

APRIL 2001

[KD 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. List the blood coagulation factors. What are the simple tests that can be done to investigate the coagulation disorders? Discuss briefly about hemophilia.
(25)
2. What are the commonly used anticoagulants for blood transfusion? What are the changes that can occur in stored blood? Discuss briefly about the transfusion reactions.
(25)
3. Write short notes on : (5 × 10 = 50)
 - (a) Platelet count.
 - (b) Rh typing.
 - (c) Selection of blood donors.
 - (d) Cross matching.
 - (e) Idiopathic thrombocytopenic purpura.

DECEMBER 2001

[KE 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Write about the normal coagulation mechanism and the laboratory screening tests for coagulation. (25)
 2. Write briefly about the preparation of blood components. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Diagnostic tests for inherited disorders of platelets
 - (b) Von Willebrand's Disease
 - (c) Anti coagulants
 - (d) Transfusion reactions
 - (e) Bleeding time.
-

APRIL 2003

[KI 879]

Sub. Code : 5031

B.Sc. (Medical Laboratory Technology)

DEGREE EXAMINATION.

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Describe the principles involved in the Quality Control of your blood bank taking into consideration the overall aspects of the lab. (25)

2. List the laboratory test you would undertake in a voluntary donor. Describe briefly the tests that are likely to lead to infections in the recipient. (Use diagrams if relevant) (25)

3. Write short notes on the following : (5 × 10)

- (a) Pamphlets for donor motivation
 - (b) Partial thromboplastin time
 - (c) Gene mapping and its relevance in a blood bank
 - (d) Platelet components
 - (e) Haemophilia.
-

AUGUST 2004

[KL 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours

Maximum : 100 marks

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

Sec. A & B : 80 marks

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

1. What are the different blood components prepared in the department of transfusion medicine? Describe the procedure of platelet concentrate preparation. (15)

2. Enumerate briefly the important protocol for compatibility test procedure. (15)

SECTION B

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

- (a) Bombay phenotype antigen.
- (b) Rh typing.
- (c) Adsorbed plasma.
- (d) Platelet functions.
- (e) Haemophilia.
- (f) Blood components therapy.
- (g) Fibrinogen assay.
- (h) Transfusion reaction.
- (i) Erythroblastosis foetalis.
- (j) Idiopathic Thrombocytopenic Purpura (ITP).

AUGUST 2005

[KN 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

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. Discuss quality control in blood banking. (15)**
- 2. Discuss in detail the investigation of a platelet disorder. (15)**

SECTION B — (10 × 5 = 50 marks)

- 3. Write short notes on : (5 marks each)**
 - (a) H.L.A. System.**
 - (b) Coomb's Test.**
 - (c) Anaphylaxis.**
 - (d) L.E. Cell Phenomenon.**
 - (e) Hybridoma Techniques.**
 - (f) Cross Matching.**
 - (g) Preservation and storage of blood.**
 - (h) Major abnormalities in immune system in AIDS.**
 - (i) Diseases transmitted by blood transfusion.**
 - (j) Principles of antigen antibody reactions.**

MARCH 2006

[KO 879]

Sub. Code : 5031

SECTION B — (10 × 5 = 50 marks)

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

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.

SECTION A — (2 × 15 = 30 marks)

Answer ALL questions.

**1. Discuss blood donor selection and screening of
blood donors. (15)**

**2. Enumerate the principles of blood coagulation.
(15)**

3. Short notes on : (5 marks each)

- (a) Rh factor
- (b) Osmotic fragility test
- (c) Monoclonal antibodies
- (d) Haemolytic disease of newborn
- (e) Delayed hypersensitivity
- (f) Pathogenesis of HIV infection
- (g) Cytokines
- (h) Blood component therapy
- (i) Delayed reactions of blood transfusion
- (j) Partial thromboplastin time.

AUGUST 2006

[KP 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours Maximum : 100 marks

**Descriptive : Two hours and Descriptive: 80 marks
forty minutes**

Objective : Twenty minutes Objective : 20 marks

Write essays on :

1. (a) Write about the ABO grouping and Rh typing methods.

