

DECEMBER 2001

[KE 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. What are the normal requirements for bacterial growth? Describe the growth phases of bacteria. (25)
 2. Describe the methods of collection, transport and storage of clinical specimen for microbiological examination. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Medicolegal aspects of record keeping
 - (b) Capsular staining
 - (c) Enriched Media
 - (d) Flagella
 - (e) Phenol disinfectant.
-

APRIL 2003

[KI 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours Maximum : 100 marks
Answer ALL questions.

1. Define sterilisation and describe in detail the physical means of sterilisation. (25)
 2. Enumerate the common laboratory infections and the precautions taken while handling the infective materials. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Grams stain and its clinical applications
 - (b) Flagellum and its demonstration
 - (c) Basal media and its uses
 - (d) Growth curve
 - (e) Biostatistics in Microbiology
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NOVEMBER 2003

[KJ 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours Maximum : 100 marks

Sec. A & B : Two hours and forty minutes Sec. A & B: 80 marks

Sec. C : Twenty minutes Sec. C : 20 marks

**Section C must be answered SEPARATELY on the
answer sheet provided as per the instructions
on the first page of M.C.Q. Booklet.**

Answer Sections A & B in the SAME Answer Book.

SECTION A

- 1. Describe in detail about the structure of Bacteria.
(15)**
- 2. List five common infections. Write in detail about
specimen collection, transport and culture for any one of
the above listed infections. (15)**

SECTION B

- 3. Write short notes on : (10 × 5 = 50)**
 - (a) Hot air oven.**
 - (b) Blood culture.**
 - (c) Chocolate agar.**
 - (d) Growth curve.**
 - (e) Quality control.**
 - (f) Mean value.**
 - (g) Hanging drop method.**
 - (h) Disposal of infective material.**
 - (i) Uses of gram stain.**
 - (j) Normal flora.**

AUGUST 2004

[KL 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours Maximum : 100 marks

**Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes**

Sec. C. : Twenty minutes Sec. C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet provided.

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. List the various types of culture media with examples. Write about the preparation of blood agar. (15)
2. Define disinfection. Write in detail about chemical disinfectants and their uses. (15)

SECTION B — (10 × 5 = 50 marks)

3. Short notes : (10 × 5 = 50)

- (a) Autoclave.
- (b) Mac Conkey agar.
- (c) Enteric culture.
- (d) Robertsons cooked meat medium.
- (e) Transport medium.
- (f) India ink staining method.
- (g) Antibiotic sensitivity testing.
- (h) Mean value.
- (i) Dark ground microscope.
- (j) Sterilisation by filtration.

FEBRUARY 2005

[KM 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours Maximum : 100 marks

**Sec. A & B : Two hours and Sec. A & B : 80 marks
forty minutes**

Section C : Twenty minutes Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

- 1. Enumerate on laboratory safe practices and write briefly on universal precautions. (15)**
- 2. Write in detail on hospital waste management. (15)**

SECTION B — (10 × 5 = 50 marks)

- 3. Write short notes on :**
 - (a) Enrichment media**
 - (b) Safety cabinets in microbiology**
 - (c) ELISA**

- (d) Radiation in Sterilisation**
 - (e) Spores**
 - (f) Co-efficient of variation**
 - (g) Presumptive coliform count**
 - (h) Post exposure prophylaxis**
 - (i) Calibration of pipettes**
 - (j) Anticoagulants.**
-

AUGUST 2005

[KN 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours

Maximum : 100 marks

**Sec. A & B : Two hours and
forty minutes**

Sec. A & B : 80 marks

Sec. C : Twenty minutes

Sec. C : 20 marks

Answer Sections A and B in the SAME answer book.

Answer Section C in the answer sheet provided.

Answer ALL questions.

SECTION A — (2 × 15 = 30 marks)

1. (a) Enumerate the various components of a bacterial cell. (5)

(b) Explain the cell wall structure of gram positive and gram negative bacteria. (6)

(c) What are protoplasts and spheroplasts? (4)

2. (a) List the various specimens that are received in the microbiology laboratory. (3)

(b) How the urine specimen is collected transported and processed in the laboratory? (12)

SECTION B — (10 × 5 = 50 marks)

3. Write short notes on :

(a) Bacterial flagella

(b) Normality

(c) Soft water

(d) Standard deviation

(e) Methylene blue stain

(f) Median

(g) Normal flora in the gastro intestinal tract

(h) Crystal violet stain

(i) Separation and storage of sera

(j) Use of pipettes.

AUGUST 2006

[KP 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Time : Three hours

Maximum : 100 marks

**Descriptive : Two hours and
forty minutes**

Descriptive : 80 marks

Objective : Twenty minutes

Objective : 20 marks

Answer ALL questions.

Write essays on :

1. (a) Describe the method of collection, transport and storing of anaerobic specimens.

