marks : 80

*Instructions to candidates:**Answer Question No.1 and any four of the remaining.*

1. Answer the following: (10×2=20)
- a. What is ESR? Give its significant.
 - b. What is molecular basis of Sickle Cell Anaemia? Where is it prevalent?
 - c. Give composition of kidney stones. How can the stones be dissolved?
 - d. What is Van den Bergh reactions? Mention its significance.
 - e. Define the term Ketosis and Ketolysis. Give structure of any two ketone bodies.
 - f. What is glycated haemoglobin? Give its significance.
 - g. How do you classify hormones?
 - h. Mention the names of Gastro intestinal hormones.
 - i. What are proto oncogenes?
 - j. Mention the role of calmodulin. (4×15=60)
2. a. Give an account on total and differential blood counting.
- b. Discuss mechanism and regulation of blood coagulation. (7+8=15)
3. a. What are various Kidney diseases? Explain.
- b. Give clinical significance of SGOT and SGPT. (7+8=15)
4. a. Describe different types of jaundice? How do you differentiate between these in Laboratory.
- b. Discuss molecular bases of Hepatitis A and B. (8+7=15)
5. a. What are disorders of thyroid hormones? How do you diagnose them.
- b. Discuss mechanism of action of Steroid hormones.
- c. Discuss biological role of vasopressin and oxytocin. (5+5+5=15)

6. a. Discuss general mechanism of cell signalling.
b. What is carcinogenesis? Add a note on oncogenes and tumour suppressing genes.
c. Mention characteristic of apoptotic cells? Add a note on role of caspases. (5+5+5=15)
7. Write notes on any three of the following: (3×5=15)
a. Diabetes mellitus
b. Hyper cholesterolemia
c. Intestinal hormones
d. Proto-oncogenes