(b) HBs Ag testing in Blood Bank. (20)

2. Enumerate the investigations for bleeding disorders. (15)

3. Write an essay on various anticoagulants and its uses. (15)

4. Write short notes on : (6 × 5 = 30)

(a) Von Willebrands disease

(b) DIC

(c) Fibrinogen estimation

(d) Prothrombin time

(e) Thrombocytopaenic purpura

(f) Direct Coomb's test.

AUGUST 2007

[KR 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Time : Three hours Maximum : 100 marks

**Descriptive : Two hours and Descriptive : 80 marks
forty minutes**

Objective : Twenty minutes Objective : 20 marks

Answer ALL questions.

I. Write essays on : (2 × 15 = 30)

**(1) Discuss in detail the various coagulation
disorders and their laboratory diagnosis. (15)**

**(2) Describe the various platelet disorders and
their laboratory diagnosis. (15)**

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

- (a) Anticoagulants**
- (b) Quality control in blood bank**
- (c) Partial thromboplastin time**

(d) Haemophilia

**(e) Complications of mismatched blood
transfusion**

**(f) Disseminated Intravascular Coagulation
(DIC)**

(g) Direct Coomb's Test

(h) Von Willebrands disease

(i) Idiopathic thrombocytopaenia

(j) Tourniquet test.

August-2008

[KT 879]

Sub. Code : 5031

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

Third Year

**Paper I — COAGULATION AND TRANSFUSION
MEDICINE**

Q.P. Code : 725031

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Essays : (2 × 15 = 30)

- 1. Describe in detail the laboratory investigation done to evaluate coagulation. (15)**
- 2. Discuss in detail the transfusion reactions and their laboratory investigations. (15)**

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

- 1. Thrombotic Thrombocytopenic Puspura.**
- 2. Clot retraction and Clot Lysis.**
- 3. Quality control in coagulation Laboratory.**
- 4. Partial Thromboplastin Time.**

5. Haemophilia.
6. Coombs Test
7. Screening of donors.
8. Platelet component.
9. Blood collection and preservation.
10. Quality control in Blood Banks.

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

1. What is Thrombocytopenia? Enumerate two causes of Thrombo Cytopenia.
2. Name the platlet diluting fluid. What is its composition?
3. Mention two functions of the platlets.
4. Name four coagulation disorders.
5. What is the Anticoagulant used to store blood? What is the temperature at which blood is stored?
6. Mention two screening tests in the Blood Bank for Donors.
7. Name the Blood Groups.

8. Name one test to Diagnose Haemophilia. What is the principle of the test?

9. What is the normal bleeding time? Name two methods of doing bleeding time.

10. What are the methods of doing Blood Grouping?

B.Sc. (Medical Laboratory Technology) DEGREE EXAMINATION**THIRD YEAR****Paper I – COAGULATION AND TRANSFUSION MEDICINE****Q.P. Code : 725031****Time : Three hours****Maximum : 100 marks****Answer All questions.****I. Essays :****(2X15=30)**

1. Describe principles of blood coagulation and haemostasis with special relation to the abnormalities in disseminated intravascular coagulation. Enumerate the laboratory findings in them.
2. Describe the various disorders of platelets and their laboratory diagnosis.

II. Write Short Notes on :**(10X5=50)**

1. Prothrombin time.
2. Platelet count.
3. Von Willebrands disease.
4. Quality control in blood banking.
5. Fibrin degradation product.
6. Idiopathic thrombocytopenic purpura.
7. Factor assay.
8. Haemophilia A.
9. Hemolytic uremic syndrome.
10. Anticoagulants.