(b) What are the precautions to be taken to avoid Haemolysis of Blood? (20)

2. Define and classify sterilization. Discuss in detail about Autoclave and hot air oven. (2 + 4 + 9)

3. Discuss in detail about the principle and methods of Quality Assurance in Microbiology laboratory. (15)

4. Write short notes on :

(6 × 5 = 30)

(a) Disinfectants used in hospitals.

(b) Bacterial growth requirements.

(c) Blood agar.

(d) Disposal of laboratory waste.

(e) Common laboratory accidents.

(f) Normal flora of skin.

[KR 873]

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

Paper III — GENERAL METHODOLOGY

Descriptive : Two hours and forty minutes Descriptive : 80 marks

Answer ALL questions.

(1) Describe in detail the various methods of collection, transport packing and storing of specimens in a clinical laboratory.

II. Write Short notes on : (10 × 5 = 50)

- Cleaning of new glasswares.
- Standard deviation.
- Bacterial growth curve.

- (d) Calibration of pipettes.
- (e) Double distilled water.
- (f) Bacterial cell wall.
- (g) Discard of infective materials.
- (h) Gram stain Reagents.
- (i) Collection of blood specimens.
- (j) Record maintenance in the laboratory.

FEBRUARY 2008

[KS 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

**Descriptive : Two hours and
forty minutes**

Descriptive : 80 marks

Objective. : Twenty minutes

Objective : 20 marks

Answer ALL questions.

I. Essays :

(1). Draw a labelled diagram of Bacterial cell.
Compare and contrast gram positive and gram negative
cell wall. (15)

(2). Describe in detail various types of moist heat
sterilisation. Add a note on sterilisation control
procedures. (15)

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

(a) Gaseous sterilisation

(b) Bacterial spores

(c) Universal work precautions

(d) Testing of disinfectants

(e) Enrichment media

(f) Transport media

(g) Laminar Airflow

(h) Stains used for acid fast staining

(i) Cleaning of glass wares

(j) Venepuncture and collection of blood
samples.

August-2008

[KT 873]

Sub. Code : 5003

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

First Year

Paper III — GENERAL METHODOLOGY

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Essays : (2 × 15 = 30)

1. Describe preparation and staining of blood smears.
2. Write in detail on principles and methods of quality control.

II. Write Short notes on : (10 × 5 = 50)

1. Bacterial spores.
2. Types of pipettes.
3. Acid fast staining.
4. Hot air over.

5. Continuous culture of bacteria.
6. Transport medium.
7. Exotoxins.
8. Prevention of nosocomial infection.
9. Indole test.
10. Confidentiality of reports.

III. Short answers questions : (10 × 2 = 20)

1. List different shapes of bacteria.
2. Name two anticoagulant.
3. What is pasteurisation?
4. Sterilisation controls used in hot air oven.
5. List two modes of action of chemical disinfectants.
6. Mention two importance of labelling specimens.
7. List different types of pipettes used in laboratory.
8. Name any two methods used for staining blood smears.
9. List ingredients used for gram stain.
10. Mention types of water.

August - 2009

[KV 873]

Sub. Code: 5003

B.Sc. (Medical Laboratory Technology) DEGREE EXAMINATION

FIRST YEAR

Paper III – GENERAL METHODOLOGY

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Essays :

(2X15=30)

1. Define sterilization. Classify the various methods of sterilization. Write in detail about sterilization by dry heat. **(2+3+10)**

2. Define total count and viable count of bacteria. What is a bacterial growth curve? Enumerate and explain different phases of a bacterial growth curve. **(4+2+9)**

(10X5=50)

II. Write Short Notes on :

1. Autoclave.
2. Standard deviation.
3. Anticoagulants
4. Universal safety precaution.
5. Transport media.
6. Bacterial capsule.
7. Cleaning of fresh glassware.
8. Molar solution.
9. Methylene blue stain.
10. Double distilled water.

III. Short Answer Questions:

(10X2=20)

1. Write two points about safety laboratory rules.
2. What are the points to be entered in the slip when you transport the specimen to the laboratory?
3. Define anaemia.
4. What is the normal Hb% for males and females?
5. What is the temperature and time for hot air oven?
6. What is the name of sterilization method to sterilize milk?
7. Name the parts of a light microscope.
8. What is the use of parts of a light microscope?
9. Write two lines about the disposal of laboratory waste.
10. Name few records to be maintained in the blood bank.

[KX 873]

AUGUST 2010

Sub. Code: 5003

B.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Essays:

(2 x 15 = 30)

1. Describe the structure of bacteria. Add a note on the nutritional requirement.
2. Explain universal safety precaution. How will you organize and implement same in your laboratory?

II. Write Short notes on:

(10 x 5 = 50)

1. Grades of chemicals.
2. Disposal of laboratory waste.
3. Stains used for AFB.
4. Composition of Blood.
5. Gaseous disinfectants.
6. Handling of infective materials.
7. Hot air oven.
8. Sterilization of vaccines.
9. Coefficient of variation.
10. Quality control.

