

APRIL 1994

338

B.Sc., (MEDICAL LABORATORY TECHNOLOGY)

FIRST YEAR

Paper IV Physics and Principles of
Instrumentation.

Time: Three hours

Max. marks: 100

Answer ALL Questions.

1. Write an essay on Kinetic theory of gases. (25)
2. Write an essay on Spectrophotometer, refrigerators
pH meter and Flame photometer. (25)
3. Write short notes on:
 - a. Viscosity of fluids and Osmosis
 - b. Lenses and filters
 - c. Compound microscope and polarizing effect
 - d. Ohm's Law and Kirchoff's Laws
 - e. Photo electric emission and principles
of diodes.

(5 x 10 = 50)

APRIL 1995

SB 789

B.Sc., (MEDICAL LABORATORY TECHNOLOGY)

FIRST YEAR

Paper IV Physics and Principles of
Instrumentation.

Time: Three hours Max.Marks : 100

Answer ALL Questions.

1. Write an essay on Kinetic theory of gases. (25)
 2. Write an essay on Spectrophotometer, Colorimeter and Flame Photometer. (25)
 3. Write short notes on: (5 x 10 = 50)
 - (a) Spherical and chromatic aberrations in lenses.
 - (b) Phase contrast microscope and electron microscope
 - (c) Water bath and Distillation apparatus.
 - (d) Ohm's law and Kirchoff's laws.
 - (e) Use of Transformers and Stabilizers.
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MB 874

NOVEMBER 1995

B.Sc. (MEDICAL LABORATORY TECHNOLOGY)

FIRST YEAR

Paper-IV Physics and Principles of
Instrumentation

Time: Three hours

Max.Marks: 100

Answer ALL Questions

1. a) State the laws of diffusion and osmosis (5)
b) Describe in detail an experimental method to find viscosity of body fluids.(8)
c) State the basic assumptions of kinetic theory of gases and explain how it is used in explaining transport properties.(12)
2. a) Write in short the basic principle of Electron Microscope and explain briefly the functioning. (15)
b) What are the specific uses of phase contrast and polarising microscopes. (10)
3. Write brief and short notes on the following: (5x10=50)
 - (i) Autoclave and its uses
 - (ii) Transformers and stabilisers
 - (iii) Sensitivity of the balance and care of the balance
 - (iv) Rectifiers and their uses
 - (v) Incubator and hot air oven

APRIL 1996

[AK874]

B.Sc. (MEDICAL LABORATORY TECHNOLOGY)
DEGREE EXAMINATION.

First Year

Paper IV — PHYSICS AND PRINCIPLES OF
INSTRUMENTATION

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Define 'mass' and 'specific gravity'. Write an essay on properties of matter. (25)
 2. What is a spectrum? Define focal length, wavelength and magnification. What are the important defects in the formation of images by lenses. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Viscosity and its application in human body.
 - (b) Electron microscope and its applications.
 - (c) Autoclave and its uses.
 - (d) Centrifuge and its uses.
 - (e) Diodes and rectifiers.
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(MP 874)

APRIL 1997

B.Sc. (MEDICAL LABORATORY TECHNOLOGY)
DEGREE EXAMINATION

First Year

Paper-IV - PHYSICS AND PRINCIPLES OF
INSTRUMENTATION

Time: Three Hours

Max: 100 marks

Answer ALL Questions

1. What are the principles of diodes and rectifiers? Explain photoelectric emission and describe how it is employed in electron microscope and spectrophotometer. (25)
2. What are the requisites of a good balance. Draw and label a chemical balance. Explain the sensitivity of a balance. Describe the uses of balance and add a note on its maintenance. (25)
3. Write short notes on: (5x5=25)
 - a) Specific gravity and its uses.
 - b) Incubator.
 - c) Postulates of kinetic theory of gases.
 - d) Compound microscope.
 - e) Water bath.

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(SV 874)

APRIL 1998

B.Sc. (MEDICAL LABORATORY TECHNOLOGY)
DEGREE EXAMINATION

First Year

Paper-IV - PHYSICS AND PRINCIPLES OF
INSTRUMENTATION

Time: Three Hours

Max: 100 Marks

Answer ALL Questions

1. Elucidate the term 'Viscosity'.
How will you explain Viscosity of body fluids
Distinguish between 'Diffusion' and Osmosis.

State postulates of kinetic theory of gases. (25)
2. Write an essay on Microscopes.
Distinguish between optical microscope and electron microscope.
What are their advantages and disadvantages (25)
3. Write Short Notes on: (5x10=50)
 - a) Units and measurements
 - b) Spherical and chromatic aberration.
 - c) Use of transformers and stabilizers.
 - d) Refrigerators
 - e) Flame Photometers.

APRIL 1999

[SG 874]

Sub. Code : 5004

**B.Sc. (Medical Laboratory Technology) DEGREE
EXAMINATION.**

First Year

**Paper IV — PHYSICS AND PRINCIPLES OF
INSTRUMENTATION**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Define 'wave length' and 'focal length'. What is a spectrum? Explain magnification. In which type of microscope, magnification is maximum? Explain the reason for that. (25)
 2. Distinguish between A.C. and D.C. What are the uses of earthing and fuses? Write a note on the use of transformers and stabilizers. (25)
 3. Write notes on : (5 × 10 = 50)
 - (a) Use and care of the balance.
 - (b) Kinetic theory of gases.
 - (c) Centrifuge and its uses.
 - (d) Hot air oven.
 - (e) Laws of photo electric emission.
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APRIL 2000

[KB 874]

Sub. Code : 5004

**B.Sc. (MEDICAL LABORATORY TECHNOLOGY)
DEGREE EXAMINATION.**

First Year

**Paper IV — PHYSICS AND PRINCIPLES OF
INSTRUMENTATION**

Time : Three hours Maximum : 100 marks

Answer ALL questions.

1. Define 'density' and 'specific gravity'. Distinguish between mass and weight. What kind of balances are used to measure mass and weight? How mass and weight are related? (25)

2. Define the following for the microscope

(a) Magnifying power

(b) Resolving power.

Mention the various types of microscopes and uses for which they are put to use.

What are the advantages of electron microscope over optical microscope? (25)

3. Write short notes on : (5 × 10 = 50)

(a) Units and measurements

(b) Viscosity of body fluids

(c) Postulates of kinetic theory of gases

(d) Photoelectric cell

(e) Autoclave.

NOVEMBER 2000

[KC 874]

Sub. Code : 5004

**B.Sc. (MEDICAL LABORATORY TECHNOLOGY)
DEGREE EXAMINATION.**

First Year

**Paper IV — PHYSICS AND PRINCIPLES OF
INSTRUMENTATION**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. (a) Briefly discuss the elastic properties of matter and their interrelationships. (10)
- (b) What are the basic postulates of the kinetic theory of gases? (10)
- (c) Write about the Laws of diffusion and osmosis. (5)
2. (a) Discuss the forward and reverse bias characteristics of a diode. (8)
- (b) Discuss with a necessary circuit and theory the working of a full wave rectifier. (10)
- (c) Explain the basic principles and functions of an electronic oscillator circuit. (7)

3. Write short notes on : (5 × 10 = 50)
 - (a) Sensitivities of chemical and electrical balance
 - (b) Principles of autoclaving and its uses
 - (c) Advantages of earthing and fuses in electrical connections
 - (d) Principle of the polarising microscope and its uses
 - (e) Principle and uses of Centrifuges.