III. Short Answer Questions:**(10X2=20)**

1. Name four acquired coagulation disorders.
2. What is the normal bleeding time? Mention the common methods of doing it.
3. What is the action of aspirin on platelets?
4. Estimation of Donor's haemoglobin as a screening test.
5. What is the temperature at which blood grouping reagents and test samples are stored?
6. Mention four transfusion transmitted diseases.
7. Two common methods of blood grouping.
8. Why is it necessary to collect blood and citrate solution in 9:1 ratio?
9. Two most common anticoagulant used in blood banking.
10. Direct Coomb's Test.

August 2010

[KX 879]

Sub. Code: 5031

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

Paper I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code : 725031

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Essays :

(2X15=30)

1. Describe the various laboratory tests done for voluntary donors and write in detail the disposal of blood products.
2. Describe the laboratory screening tests for a bleeding disorder patient and write in detail about Von Willibrands disease.

II. Write Short Notes on :

(10X5=50)

1. VDRL test.
2. Activated partial thromboplastin time.
3. Fibrinogen assay.
4. Acute Leukaemias.
5. Coombs test.
6. Rh typing.
7. Functions of platelet.
8. DIC.
9. Thrombocytopaenia.
10. Antihaemophilic factor.

III. Short Answer Questions:

(10X2=20)

1. Mention four causes of thrombocytosis.
2. What is component therapy? When is packed cell used?
3. Name two indications for platelet transfusion.
4. Describe Plasma coagulation inhibitors.
5. What is RH factor? What is its significance?
6. Name two coagulation factors synthesised in the liver.
7. Two causes of auto immune haemolytic anemia.
8. Hereditary spherocytosis.
9. Streptokinase.
10. Demonstration of sickling.

August 2011

[KZ 0811]

Sub. Code: 5031

**B.SC. MEDICAL LABORATORY TECHNOLOGY
DEGREE EXAMINATION**

THIRD YEAR

PAPER I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code : 725031

Time: Three hours

Maximum: 100 Marks

Answer All Questions

I. Elaborate on :

(3 x 10 = 30)

1. What is fibrinolysis? How does it occur in the body? What is the significance of Fibrin (Fibrinogen)-Degradation Products (FDPs) determination?
2. What is cryoprecipitate? Add a note on its preparation, constituents and conditions in which this product can be used.
3. Compare the characteristics of IgM and IgG Immunoglobulins. Add a note on the effect of enhancement media and potentiators in red cell agglutination reactions.

II Write Notes on:

(8 x 5 = 40)

1. What is the most commonly used specimen for coagulation studies?
What are the precautions taken for preparing specimens for coagulation studies?
2. What is Bombay Blood group? What are its characters?
Why is it that a person of Bombay blood group cannot receive blood group O?
3. Laboratory tests performed on donor blood to detect Human Immunodeficiency Virus infection.
4. List the glycosyltransferases and immunodominant sugars for the A, B, O and H alleles.
5. What is an immune antibody? How is anti-Rh different from anti-A (or) anti-B?
6. What is Prothrombin time and how to calculate International Normalized Ratio?
7. Hybridoma Technique
8. Biosafety level 2 precautions as applied in the Blood bank setting.

III. Short Answers on :

(10 x 3 = 30)

1. If the father is AB and mother O, What are the possible genotypes of the children?
2. List the reasons for temporary deferral in blood donation.
3. Define the abbreviations HLA, MLR, MLC and MHC.
4. List the information that is required to be on the blood unit label.
5. What is rouleaux formation? How does this interfere in blood grouping & typing?
6. What is a titre? How would you determine the anti-D titre in a pregnant mother?
7. Define the terms affinity and avidity in antigen-antibody interaction.
8. State the storage temperatures and storage limits for each component.
9. Universally accepted criteria for Blood donor selection
10. Information, Education, Communication (IEC) and other promotional activities related to voluntary blood donation.