III. Short Answers on:

(10 x 2 = 20)

1. Preservation of blood.
2. Flagella.
3. Growth curve.
4. Intra cellular parasite and two examples.
5. Lyophilisation.
6. Phase contrast microscopy.
7. Compliment Protein.
8. Obligatory anaerobe.
9. Organ of adhesion.
10. Haemolysis.

B.Sc. (MEDICAL LABORATORY TECHNOLOGY) DEGREE EXAMINATION

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time : Three Hours

Maximum : 100 marks

Answer ALL questions

I. Elaborate on:

(3 x 10 = 30)

1. Define Sterilization. Describe in detail the chemical method of Sterilization.
2. Enumerate on Quality Assurance the application, methods and their importance in clinical laboratory.
3. Enumerate the risk factors involved in handling the infective materials.
What precautions should be taken in handling them.

II. Write notes on:

(8 x 5 = 40)

1. Nosocomial infection.
2. Transport media.
3. Computers in medical microbiology.
4. Maintenance of Bacterial culture.
5. Lyophilisation.
6. Antibigram.
7. Acid fast staining.
8. Bacterial growth curve.

III. Short Answers on:

(10 x 3 = 30)

1. What is the normal pH of blood?
2. Write few points about laboratory safety rules.
3. What are the points to be entered in the slip when you transport the specimen to the laboratory?
4. How will you transport the vaginal specimens to the laboratory?
5. What is the temperature and time for hot air oven?
6. What is the normal Hb% for males and females?
7. How will you sterilize new glass wares?
8. Write about the sterilization method of Milk.
9. Name the parts of a light microscope.
10. What is the use of dark ground microscopy?

[LB 0212]

AUGUST 2012

Sub. Code: 5003

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

(180 Mins) Answer ALL questions in the same order.

I. Elaborate on:

**Pages Time Marks
(Max.)(Max.)(Max.)**

- | | | | |
|---|---|----|----|
| 1. Enumerate the common laboratory infections and the precautions taken while handling the infective materials. | 7 | 20 | 10 |
| 2. Define and classify Sterilizations. Discuss in detail about Autoclave and Hot Air Oven? | 7 | 20 | 10 |
| 3. Draw a labeled diagram of Bacterial cell. Compare and Contrast gram positive gram negative cell wall. | 7 | 20 | 10 |

II. Write Notes on:

- | | | | |
|--|---|----|---|
| 1. Pathogenic properties of bacteria? | 4 | 10 | 5 |
| 2. Name the Causatives of Laboratory accidents? Write about prevention, safety and first aid in Accidents caused by Acids? | 4 | 10 | 5 |
| 3. Write about Leukocytes, types and its functions? | 4 | 10 | 5 |
| 4. Reporting and Recording Procedures of a Lab. | 4 | 10 | 5 |
| 5. Gaseous disinfectants. | 4 | 10 | 5 |
| 6. Cleaning of glass wares. | 4 | 10 | 5 |
| 7. What are the precautions to be taken to avoid Haemolysis of blood? | 4 | 10 | 5 |
| 8. Define a) Normality
b) Molarity
c) Isotonic Solution
d) Mean
e) Standard Deviation. | 4 | 10 | 5 |

III. Short Answers on:

- | | | | |
|---|---|---|---|
| 1. Pathogenesis. | 2 | 4 | 3 |
| 2. Red cell inclusions? | 2 | 4 | 3 |
| 3. Tyndalization. | 2 | 4 | 3 |
| 4. What is the temperature and time for hot air oven? | 2 | 4 | 3 |
| 5. Write about the disposal of Laboratory waste? | 2 | 4 | 3 |
| 6. Name two anticoagulants and its uses? | 2 | 4 | 3 |
| 7. List different types of pipettes used in Laboratory? | 2 | 4 | 3 |
| 8. Give the uses of Transport Media. | 2 | 4 | 3 |
| 9. Why quality control should be used in a Laboratory? | 2 | 4 | 3 |
| 10. Grades of Chemicals. | 2 | 4 | 3 |

[LC 0212]

FEBRUARY 2013

Sub. Code: 5003

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Elaborate on:

(3 x 10 = 30)

1. Define Sterilization & write briefly about chemical methods of sterilization?
2. What are the normal requirements for bacterial growth? Describe the growth phases of bacteria?
3. Enumerate on Quality Assurance, the application, methods and their importance in Clinical Laboratory?

II. Write Notes on:

(8 x 5 = 40)

1. Importance of labeling specimens.
2. Incubator.
3. Anticoagulants and its uses.
4. Cleaning of Glass wares.
5. Universal safety precaution.
6. Classify solutions based on methods of expressing concentration?
7. Recording procedure in the laboratory.
8. Disposal of infective material.

