013

SECOND B.Pharm. EXAMINATION, APRIL 1990

BIOCHEMISTRY

Time : Two hours Maximum : 100 marks

(i) Answer any SIX questions of which Questions 4 and 8 compulsory.

(ii) Answers to questions should be brief and to the point.

1. Classify enzymes. Discuss the factors affecting enzyme activity. Give two examples for competitive inhibition of enzymes. (16 marks)

2. Enumerate the vitamins of B Complex group. Illustrate with suitable examples the co-enzyme functions of pyridoxine and riboflavin. (16 marks)

3. What are the general principles of chromatography. Mention the different methods of chromatographic separation of compounds. Add a note on the application of thin layer chromatography in biochemistry. (16 marks)

4. Write briefly on any *three* of the following :

(*a*) Sodium pump.

(*b*) Transfer R.N.A. (*t* RNA).

(*c*) Sphingomyelin.

(*d*) Immunoglobulins. (3×6=18 marks)

5. Give an account of citric acid cycle. Discuss its significance and energy value. (16 marks)

6. How are foodstuffs digested in the gastrointestinal tract ? What is the role of bile in the digestion and absorption of dietary fat ? (16 marks)

7. What is the normal plasma calcium level ? Briefly discuss the metabolism of calcium and phosphorus in human body. (16 marks)

8. Write briefly on any *three* of the following :

(*a*) Prostaglandins.

(*b*) Methionine.

(*c*) pH.

(*d*) Benedict's test. (3×6=18 marks)

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OCTOBER - 1990

013

SECOND B.Pharm. DEGREE EXAMINATION,
OCTOBER 1990.

Paper I — BIOCHEMISTRY

Time : Two hours. Maximum : 100 marks.

Answer SIX questions.

Questions No. 1 and 5 are compulsory.

Answers to questions should be brief and to the point.

1. Classify enzymes. Discuss the factors affecting enzyme activity. Give two examples for competitive inhibition of enzymes. (18 marks)

2. Enumerate the vitamins of B complex group. Illustrate with suitable examples the co-enzyme functions of pyridoxine and riboflavin. (16 marks)

3. What are the general principles of chromatography ? Mention the different methods of chromatographic separation of compounds. Add a note on the application of thin layer chromatography in biochemistry. (16 marks)

4. Write briefly on :

(*a*) Sodium pump.

(*b*) Transfer R.N.A. (*t*-RNA).

(*c*) Sphingomyelin.

(*d*) Immunoglobulins. (4 × 4 = 16 marks)

5. Give an account of citric acid cycle. Write about its significance and energy value. (18 marks)

6. How are food stuffs digested in the gastrointestinal tract ? What is the role of bile in the digestion and absorption of dietary fat ? (16 marks)

7. What is the normal plasma calcium level ? Briefly discuss the metabolism of calcium and phosphorous in human body. (16 marks)

8. Write briefly on :

(*a*) Prostaglandins.

(*b*) Methionine.

(*c*) pH.

(*d*) Benedict's test. (4 × 4 = 16 marks)

APRIL - 1991

038

SECOND B. PHARM. DEGREE EXAMINATION, APRIL 1991.

Paper I — BIOCHEMISTRY

Time : Three hours. *Maximum . 100 marks.*

Answer ALL questions.

1. Give a classified test of aminoacids used for protein biosynthesis. (17 marks)

2. Describe the coenzyme role of B complex vitamins. (17 marks)

3. Write short notes on :
   (a) Iodine.
   (b) Ketone bodies
   (c) Alkaptonuria
   (d) Genetic code. (4×4=16 marks)

4. Outline the steps in the Beta Oxidation of fatty acids. (17 marks)

5. What is the normal blood glucose level ? How is it maintained ? (17 marks)

6. Write short notes on :
   (a) Chylomicrons
   (b) Bilirubin
   (c) Antimetabolites
   (d) Serotonin. (4×4=16 marks)

APRIL - 1993

[RS 536]

SECOND B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Give structural formulae and draw diagrams wherever necessary.