[LB 0212]

AUGUST 2012

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER I – COAGULATION & TRANSFUSION MEDICINE

Q.P. Code : 725031

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. Explain the screening test for bleeding disorders. | 7 | 20 | 10 |
| 2. Explain the principle and applications of Coombs test. | 7 | 20 | 10 |
| 3. Explain the process of preparation of blood components. | 7 | 20 | 10 |

II. Write notes on:

- | | | | |
|--|---|----|---|
| 1. Automation in coagulation. | 4 | 10 | 5 |
| 2. Von Willie brand Assay. | 4 | 10 | 5 |
| 3. Clinical significance of other red cell antigens. | 4 | 10 | 5 |
| 4. Sub groups of A. | 4 | 10 | 5 |
| 5. Storage of blood components. | 4 | 10 | 5 |
| 6. Transfusion in transplantation. | 4 | 10 | 5 |
| 7. Quality assurance in blood banking. | 4 | 10 | 5 |
| 8. HLA and its disease association. | 4 | 10 | 5 |

III. Short answers on:

- | | | | |
|--|---|---|---|
| 1. Fibrinogen assay. | 2 | 4 | 3 |
| 2. Bleeding time. | 2 | 4 | 3 |
| 3. Cryoprecipitate. | 2 | 4 | 3 |
| 4. Organization of blood donation camps. | 2 | 4 | 3 |
| 5. Liss and its use in blood banks. | 2 | 4 | 3 |
| 6. Lists the records to be maintained in blood bank. | 2 | 4 | 3 |
| 7. Duffy blood group systems. | 2 | 4 | 3 |
| 8. Blood collection monitor. | 2 | 4 | 3 |
| 9. Blood bank audit. | 2 | 4 | 3 |
| 10. Blood bank software. | 2 | 4 | 3 |

[LD 0212]

AUGUST 2013

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code : 725031

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Elaborate on:

(3x10 = 30)

1. Explain the process of normal haemostasis and list the screening tests for haemostasis and their principle
2. Write in detail about the types of blood bags and anticoagulants used in blood bank
3. Classify transfusion reactions. How do you investigate transfusion reaction.

II .Write Notes on:

(8x5 = 40)

1. Organisation of blood donation camps
2. Plasma components for transfusion
3. TRALI
4. Laboratory findings in disseminated intravascular coagulation
5. Indications for red cell transfusion
6. Thrombophilia
7. Significance of mixing studies in coagulation
8. Storage of plasma

III. Short Answers on:

(10x3 = 30)

1. Frozen red cells
2. Quality control measures for platelet concentrate
3. Enhancers of agglutination
4. Pathogen inactivation technologies
5. Therapeutic plasma exchange
6. Von Wille Brand factor
7. Fibrinogen assay
8. Trouble shootings in coagulation tests
9. Cryobath
10. Permanent deferral criteria for donors

[LF 0212]

AUGUST 2014

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER I – COAGULATION & TRANSFUSION MEDICINE

Q.P. Code : 725031

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

I. Elaborate on:

(3 x 10 = 30)

1. Quality control in the blood bank.
2. Approach to the laboratory diagnosis of platelet disorders.
3. Infectious disease screening in the blood bank.

II .Write Notes on:

(8 x 5 = 40)

1. Thromboelastogram.
2. Activated partial thromboplastin time.
3. Irregular blood group antibodies.
4. D dimer.
5. Haemolytic disease of the newborn.
6. Lupus anticoagulant.
7. Irradiation of blood components.
8. Voluntary donation.

III. Short Answers on:

(10 x 3 = 30)

1. What is the most commonly used anticoagulant used for coagulation studies? Mention two precautions you will use while collecting the sample for coagulation studies and the reasoning behind these.
2. Briefly describe the cause of haemolytic disease of the newborn. Name two blood group systems that are frequently implicated in haemolytic disease of the newborn.
3. Who is a blood group secretor? Mention one situation where it is useful to determine secretor status.
4. Name 4 methods of blood grouping. Which is the most sensitive method?
5. Name 6 causes for temporary deferral of a blood donor.
6. What is thromboplastin? How does partial thromboplastin differ from thromboplastin? Name two sources of thromboplastin.
7. Name the classical HLA class 1 and class 2 loci.
8. Name three ways in which anti D differs from anti A and anti B formed by our bodies.
9. Mention two tests that will be abnormal in haemophilia A.
10. At what temperature are red cell concentrates stored? Name two anticoagulant preservative solutions in use. What are the expiry periods for red cells stored in these solutions?