III. Short Answers on:

(10 x 3 = 30)

1. What is the temperature and time for Hot Air Oven?
2. Lyophilisation.
3. Haemolysis .
4. Mention types of water.
5. Define Anaemia.
6. Write about the sterilization method of Milk?
7. Types of Pipettes.
8. Define the terms a) Molarity b) Molality.
9. Define Pathogen.
10. First aid in Laboratory Accidents.

[LD 0212]

AUGUST 2013

Sub. Code: 5003

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER III – GENERAL METHODOLOGY**

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Elaborate on:

(3x10 = 30)

1. Explain Moist heat sterilization.
2. Write the mechanism and the use of anticoagulants.
3. Give an account on handling and segregation of the waste.

II .Write Notes on:

(8x5 = 40)

1. Pre and Post analytical concepts.
2. What are the aseptic techniques and write its uses while inoculating the sample?
3. Explain disinfectants.
4. Define (i) Mean, (ii) Mode (iii) Median, (iv) SD, (v) CV
5. Name the appendages used for motility and explain it.
6. Write the merits and demerits of dry heat sterilization.
7. What are the possibility of laboratory accidents and how will you prevent it?
8. Gaseous Sterilization.

III. Short Answers on:

(10x3 = 30)

1. Name the type of Glass bottles used to store light sensitive reagents? Preparation of Glassware cleaning solution?
2. Define Non-ionizing radiation with example.
3. What is HEPA filter?
4. Normal values of Differential Count.
5. What are the precautions to prevent Haemolysis of blood?
6. Name the Reagent use to identify the Indole production. Write about the Principle of Indole production test
7. Name the biological indicator used to check sterilization in Autoclave?
8. Give the use of Blood Agar.
9. Why laboratory reports should be confidential?
10. Define Thermal death time (TDT)?

[LE 0212]

FEBRUARY 2014

Sub. Code: 5003

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER III – GENERAL METHODOLOGY**

Q.P. Code : 725003

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Elaborate on:

(3x10 = 30)

1. Define Disinfection. Write in detail about chemical methods of disinfection.
2. List the requirements for bacterial growth. List and describe in detail the various phases of bacterial growth.
3. Explain the importance, application and methods of Quality Assurance in the laboratory.

II .Write Notes on:

(8x5 = 40)

1. Autoclave.
2. Cleaning of Glass wares.
3. Disposal of laboratory waste.
4. Gaseous Sterilizing agents.
5. Standard Deviation.
6. Reporting and Recording Procedures in the laboratory.
7. Enrichment Media.
8. Acid Fast Stain and its uses.

III. Short Answers on:

(10x3 = 30)

1. Lyophilization.
2. Anaemia.
3. Preservation of Blood.
4. First Aid in Laboratory Accidents.
5. Transport Media and its uses.
6. Types of Pipettes used in Laboratory and its uses.
7. a) Molarity b) Normality
8. Three methods of physical sterilization and its uses.
9. Few Points on the importance of labeling of specimens in the laboratory.
10. Methylene Blue Stain.

[LF 0212]

AUGUST 2014

Sub.Code :5003

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR
PAPER III – GENERAL METHODOLOGY**

Q.P. Code: 725003

Time: Three hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3x10=30)

1. Elaborate on laboratory safe practice and write briefly on Universal Precautions.
2. Write the various components of bacterial cell and explain the Gram Negative Cell.
3. Write about Laboratory accidents, prevention, first aid.

II. Write notes on:

(8x5=40)

1. Handling and waste segregation in laboratory.
2. Write a note on Gaseous Sterilization.
3. Difference between Enriched media and Enrichment media.
4. Explain Bacterial spores.
5. Name the Locomotory organ of bacteria and explain it.
6. What are the steps to follow to get good smear from the blood sample?
7. Name some Bacteriostatic agents and explain it.
8. What are the aseptic techniques used in the laboratory for the processing of samples?

III. Short answers on:

(10x3=30)

1. What is Capsule? Name the stains used to diagnosis the capsule? Give one example.
2. Define SD and Mean.
3. Name the acid and there preparation that is used to clean the glassware's.
4. Write the Phases in the bacterial Growth Curve.
5. What is differential staining? Make a short answer with example.
6. What is Gram Variant?
7. Define Brownian Movement.
8. What are the color code used for the segregation of waste?
9. What is called the Power House of a Cell? Why?
10. Short note on Idophores.

[LG 0215]

FEBRUARY 2015

Sub.Code :5003

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Define and classify the sterilization. Which method of sterilization is best way and why? Explain that method of sterilization in detail.
2. Write about the various risk factors involved in handling infectious materials. What precautions should be taken in handling the specimens?
3. Draw and label the prokaryotic cell and add notes on each part.