1. Classify aminoacids. Write down the chemical and physical properties of amino acids. (17)

2. Write in detail the chemistry, source, requirement, functions and the deficiency manifestations of Vitamin B_{12}. (17)

3. Write short notes on : (4 x 4 = 16)

(a) Serum electrolytes.

(b) Essential fatty acids.

(c) Glucose tolerance test.

(d) Hemoglobin.

4. Write down the biochemical functions and biochemical mode of actions of Thyroxine. (17)

5. Give an account of digestion and absorption of lipids from the gasterointestinal tract. (17)

6. Write short notes on : (4 x 4 = 16)

(a) Nucleoprotein.

(b) Allosteric inhibition of enzymes.

(c) Beri Beri.

(d) Blood urea.

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APRIL - 1993

[R S 5 4 1]

SECOND B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours. Maximum : 90 marks.

Two and a half hours for Sections A and B. Sections A and B : 60 marks.

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Describe the steps of β-oxidation of Palmitic acid and enumerate the energetics involved in it.

2. Describe the catabolic pathway of Tyrosine. Mention the probable sites of metabolic defects.

3. Write an essay on the sources, chemical nature, biochemical functions and deficiency manifestations of Thiamin.

4. Write an essay on the Liver function Tests.

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any six of the following :

(a) Active methionine.

(b) HDL Cholesterol

(c) Significance of HMP pathway.

(d) Alkaptonuria.

(e) Trace elements.

(f) Calcitriol.

(g) Non protein nitrogenous compounds.

(h) Glycosides.

(i) Thirn layer chromatography.

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NOVEMBER - 1993

[PR 153]

SECOND B.Pharm. DEGREE EXAMINATION.

(Old Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours Maximum : 100 marks

Answer ALL questions.

Give structural formulae and draw diagrams wherever necessary.

1. Write in detail the T.C.A. cycle and its functions. (17)

2. Name the water soluble vitamins, their coenzymes and the deficiency diseases. (17)

3. Write short notes on : (4 × 4 = 16)

   (a) Calcium.

   (b) Genetics.

   (c) Electrophoresis.

   (d) Essential aminoacids.

4. Write in detail the mechanism of action of Insulin and its functions on metabolism. (17)

5. Give a detailed account of transport of molecules across the biomembranes. (17)

6. Write short notes on : (4 × 4 = 16)

   (a) tRNA.

   (b) Glycogen.

   (c) Rickets.

   (d) Liposome.

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NOVEMBER - 1993

[P R 158]

SECOND B.Pharm. DEGREE EXAMINATION.

(New Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours. Maximum : 90 marks.

Two and a half hours
for Sections A and B Sections A and B : 60 marks.

Answer Sections A and B in separate answer books.
Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Write an essay on the role of Pyridoxin in amino acids metabolism.

2. Describe the sequence of steps involved in the conversion of liver glycogen to glucose. Mention the probable sites of metabolic defects.

3. Describe the synthesis and utilization of ketone bodies. Mention the tests to detect them in urine.

4. Discuss in detail the pancreatic and intestinal digestion of food.

[P R 158]

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following :

(a) Active transport.

(b) Essential fatty acids.

(c) Physiologically active peptides.

(d) Galactosemia.

(e) Synthesis of creatinine.

(f) Vitamin E.

(g) Messenger RNA.

(h) Structure of Insulin.

(i) Urobilinogen.

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SB 572

SECOND B.Pharm DEGREE EXAMINATION

(Old Regulation)

Paper I - BIOCHEMISTRY

Time: Three hours Maximum: 100 Marks

Answer ALL Questions

Give structural formulae and draw diagrams wherever necessary.