[LG 0215]

FEBRUARY 2015

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code : 725031

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

I. Elaborate on:

(3 x 10 = 30)

1. Anticoagulant preservative solutions used in the blood bank.
2. Section of blood donors.
3. Screening tests for coagulation.

II .Write Notes on:

(8 x 5 = 40)

1. Rh typing and its significance.
2. Plasma components.
3. Bleeding time.
4. Bombay blood group.
5. Von Willebrand disease.
6. Delayed haemolytic transfusion reactions.
7. Autologous donation.
8. Apheresis.

III. Short Answers on:

(10 x 3 = 30)

1. Name the ABO blood groups. Mention the antigens and antibodies found in each of the ABO groups.
2. Briefly describe the principle of the indirect Coombs test. What does a positive test imply?
3. Name 3 coagulation factors implicated in prothrombin time.
4. Briefly describe the principle of the copper sulfate method for haemoglobin estimation. Give two reasons why it is a popular method for haemoglobin estimation of donors in the blood bank.
5. Name two methods for performing bleeding time. Name one condition where bleeding time is prolonged.
6. What are irregular blood group antibodies? Name four irregular antibodies.
7. Name two tests that you will do towards quality control of platelet rich concentrates for the tests you mentioned in this context.
8. What is the temperature at which platelets are stored? What is the recommended duration of storage?
9. Name four inherited bleeding disorders and mention what is the abnormality in each.
10. Describe briefly the principle of the clot lysis test. Name one condition where it is increased.

[LH 0815]

AUGUST 2015

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about coagulation phase of haemostasis.
2. Name the Factors that affecting the Antigen-Antibody reaction and the Agents used in detecting the Antigen-Antibody reaction in blood bank.
3. Write in detail about Patho-physiology and Diagnosis of Disseminated intravascular coagulation.

II. Write notes on:

(8 x 5 = 40)

1. Von willebrand disease.
2. Bombay Phenotype.
3. Weak D.
4. Platelet function test.
5. Acute hemolytic transfusion reaction.
6. Automation in coagulation lab.
7. Strategies for blood donor motivation.
8. Importance of HLA in Transplantation.

III. Short answers on:

(10 x 3 = 30)

1. Anti-coagulant preservative solution used in storing red cells in blood banks.
2. Pro thrombin time.
3. Storage and Indication of Cryo – Precipitate.
4. Quality control of ABO re-agent.
5. Bernard Soulier Syndrome.
6. Define ELISA and types of ELISA.
7. Haemoglobin screening in blood donors.
8. Define apheresis and any three advantages of Apheresis.
9. Acute Normo volumeic Hemodilution.
10. Antithrombin.

[LI 0216]

FEBRUARY 2016

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR

PAPER I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about the screening test for coagulation abnormality.
2. Describe normal human Immunoglobulins and describe the importance of IgG and IgM in blood bank.
3. What are the components of pre transfusion testing and write briefly about compatibility testing?

II. Write notes on:

(8 x 5 = 40)

1. Hemophilia B.
2. Write a note on the vitamin – K Dependant coagulation factor.
3. Quality control of platelets concentrate.
4. Describe various serological markers for hepatitis B virus infection.
5. Sterilization and disinfections protocols in the blood bank.
6. Fibrin Degradation products.
7. Genetics and Biochemistry of ABO blood group.
8. Rh antibodies.

III. Short answers on:

(10 x 3 = 30)

1. Intra – operative blood salvage.
2. Name the Apheresis derived blood components.
3. Name any two indications and shelf life of Fresh frozen Plasma.
4. Red cell additive solution.
5. Name any three physical and bio chemical storage lesion of red cells.
6. Principle of anti human immuno-globulin reagent.
7. Define and classify HDN.
8. Name three specific test most commonly used for presence of a Lupus anticoagulant.
9. Sample collection and Anticoagulant used for coagulation assay.
10. Modified haemoglobin – based blood substitutes.