II. Write notes on:

(8 x 5 = 40)

1. What are the precautions taken to avoid haemolysis of blood?
2. Write a note on Universal safety precaution?
3. List the various specimens, its collection and transportation in microbiology lab.
4. Explain the difference between Gram Positive and Gram Negative cell wall.
5. Define Normality, Mean, Median, Standard Deviation and CV.
6. Name some anticoagulants and explain its action.
7. Explain the biohazard.
8. Explain Radiation Sterilization.

III. Short answers on:

(10 x 3 = 30)

1. What is haemolysis?
2. What is Pasteurization?
3. Define Tyndallization.
4. Define Aerobes, Anaerobes and facultative anaerobes.
5. Difference between Sterilization and disinfection.
6. Write the different morphology of Leucocytes.
7. What is PPE? Make a list of them.
8. What is Biocidal, Biostatic and fungicidal?
9. Define normal flora and give some examples of normal flora of man.
10. What is EDTA and give the uses of it?

[LH 0815]

AUGUST 2015

Sub.Code :5003

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain Universal safety precaution. How will you organize and implement the same in your laboratory?
2. Draw a labeled diagram of bacterial cell. Compare and contrast Gram Positive and Gram Negative cell wall.
3. Explain Moist Heat Sterilization.

II. Write notes on:

(8 x 5 = 40)

1. Gram Stain and its clinical application.
2. Hot Air Oven.
3. Basal Media and its uses.
4. Anticoagulant and its uses.
5. Define (i) Mean (ii) Mode (iii) Median (iv) SD (v) CV
6. Disposal of infective material.
7. Cleaning of glass wares.
8. Write about bacteria based on oxygen requirement.

III. Short answers on:

(10 x 3 = 30)

1. Define PPE.
2. Soft water.
3. Which method is the best method of sterilization? Why?
4. Crystal Violet Stain.
5. What is sterilization and disinfection?
6. How will you prepare the blood films?
7. HEPA.
8. Define Spores.
9. Differentiate between pili and fimbriae.
10. MacConkey media.

[LI 0216]

FEBRUARY 2016

Sub.Code :5003

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the structure of bacteria. Add a note on the nutritional requirement.
2. What are the safety Measures to be observed in a laboratory? Mention the Common laboratory accidents and discuss their prevention.
3. Enumerate the risk factors involved in handling the infective materials. What precautions should be taken in handling them?

II. Write notes on:

(8 x 5 = 40)

1. Normal Flora of skin.
2. Transport Media.
3. Venipuncture and Collection of Blood samples.
4. Types of Media.
5. Composition of Blood.
6. Flagella.
7. Growth Curve in Bacteria.
8. Ethics of laboratory practice.

III. Short answers on:

(10 x 3 = 30)

1. What is BPL?
2. What is Enriched media?
3. Define Biostatistics.
4. Normal flora.
5. Define anaerobes with examples.
6. State the use of Phase Contrast Microscope in Clinical Laboratory.
7. Autoclave sterilization control organisms.
8. Pre Analytical errors
9. Short note on Capsule.
10. What is the use of iodine in Gram Stain?

[LJ 0816]

AUGUST 2016

Sub.Code :5003

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the categories of waste and their disposal according to color code.
2. Explain about autoclave and its principle with neat diagram.
3. List out the safety and preventive measures to be observed in a laboratory and List the common laboratory accidents and its prevention

II. Write notes on:

(8 x 5 = 40)

1. Different route of blood collection.
2. Name the four staining methods used in a laboratory, explain in detail about gram stain.
3. Types of media used in bacteriology.
4. Differentiate dark field microscope with phase contrast microscope.
5. Types of flagella.
6. Anaerobic Culture Method.
7. What are the different filters used in the laboratory?
8. Describe the procedure for management of needle prick injury.

III. Short answers on:

(10 x 3 = 30)

1. Colorimeter.
2. Autoanalyser.
3. Two uses of Electron Microscope.
4. Name two disinfectant used in operation theater.
5. Steps in Hand washing procedure.
6. Hot Air Oven.
7. Name two water borne diseases.
8. Hepatitis B virus.
9. Uses of Fimbria.
10. ELISA.

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Compare gram positive and Gram negative bacterial cell wall.
2. Define sterilization and write briefly about moist heat sterilization.
3. Describe in detail about the method of collection, transportation and storage of clinical specimens for microbiological examination.

II. Write notes on:

(8 x 5 = 40)

1. Describe the sources of errors in pre analytical phase.
2. Describe the routine maintenance of laboratory equipments.
3. Define (i) Mean (ii) Mode (iii) Median (iv) SD (v) CV
4. Write in short about laboratory information system (LIS).
5. Describe the various statistical formulae used in laboratory data analysis.
6. Anticoagulants and its uses.
7. Define total count and differential count.
8. Explain Dry Heat Sterilization.