1. Write in detail digestion and absorption of Lipids. (17)

2. Give the structure, functions, deficiency, manifestation, sources and daily requirement of Pyridoxine. (17)

3. Write short notes on:

   (a) Copper

   (b) Gangliosides

   (c) Essential Fatty acids

   (d) Magnesium (4 x 4 = 16)

4. Write in detail the mechanism of action of Growth Hormone and its functions on Lipid Metabolism. (17)

SB 572

5. Give a detailed account of transport of various nutrients across the biomembrane. (17)

6. Write short notes on

   (a) t - RNA

   (b) Epimer

   (c) Dietary fibre

   (d) Gout

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APRIL - 1995

[SB 577]

Second B. Pharm Degree Examination

(New Regulations)

Paper 1 — BIOCHEMISTRY

Time : Three hours Maximum : 90 marks

Two and a half hours for Sections A and B Sections A and B : 60 marks

Answer sections A and B in separate answer books

Answer Section C in the answer sheet provided

SECTION A

(2×15 = 30)

Answer any TWO questions

1. Name the water soluble vitamins. Write the chemistry, sources, biochemical functions, daily requirements and deficiency diseases of vitamin Niacin.

2. What are enzymes. Give the IUB classification of Enzymes with examples.

3. Describe the synthesis of cholesterol. Mention the normal serum levels of cholesterol.

4. Describe briefly the steps of TCA cycle and mention its importance.

SECTION—B

(6×5 = 30)

5. Write briefly on any SIX of the following:

   a) Essential amino acids
   b) Biological functions and requirements of Iron
   c) Benedict's qualitative test
   d) Calorific value of various food substances
   e) Structure of DNA
   f) Acetyl COA
   g) Scurvy
   h) Km value of an enzyme
   i) Urea clearence test

APRIL - 1995

[SB 582]

Second B. Pharm. Degree Examination

(Revised Regulations)

Paper I - BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours for Section A and B — Sec. A and B : 60 marks

Answer Section A and B in separate Answer Books.

Answer Section C in the answer sheet provided

SECTION—A (2×15=30)

Answer any TWO questions.

1. Describe the sources, functions, daily requirement and deficiency diseases of vitamin A.

2. Give an account of biochemical functions and metabolism of iron.

3 What are proteins ? How are they classified ? Describe briefly their digestion and absorption.

4. Describe the pentose phosphate pathway of carbohydrate metabolism and its significance.

SECTION—B [6×5=30]

5. Write briefly on any SIX of the following

a) Epinephrine

b) Vitamin B12

c) Proteolytic enzymes of GIT

d) Metabolic acidosis

e) Insulin

f) Enzyme specificity

g) Urea clearance test

h) DNA

i) Mucopolysaccharides

NOVEMBER - 1995

[MB 710]

Second B. Pharm Degree Examination

Common to (Old / New / Revised Regulations)

Paper I - BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks
Two and a half hour for Sec. A and B — Sec. A and B : 60 marks

Answer Sections A and B in separate answer books
Answer Section C in the answer sheet provided (For NR and RR only)

SECTION - A (2×15=30)

Answer any TWO questions

1. Write the chemistry, assay, sources, deficiency symptoms, biochemical functions and requirement of Vitamin A.

2. Describe the structure and functions of various Phospholipids.

3. Describe the glycolytic pathway.

4. Describe tha synthesis and functions of Thyroid hormones.

SECTION—B (6×5=30)

5. Write briefly on any Six of the following :

   a) Homopolysaccharides

   b) Phospholipids

   c) Glycoproteins

   d) Nitrogen balance

   e) Heme enzymes

   f) Vitamin K

   g) Amylase

   h) Immunoglobulins

   i) Uric acid

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APRIL - 1996

[AK 710] Subject Code : 4171

Second B. Pharm Degree Examination

(Common to New / Revised Regulations)

Paper I - BIOCHEMISTRY

Time : Three hours. Maximum 90 marks.

Two and a half hours

for Section A and B Sec. A and B : 60 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION – A (2×15 = 30)

Answer any TWO questions

1. What is urea ? Describe the synthesis of urea in the body.

2. Define enzyme. What is the mechanism of their action ? Describe the factors which influence enzyme action.

3. Describe the chemistry, sources, biological functions, daily requirements and deficiency manifestations of Vitamin D.

4 Describe the glycolytic pathway.

SECTION – B (6X5 = 30)

5. Write briefly on any SIX of the following :

a) Classification of carbohydrates

b) Thyroxine

c) Phospholipids

d) Hemoglobin

e) Antimetabolites

f) Plasma proteins

g) RNA

h) Glycogenesis

i) Balanced diet

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APRIL - 1996

AK 716

SECOND B. PHARM DEGREE EXAMINATION

(Old Regulation)