[LJ 0816]

AUGUST 2016

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION AND TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

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

1. Describe the screening and specific test used in the diagnosis of bleeding disorder.
2. Discuss in detail about preservation, storage and transportation of blood component.
3. Write in detail about red cell compatibility testing.

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

1. Hemophilia A.
2. VDRL.
3. Quality assurance in coagulation Lab.
4. Antiglobulin test.
5. Intrauterine transfusion.
6. Blood donor selection criteria.
7. Thrombophilia.
8. HLA in transplantation.

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

1. Weak D.
2. Bombay blood group.
3. Cryoprecipitate.
4. Fibrin Degradation products (FDP).
5. TRALI.
6. Hepatitis B virus.
7. Heamoglobin-based red cell substitutes.
8. Quality control of ABO reagent.
9. Pre operative heamodilution.
10. Blood donor motivation.

[LK 0217]

FEBRUARY 2017

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION AND TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Write in detail about the Coagulation Cascade of Hemostasis.
2. Discuss about Rh blood group and its importance.
3. Write about the selection and screening eligible criteria to donate blood.

II. Write notes on:

(8 x 5 = 40)

1. Hemophilia B.
2. Quality control of platelet concentrate.
3. Quality assurance in blood bank.
4. Blood substitutes.
5. HLA in health and disease.
6. Transfusion support in transplantation.
7. Auditing in blood bank.
8. Thromboelastography.

III. Short answers on:

(10 x 3 = 30)

1. Difference between IgG and IgM antibody.
2. CPDA.
3. APTT (Activated partial Thromboplastin).
4. DIC.
5. Extra vascular Hemolysis.
6. Fresh frozen plasma.
7. Factors influencing Antigen-Antibody reaction.
8. Direct coombs test.
9. Afibrinogenemia.
10. Mandatory screening test for all blood donation in India.

[LL 0817]

AUGUST 2017

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

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

1. Explain the coagulation Pathway. What are the tests you will do to investigate a bleeding disorder?
2. Elaborate on blood transfusion reactions. How will you investigate them?
3. Elaborate on the types of blood groups.

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

1. Disseminated intravascular coagulation.
2. Blood groups other than ABO groups.
3. Fresh Frozen plasma.
4. Human leukocyte antigen (HLA) and diseases.
5. Von Willebrand factor.
6. How Platelets are stored?
7. Activated partial Thromboplastin time (APTT) and its significance.
8. Transfusion transmitted diseases.

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

1. Prothrombin time (PT) and international normalized ratio (INR).
2. Fibrinolysis.
3. Coombs' Test.
4. Blood donor.
5. Cross matching of blood.
6. Agglutination.
7. What are the functions of platelets?
8. Thrombophilia.
9. Bombay Blood group.
10. Transfusion associated lung injury (TRALI).

[LM 0218]

FEBRUARY 2018

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

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

1. What are blood components? How they are stored? What are their uses?
2. Elaborate on human leukocyte antigen (HLA) and its usefulness.
3. Elaborate on Thrombophilia.

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

1. Cross matching of blood.
2. Bombay blood groups.
3. Coombs' test.
4. Disseminated intravascular coagulation.
5. Blood donor selection.
6. Transfusion transmitted diseases.
7. Write a note on storage of blood.
8. Platelets storage and its purpose.

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

1. Fresh frozen plasma.
2. Fibrinolysis.
3. Activated partial thromboplastin time (APTT).
4. Agglutination.
5. Cryoprecipitate.
6. Platelet function tests.
7. Buffy coat.
8. Platelet rich plasma (PRP).
9. Donor reactions.
10. Donor referral.

[LN 0818]

AUGUST 2018

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the causes, Patho-physiology and primary test profile for Disseminated intravascular coagulation.
2. Genetics, Synthesis and formation ABO blood groups.
3. Recruitment and retention of voluntary blood donor.