III. Short answers on:

(10 x 3 = 30)

1. How will you prepare a blood smear?
2. Enlist the causes of hemolysis samples.
3. Write down sources of post analytical errors.
4. Write down the proper order of drawing blood samples.
5. What are the requirements for sample collection for an HIV test?
6. Principle and methods of ensuring quality assurance in the laboratory.
7. EDTA.
8. Define fimbria and its uses.
9. Seitz filter.
10. Define Lyophilization.

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. List the various specimen that are received in the microbiological laboratory. Describe in detail collection, transportation and processing of these specimen.
2. Write in detail on Biomedical waste management.
3. Describe the structure of bacteria and write a note on its nutritional requirement.

II. Write notes on:

(8 x 5 = 40)

1. Types of media.
2. Sampling errors.
3. Gaseous methods of sterilization.
4. Preparation and use of Buffy coat.
5. Gram stain.
6. Universal safety precaution.
7. Anticoagulants.
8. Quality assurance in laboratory.

III. Short answers on:

(10 x 3 = 30)

1. Composition of blood.
2. Cleaning of new glassware.
3. Separation and storage of sera.
4. Inspissation.
5. HEPA filter.
6. Bacterial spores.
7. Obligate aerobe.
8. Precautions to prevent haemolysis.
9. Bacterial growth curve.
10. Mean value.

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Define total and viable count of bacteria. What is bacterial growth curve? Enumerate and explain different phases of a bacterial growth curve.
2. Classify sterilization. Give a brief account of chemical methods of sterilization.
3. Explain the general principles of laboratory safety. Mention the different laboratory hazards and describe the role of universal safety precautions in preventing these hazards.

II. Write notes on:

(8 x 5 = 40)

1. Sampling errors.
2. Quality control in microbiology.
3. Autoclave.
4. Bacterial nutrition.
5. Flagella.
6. Cleaning of lab wares.
7. Normal flora of human body.
8. Pathogenic property of bacteria.

III. Short answers on:

(10 x 3 = 30)

1. Write about leucocytes and their types.
2. Radiation in sterilization.
3. Separation and storage of sera.
4. Haemolysis.
5. Bacterial spores.
6. Leishman stain.
7. Biological indicator used in hot air oven.
8. Transport medium.
9. HEPA filter.
10. Capsular stain.

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the structure of bacteria. Write briefly about the cell wall.
2. Define sterilization. Classify various methods of sterilization. Write in detail about sterilization by dry heat.
3. Describe in detail the different anticoagulants and their uses in haematology.

II. Write notes on:

(8 x 5 = 40)

1. Colour coding of Biomedical waste.
2. Preparation of indicator solutions.
3. Acid fast stain.
4. Capsule.
5. Venous blood collection.
6. Quality assurance in laboratory.
7. Needle prick injury.
8. Tyndallisation.

III. Short answers on:

(10 x 3 = 30)

1. Normal Hb% for males and females.
2. Cleaning of new glassware.
3. Romanowsky stain.
4. Incubator.
5. Fumigation.
6. BPL.
7. Obligate anaerobe.
8. Transport medium.
9. Mention the normal values in a differential count.
10. Biological indicators used in autoclave.

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Enumerate on Quality Assurance the application, methods and their importance in clinical laboratory.
2. What are the normal requirements for bacterial growth? Describe the growth phases of bacteria?
3. Define Disinfection. Write in detail about chemical methods of disinfection.

II. Write notes on:

(8 x 5 = 40)

1. Universal Precaution.
2. Ethics in Laboratory practice.
3. Describe the routine maintenance of laboratory equipments.
4. Structure of Spore.
5. Preparation and use of Buffy coat.
6. Define (i) Mean (ii) Mode (iii) Median (iv) SD (v) CV
7. Laminar Air flow.
8. Write about Leukocytes, types and its functions?

III. Short answers on:

(10 x 3 = 30)

1. Difference between Document and Record in laboratory.
2. Platelet count.
3. Seitz filter.
4. Types of Pipettes used in Laboratory and its uses.
5. What is EDTA and give the uses of it?
6. Dark Field Microscopy.
7. Define the terms (a) Molarity (b) Molality.
8. Preparation and Uses of Chocolate Agar.
9. Give three examples of Non motile Gram Negative bacilli.
10. Differential Medium.

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe in detail the various methods of collection, transport, packing and storing of specimens in a clinical laboratory.
2. Write about Laboratory accidents, prevention, first aid.
3. Describe the structure of bacteria. Add a note on the nutritional requirement.

II. Write notes on:

(8 x 5 = 40)

1. Confidentiality of reports.
2. Hot Air Oven.
3. Venipuncture and Collection of Blood samples.
4. Quality assurance in laboratory.
5. Composition of Blood.
6. Disposal of laboratory waste.
7. Role of Laboratory in Patient care.
8. Enrichment media.

