APRIL 1991

411

(Non-Clinical Subjects)

M.Sc. DEGREE EXAMINATION IN THE FACULTY OF MEDICINE FOR SCIENCE GRADUATES, APRIL 1991.

Branch III — Biochemistry

Final

Paper I — PHYSICAL AND ORGANIC ASPECTS OF BIOCHEMISTRY

Time : Three hours.

Answer any FIVE questions.

All questions carry equal marks.

1. Discuss the structure and organisation of Ribonucleic acids.

2. Name the buffers of the body. Describe the properties of important buffers and their physiological significance.

3. Describe the structure and properties of biological membranes. Discuss the transport across them.

4. Discuss the principles of chromatography. Briefly write on their use in clinical biochemistry.

5. Describe the chemistry and estimation of
   (a) Vitamin A.
   (b) Vitamin B_{12}.
   (c) Thyroxine.
   (d) Insulin.

6. Discuss the structure and properties of
   (a) Mucopolysaccharides.
   (b) Phospholipids.

7. Discuss the principles and application of
   (a) Ion selective electrode.
   (b) ELISA technique.

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MARCH 1992

M.Sc. DEGREE EXAMINATION, MARCH 1992.

(Non-Clinical — Subjects for Science Graduates)

Branch III — Biochemistry — Final

Paper I — PHYSICAL AND ORGANIC ASPECTS OF BIOCHEMISTRY

Time : Three hours. Maximum : 100 marks.

Answer any FIVE questions.

All questions carry equal marks.

1. Describe the structure of immunoglobulins. Discuss the immunological techniques used in clinical biochemistry.

2. Discuss the principles and their use in clinical biochemistry.

(*a*) Osmolality.

(*b*) Iso-electric focussing.

(*c*) Atomic absorption spectrophotometry.

(*d*) DNA Probes.

3. Write notes on :

(*a*) Triplet code.

(*b*) Cytochromes.

4. Discuss the physical and chemical properties of proteins.

5. Write briefly on :

(*a*) Spectrophotometry.

(*b*) High performance liquid chromatography (HPLC).

6. Describe the structure and properties of

(*a*) Glycogen

(*b*) Haemoglobin.

7. Discuss the principles of various types of electrophoresis and their application in clinical biochemistry.

APRIL 1993

1187

M.SC (NON CLINICAL) DEGREE EXAMINATION

FINAL BR II BIOCHEMISTRY

PAPER I PHYSICAL AND ORGANIC ASPECT AND BIOCHEMISTRY

Time: Three hours Max.marks: 100

Answer ALL questions

All Questions Carry EQUAL marks

1. Describe the principles involved in H.P.L.C. Write briefly on its application. (25)

2. How will you determine the sequence of aminoacids in a given protein? (25)

3. How will you determine the structure of LD glucose? (25)

4. Write notes on:

   1. D.N.A. probe

   2. Ion selective electrodes

   3. affinity chromatography

   4. pulsed field gel electrophoresis

   5. Gibbs Donnan equilibrium (5 x 5 = 25)

NOVEMBER 1993

PR 463

M.SC (NON CLINICAL) DEGREE EXAMINATION

FINAL BRANCH III BIOCHEMISTRY

PAPER I PHYSICAL AND ORGANIC ASPECT AND BIOCHEMISTRY

Time: Three hours Max.marks:100

Answer All Questions

All Questions Carry Equal Marks

1. Describe the structure of D.N.A as understood today. What do you understand by the term semi constructive replication of D.N.A? (25)

2. Describe the physico chemical principles involved in Carriage and dissociation of oxygen by hemoglobin. (25)

3. Describe the structure of Cell membrane. What are its Constituents and how they help in transport of molecules across the membrane? (25)

4. Write notes on:

   a. Blood gas analysis
   b. Gel exclusion chromatography
   c. Osmolality
   d. Density gradient Centrifugation
   e. Isotopic dilution (5 x 5 = 25)

APRIL 1995

SB 324

M.Sc. (Non-Clinical)DEGREE EXAMINATION

FINAL

Branch III BIOCHEMISTRY

Paper I - Physical and Organic aspests of Biochemistry

Time: Three hours Max. Marks: 100

Answer All Questions

1.Describe the techniques used for the determination of primary structure of proteins . Add a note on the structure activity relationship in the case of insulin. (25)

2.Decsribe the fluid mosaic model for membrane structure with special reference to inner mitochondrial membrane.Explain the chemiosmotic mechanism of oxidative Phosphorylation. (25)

3. Write short notes on :

a) Student 't' test
b) Glycosamino glycons
c) Geometrical Isomerism
d) Structure of Immunoglobulins
e)Cytochrome P 450

(5 X 10 =50)

APRIL 1997

MP 286

M.Sc.(Non-Clinical) DEGREE EXAMINATION

Branch III - Biochemistry

Final

Paper I - PHYSICAL AND ORGANIC ASPECTS OF BIOCHEMISTRY

Time: Three hours Max. marks: 100

Answer All Questions.

1. Elucidate the primary structure of Insulin. Write a note on the finger printing technique utilised for the analysis of the structure of insulin. (25)

2. Describe in detail Paper Electrophoresis and its application in clinical chemistry. (25)

3. Write briefly on:

   (a) Mucopolysaccharides

   (b) Structure of Cyanocobalamine

   (c) Prostaglandins

   (d) Plasma Buffers

   (e) Purine nucleotides.

(5x10=50)

APRIL 2000

[228]

M.Sc. (Non–Clinical) DEGREE EXAMINATION.

Branch III — Biochemistry

Final

Paper I — PHYSICAL AND ORGANIC ASPECTS OF BIOCHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Discuss the structure of Watson–Crick model of DNA giving experiments done to support this structure. Compare and contrast DNA and RNA. Give the biological role of Okazaki fragments. (25)

2. Discuss the structure of proteins and describe the procedure for sequence analysis of amino acids in their primary structure. (25)

3. Write briefly on : (5 × 10 = 50)

(a) Functional classification of proteins with an example for each class.

(b) Henderson–Hasselbalch's equation and its biochemical applications.

(c) Radioisotopes and their biological applications.

(d) Differences between glycoproteins and mucopolysaccharides.

(e) PAGE (Poly acrylamide gel electrophoresis) and isoelectric focusing and their applications.

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