PAPER I - BIOCHEMISTRY

Time: Three hours Maximum: 100 Marks

ANSWER ALL QUESTIONS

1. Describe the sources, chemistry, biological functions, daily requirement and deficiency diseases of vitamin D. (17)

2. Describe the digestion and absorption of Carbohydrates. (17)

3. Write short notes on:

   a) Coenzymes

   b) Liver function tests

   c) Vitamin C

   d) Protein deficiency (4 x 4 = 16)

4. Describe the chemistry of nucleic acids. Mention the role of nucleic acids in biosynthesis of proteins. (17)

AK 716

5. Describe Urea cycle and give its metabolic significance. (17)

6. Write short notes on:

   a) Thyroxine

   b) Enzyme inhibition

   c) Essential fatty acids

   d) Regulation of blood calcium level.

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OCTOBER - 1997

[MS 706] **Sub. Code : 4171**

SECOND B.Pharm. DEGREE EXAMINATION.

(Common to New/Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Describe the metabolism of Tyrosine and Phenyl alanine. Discuss briefly the biologically active compounds formed from these amino acids.

2. Describe the synthesis of Glycogen and discuss its control.

3. Describe the metabolism of Ketone bodies.

4. Discuss how Calcium is maintained in plasma.

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following :

   (a) Liposomes.

   (b) Mechanism of action of peptide hormones.

   (c) Significance of HMP pathway.

   (d) Messenger RNA.

   (e) Genetic code.

   (f) Substrate level phosphorylation.

   (g) Enzyme inhibitors.

   (h) FIGLU.

   (i) Action of Vitamin K.

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APRIL - 1998

[SV 706] **Sub. Code : 4171**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Sec. C : 30 marks

Answer Section A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Define the term Vitamin and discuss the chemistry, sources, biochemical role, deficiency disorders and requirement of Vitamin A.

2. Define Enzyme. What is the mechanism of action of enzymes and describe the factors influencing the enzyme action?

3. Describe the digestion and absorption of Lipids.

4. Describe the synthesis and functions of Thyroid hormones.

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following.
   (a) Electrophoresis
   (b) Gluconeogenesis
   (c) Glucose Tolerance Test
   (d) Biochemical role of Folic Acid
   (e) Metabolic disorders of Aromatic Aminoacids
   (f) Phospholipids
   (g) Oxidative phosphorylation
   (h) Prosta Glandins
   (i) Immunoglobulins.

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OCTOBER - 1998

[SM 706] **Sub. Code : 4171**

SECOND B.Pharm. DEGREE EXAMINATION.

(Common to New/Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. What do you mean by Beta Oxidation? Write down its steps and biological significance.

2. What are the fat soluble vitamins? Name them. Write in detail the role of Vit. D in the body.

3. Name the ketone bodies. How are they metabolised and its clinical significance?

4. What are the hydrolytic products of the proteins? How will you detect them in the laboratory?

SECTION B — (6 × 5 = 30 marks)

Answer only SIX questions.

5. (a) Nyctalopia.
   (b) Bile Salts.
   (c) Lipotropic factors.
   (d) Amino acids.
   (e) NPN substances.
   (f) Classification of Disaccharide and its detection.
   (g) Osazones.
   (h) Km value of enzyme.
   (i) Paper electrophoresis.
   (j) Haemolytic Jaundice.

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APRIL - 1999

[SG 706] **Sub. Code : 4181**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours for Sec. A and Sec. B — Sec. A & Sec. B : 60 marks; Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are proteins? Classify them with examples. (5)

(b) Outline the steps involved in the biosynthesis of proteins. (10)

2. (a) What are Vitamins? Classify them with examples. Describe the chemistry, sources, biochemical role, deficiency disorders and daily requirement of Vitamin C. (11)

(b) Give the structure and biochemical functions of TPP. (4)

3. (a) Outline the reaction in the conversion of pyruvate to acetyl CoA. (4)

(b) Describe citric acid cycle and add a note on energy aspects of the cycle. (11)

4. (a) What are lipids? Classify them with examples. Write a note on essential fatty acids. (6)

(b) Outline the biosynthesis of cholesterol storting from acetyl CoA. (9)

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following :

(a) Competition enzyme inhibition.