II. Write notes on:

(8 x 5 = 40)

1. Von willebrand disease.
2. HLA in allogenic bone marrow transplantation.
3. Lab diagnosis for Thrombotic disorders.
4. Quality control of Fresh frozen plasma.
5. Bombay blood groups.
6. Bio-safety in blood bank.
7. Coombs Test.
8. Platelet function test.

III. Short answers on:

(10 x 3 = 30)

1. Write two common methods for Hb estimation in blood donor.
2. Point of care testing in coagulation Lab.
3. Primary haemostasis.
4. Bethesda unit.
5. Rh antibodies.
6. Single donor platelets.
7. Anti- Phospholipid Antibodies.
8. Blood bank refrigerator.
9. Fibrinogen structure.
10. Auto-Antibodies.

[LO 0219]

FEBRUARY 2019

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Describe the Fibrinolytic pathway and its products.
2. Draw a diagram of basic Immunoglobulin structure and write about the characteristic immunoglobulins significant for blood banking.
3. Red cell anticoagulants and preservatives.

II. Write notes on:

(8 x 5 = 40)

1. Hemophilia A.
2. Quality control of platelets concentrate.
3. Sub groups of blood group A.
4. Voluntary Blood Donor selection criteria.
5. The Anti-Globulin Test.
6. Compatibility testing.
7. HLA and disease Association.
8. Internal Auditing in blood bank.

III. Short answers on:

(10 x 3 = 30)

1. Landsteiner's law.
2. Vitamin K – Dependent Coagulation factors.
3. Role of Platelets in hemostasis.
4. Type –I Von Willebrand Disease.
5. Weak D Test.
6. Apheresis.
7. Define Thrombophilia.
8. Cryo- precipitates.
9. Gel Technology.
10. Perfluorocarbons.

[LP 0819]

AUGUST 2019

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Pre-transfusion Compatibility Testing.
2. What is window period? Write about the mandatory blood donor screening Test done for transfusion transmitting infection in India.
3. Write about the hereditary platelet function defects and its laboratory diagnosis.

II. Write notes on:

(8 x 5 = 40)

1. Thrombophilia.
2. Quality control of packed red cell.
3. Pre-analytical variables including sample collection in coagulation assays.
4. D-DIMER.
5. Hemolytic Disease of Newborn.
6. First line coagulation test.
7. HLA typing.
8. Duffy blood group.

III. Short answers on:

(10 x 3 = 30)

1. Tissue factor.
2. IgG Antibody.
3. Rh Antigen.
4. Autologous Transfusion.
5. Blood bank Freezer.
6. Clot solubility test.
7. Control plasma.
8. Antibody screening.
9. Principle and types of ELISA.
10. Pro-zone phenomenon.

[LQ 0220]

FEBRUARY 2020

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE**

Q.P. Code: 725031

Time: Three Hours

Maximum: 100 Marks

Answer all questions

I. Elaborate on:

(3 x 10 = 30)

1. Molecular mechanisms of Fibrinolysis and its degradation products.
2. Describe in detail about Anticoagulant preservatives solutions and additives solution used for Red blood cells and their storage time.
3. Role of HLA in Transplantation.

II. Write notes on:

(8 x 5 = 40)

1. Classify “A” subgroups.
2. Pre-Transfusion Testing.
3. Write about genetics and laboratory diagnosis of hemophilia.
4. Weak D.
5. Lupus anticoagulant.
6. Write about the basic structures of an antibody.
7. Auditing in Blood Bank.
8. Patho–physiology of Rh - Hemolytic Disease of the fetus and Newborn (HDFN).

III. Short answers on:

(10 x 3 = 30)

1. Gel technology.
2. Von willebrand Factor.
3. Serine protease inhibitor (SERPIN).
4. ‘Window period’.
5. International Normalized Ratio.
6. Types of voluntary blood Donors.
7. Apheresis.
8. Cryo-precipitate.
9. Recombinant Factor VIIa.
10. Direct Antiglobulin Test.