III. Short answers on:

(10 x 3 = 30)

1. Errors in Post analytical stages of processing of specimens.
2. Difference between Document and Record in laboratory.
3. Three examples of Enriched media.
4. Importance of labeling and identification of Specimens.
5. Differentiate between pili and fimbriae.
6. Blood Agar.
7. Colorimeter.
8. EDTA.
9. Fumigation.
10. Universal precaution.

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR**

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain the dry heat method of sterilization in detail.
2. Draw a labeled diagram of bacterial cell. Compare and contrast gram positive and gram negative cell wall.
3. Write the mechanism and the use of anticoagulants.

II. Write notes on:

(8 x 5 = 40)

1. Describe the routine maintenance of laboratory equipments.
2. Composition of blood.
3. Name the appendages used for motility and explain it.
4. What are the steps to follow to get good smear from the blood sample?
5. Define (i) Mean (ii) Mode (iii) Median (iv) SD (v) CV
6. Centrifuge.
7. Enrichment media.
8. Disposal of wastes.

III. Short answers on:

(10 x 3 = 30)

1. MacConkey media.
2. Name the type of glass bottles used to store light sensitive reagents.
Preparation of glassware cleaning solution.
3. Crystal violet stain.
4. HEPA filters.
5. Why the laboratory reports should be kept confidential?
6. Seitz filter.
7. Gram staining.
8. Bacterial spore.
9. Autoanalyser.
10. Radiation in sterilization.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321]

MARCH 2021

Sub. Code: 5003

(AUGUST 2020 EXAM SESSION)

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR (From 2010-2011 onwards)

PAPER III – GENERAL METHODOLOGY

Q.P. Code : 725003

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Describe the external structure of bacteria.
2. Give a detail account on laboratory accidents. Add a note on its prevention and first aid.
3. Give an account on handling and segregation of the waste.

II. Write notes on:

(8 x 5 = 40)

1. Nutritional requirements of bacteria.
2. Moist heat sterilization.
3. Any 2 bacterial media and its composition.
4. Composition of blood.
5. Concept of pathogenicity.
6. Biohazard and universal safety precautions.
7. Incubator.
8. Classify bacteria based on pH requirement.

III. Short answers on:

(10 x 3 = 30)

1. Anticoagulants.
2. Importance of labelling of specimens.
3. Normal flora of human.
4. Asepsis.
5. Disinfection.
6. SD and CV.
7. Anaemia.
8. Acid fast stain.
9. Hot Air Oven.
10. Pathogen.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0422]

APRIL 2022

Sub. Code: 5003

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSIONS)

B.Sc., MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR (From 2010-2011 onwards)

PAPER III – GENERAL METHODOLOGY

Q.P. Code: 725003

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on : (3X10=30)

1. Define sterilization. What are the methods of Moist heat Sterilization? Elaborate on Autoclave.
2. What are the various categories of Biomedical Waste? Write about the segregation and disposal of Biomedical waste in the laboratory.
3. Draw a labelled diagram of the cell wall of Gram Positive and Gram Negative bacteria. Elaborate on Flagella and spore.

II. Write Notes on : (8X5=40)

1. Dos and Don'ts in a laboratory.
2. Urine sample collection method.
3. Hot air oven.
4. Common Laboratory Accidents.
5. Transport Media.
6. Refrigerated Centrifuge.
7. Hanging Drop Method.
8. Laboratory Fumigation.

III. Short Answers on : (10X3=30)

1. Differential Stains.
2. Parts of Compound Microscope.
3. Types of water.
4. Temperature chart.
5. Mean, Median.
6. Calibration of Micropipette.
7. Quality control of culture media.
8. Normal flora of Respiratory tract.
9. Brownian movement.
10. Importance of Confidentiality of reports.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1122]

NOVEMBER 2022

Sub. Code: 5003

B.Sc. MEDICAL LABORATORY TECHNOLOGY

FIRST YEAR (Regulation 2010-2011)

PAPER III – GENERAL METHODOLOGY

Q. P. Code: 725003

Time: Three hours

Maximum : 100 Marks

Answer ALL Questions

I. Elaborate on:

(3 x 10 = 30)

1. Write about Laboratory accidents, prevention and first aid.
2. Give a detail account on culture media and its types.
3. Explain Moist Heat Sterilization.

II. Write notes on:

(8 x 5 = 40)

1. Describe the cell wall of bacteria.
2. Types of flagella with examples.
3. Nutritional requirements of bacteria.
4. Collection of blood by venipuncture.
5. Gram staining and its application.
6. Medicolegal aspects of record keeping.
7. Segregation of wastes.
8. Define median and mode.