(b) Significance of Liver function tests.

(c) Essential amino acids.

(d) DNA structure.

(e) Role of insulin in regulating blood glucose.

(f) Respiratory chain reactions.

(g) Effect of pressure and temperature on enzyme activity.

(h) Constituents of blood.

(i) β–oxidation of fatty acids.

OCTOBER - 1999

[KA 706] **Sub. Code : 4181**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Section C : 30 marks

Answer Sections A and B in separate answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Explain the reactions involved in the Tricarboxylic Acid Cycle and discuss its significance.

2. Describe the hormonal regulation of blood sugar in health and disease.

3. Write the classification of amino acids with examples and explain the colour reactions of amino acids.

4 Define the term coenzyme and explain with two specific metabolic reactions for each the biochemical role of any five coenzymes.

SECTION B — (6 × 5 = 30 marks)

5. Write short notes on any SIX :
   (a) Mucopolysaccharides.
   (b) Sodium pump.
   (c) Wald cycle.
   (d) Clinically important isoenzymes.
   (e) Competitive inhibition.
   (f) Van der Bergh Reaction and its significance.
   (g) Trace elements.
   (h) Types of RNA.
   (i) Basal metabolic rate.

APRIL - 2000

[KB 706] **Sub. Code : 4181**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Section C : 30 marks

Answer Sections A and B in separate Answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Classify proteins. Write briefly on the structure of the proteins. (5)

(b) Describe the major pathway of excretion of nitrogen as Urea in humans. (10)

2. (a) Name the B complex vitamins. Write briefly on its biochemical role. (5)

(b) Discuss the source, requirement, biochemical role and deficiency manifestations of Vitamin C. (10)

3. (a) What are polysaccharides? Give examples. (5)

(b) Discuss how glucose is stored as glycogen in animals. (10)

4. (a) What are essential fatty acids? Name them. (5)

(b) Write briefly how one molecule of palmitic acid is completely oxidised and the number of ATP produced during the process. (10)

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following :

(a) Competitive inhibition

(b) Hormones influencing blood sugar level

(c) Thymine pyrophosphate

(d) Electron transport chain

(e) Benedict's qualitative test

(f) Phenylketonuria

(g) Bile acids

(h) Sickle cell anaemia

(i) Uric acid.

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OCTOBER - 2000

[KC 706] **Sub. Code : 4181**

SECOND B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper I — BIOCHEMISTRY

Time : Three hours — Maximum : 90 marks

Two and a half hours — Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B — Section C : 30 marks

Answer Sections A and B in separate Answer books.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are Carbohydrates %? How are they classified? Give examples. (5)

(b) Describe the Aerobic Glycolysis of glucose. State how many ATP is produced when one molecule of glucose is completely Oxidised. (10)

2. (a) What are Fat Soluble Vitamins? Name them. (5)

(b) Describe the chemistry, source, daily requirement, biochemical role and deficiency disorders of Vitamin D. (1 + 1 + 1 + 4 + 3 = 10)

3. (a) Describe briefly the enzymes involved in the digestion of proteins. (5)

(b) What are essential amino acids? Name them. Describe the metabolism of tyrosine. Add a note on Alkaptonuria. (1 + 2 + 4 + 3 = 10)

4. (a) What are Ketone bodies? Add a note on the clinical conditions it is detected and how it is detected. (2 + 3 + 3 = 8)

(b) What are phospholipids? What is its functions? (3 + 4 = 7)

SECTION B — (6 × 5 = 30 marks)

5. Write briefly on any SIX of the following :

(a) Hydrolysis of starch

(b) Pyridoxal phosphate

(c) Clinical significance of enzyme estimation

(d) Harmones influencing calcium and phosphorous level in blood

(e) Basal Metabolic Rate

(f) Enzyme specificity

(g) Gluconeogenesis

(h) Normal constituents of urine

(i) Primary structure of protein.