III. Short answers on:

(10 x 3 = 30)

1. Define Personal Protective Equipments.
2. Types of microscope.
3. Normal flora of human body.
4. Biohazard.
5. Sterilization by radiation.
6. How to prepare a blood film?
7. Molarity.
8. Gaseous sterilization.
9. Bacteriostatic agents.
10. Spores.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423]

APRIL 2023

Sub. Code: 5003

**B.Sc., MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER III – GENERAL METHODOLOGY
Q.P. Code: 725003**

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on :

(3X10=30)

1. Explain the Dry heat method of Sterilization in detail.
2. Draw a labelled diagram of Bacteria. Write about the external structure of Bacteria.
3. Write about Laboratory Accidents and First Aid methods.

II. Write Notes on :

(8X5=40)

1. Laboratory wastes and its segregation.
2. Classify bacteria based on oxygen requirement.
3. Nutritional requirements of bacteria.
4. Anticoagulant and its uses.
5. Define and mention the applications of (i) Mean (ii) Mode (iii) Median.
6. Universal Precaution.
7. Cleaning of glassware.
8. Quality Assurance System.

III. Short Answers on :

(10X3=30)

1. MacConkey media.
2. Types of Movement in bacteria.
3. Gaseous sterilization.
4. Crystal Violet Stain.
5. Bacteriostatic agents.
6. How will you prepare the blood films?
7. HEPA filters.
8. Define Spores.
9. Different types of Pipettes and its uses.
10. Growth curve phases.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123]

NOVEMBER 2023

Sub. Code: 5003

**B.Sc., MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER III – GENERAL METHODOLOGY
Q.P. Code: 725003**

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on : (3X10=30)

1. Define Disinfection. List the various disinfectants. Add a note on the advantages and disadvantages of Hypochlorite.
2. List the equipments in the laboratory. What are the records to be maintained for an equipment? What will you do if an equipment is not working?
3. Classify Culture Media with examples. How to prepare, sterilize, quality check and store a Culture Media in a laboratory?

II. Write Notes on : (8X5=40)

1. Anaerobic culture methods.
2. Importance of stores and supplies in laboratory.
3. Biomedical Waste Segregation.
4. Autoclave.
5. Glassware cleaning.
6. Blood components and its uses.
7. Types of arrangement of flagella with diagram.
8. Sample collection for blood culture.

III. Short Answers on : (10X3=30)

1. Steps of Hand washing.
2. Different types of blood samples.
3. Normal flora of Intestine.
4. Laboratory acquired infections.
5. Anticoagulants.
6. Name the different routes of infection.
7. Labeling of specimen.
8. Blood spill management.
9. Quality control of Antibiotic discs.
10. Confidentiality of reports.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0424]

APRIL 2024

Sub. Code: 5003

**B.Sc., MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER III – GENERAL METHODOLOGY
Q.P. Code: 725003**

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on : (3 X 10 = 30)

1. Define Sterilization and classify various Sterilization methods. Write in detail about Moist Heat Sterilization.
2. Draw and label a Bacterial cell and describe in detail Bacterial cell wall.
3. Describe in detail Biomedical Waste Management in laboratories.

II. Write Notes on : (8 X 5 = 40)

1. Quality control in Microbiology.
2. Blood Spill management in laboratories.
3. Needle stick injury.
4. Cleaning glass wares in the laboratory.
5. Sampling errors.
6. Anticoagulants.
7. Anaerobic culture methods.
8. Biosafety cabinet in Microbiology.

III. Short Answers on : (10 X 3 = 30)

1. What is the importance of sample labelling?
2. Name three different types of blood samples with example of test performed using them.
3. Name three common disinfectants used in the hospitals.
4. Name three enriched media.
5. Bacterial Growth Curve.
6. Why should we maintain confidentiality of test results?
7. What are the advantages and disadvantages of Hot air oven?
8. Gram stain.
9. TSI media in bacterial identification.
10. Material Safety Data Sheets (MSDS) for chemical in laboratories.

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1125]

NOVEMBER 2025

Sub. Code: 5003

**B.Sc., MEDICAL LABORATORY TECHNOLOGY
FIRST YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER III – GENERAL METHODOLOGY
Q.P. Code: 725003**

Time: Three Hours

Answer All questions

Maximum: 100 Marks

I. Elaborate on: (3 x 10 = 30)

1. Explain in detail about Growth and Nutritional requirements of Bacteria.
2. Write about General principles of Specimen collection.
3. Explain about Normal flora of humans and write about their role in health and diseases.

II. Write Notes on : (8 x 5 = 40)

1. Sterilization by filtration.
2. Bacterial flagella.
3. Blood spill management.
4. Standard precautions.
5. Automation in laboratory.
6. Post analytical errors.
7. Principles of Gram staining.
8. Cleaning and sterilization of glassware.

III. Short Answers on : (10 x 3 = 30)

1. Laboratory management system.
2. Sporulation.
3. Define Biomedical Waste.
4. Quaternary ammonium compounds.
5. Standard deviation.
6. Red cell parameters.
7. Importance of labeling the samples in laboratory.
8. Storage and retention of samples.
9. Shelf life of reagents.
10. Define incubation period.