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

[LR 1220]

**DECEMBER 2020
(AUGUST 2020 EXAM SESSION)**

Sub. Code: 5031

**BACHELOR IN MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR
PAPER I – COAGULATION & TRANSFUSION MEDICINE
Q.P. Code: 725031**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Molecular mechanisms of Fibrinolysis and its degradation products.
2. Describe in detail about Anticoagulant preservatives solutions and additives solution used for Red blood cells and their storage time.
3. Role of HLA in Transplantation.

II. Write notes on:

(8 x 5 = 40)

1. Classify “A” subgroups.
2. Pre-Transfusion Testing.
3. Write about genetics and laboratory diagnosis of hemophilia.
4. Weak D.
5. Lupus anticoagulant.
6. Write about the basic structures of an antibody.
7. Auditing in Blood Bank.
8. Patho–physiology of Rh - Hemolytic Disease of the fetus and Newborn (HDFN).

III. Short answers on:

(10 x 3 = 30)

1. Gel technology.
2. Von willebrand Factor.
3. Serine protease inhibitor (SERPIN).
4. ‘Window period’.
5. International Normalized Ratio.
6. Types of voluntary blood Donors.
7. Apheresis.
8. Cryo-precipitate.
9. Recombinant Factor VIIa.
10. Direct Antiglobulin Test.

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

[AHS 0122]

JANUARY 2022

Sub. Code: 5031

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR (Regulation from 2010-2011)

PAPER I – COAGULATION & TRANSFUSION MEDICINE

Q.P. Code: 725031

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Explain in detail the Pathogenesis, inheritance pattern, clinical features and Lab diagnosis of Hemophilia A.
2. Elaborate the Pathogenesis and lab investigations of Disseminated Intravascular Coagulation.
3. Explain in detail about the criteria for selection of blood donors and add a note on screening tests.

II. Write notes on:

(8 x 5 = 40)

1. Causes and laboratory diagnosis of Hypercoagulable state.
2. Hemolytic disease of Newborn.
3. Blood substitutes.
4. Prothrombin time.
5. Quality assurance in Coagulation lab.
6. Fresh Frozen plasma.
7. Platelet function tests.
8. Transfusion in Neonates.

III. Short answers on:

(10 x 3 = 30)

1. Reverse blood grouping.
2. Mention three causes for prolonged Activated Partial Thromboplastin time (APTT).
3. Mention the antigens and antibodies in each of the ABO Blood groups.
4. Fibrinogen assay.
5. Enumerate the methods of Bleeding Time and its Normal value.
6. List three acquired coagulation disorders.
7. Methods of doing blood grouping. Which is the best method?
8. What is the shelf life of different anticoagulants used in Blood Bank?
9. Preparation and uses of Cryoprecipitate.
10. Bernard Soulier syndrome.

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

[AHS 0922]

SEPTEMBER 2022

Sub. Code: 5031

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR (Regulation from 2010-2011)

PAPER I – COAGULATION & TRANSFUSION MEDICINE

Q.P. Code: 725031

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Write about Role of Vascular Phase in Hemostasis and abnormalities in Primary Hemostasis.
2. Write about the principle of the Anti-globulin test. List the sources of error associated with performance of the anti globulin test.
3. Blood donor Medical Assessment.

II. Write notes on:

(8 x 5 = 40)

1. Write the classification and laboratory diagnosis Von Willie brand disease.
2. Rh Alleles inheritance.
3. Coagulation Screening Test.
4. Transfusion Transmitted infections -screening test in blood bank.
5. Random donor platelets.
6. Serological typing of HLA Antigens.
7. Quality control of ANTI-A Anti Sera.
8. Platelet agitator.

III. Short answers on:

(10 x 3 = 30)

1. Bombay blood group.
2. Co-dominance.
3. Phenotype.
4. ELISA.
5. Thrombin.
6. Autologous transfusion.
7. Gel technology.
8. Types of Blood bag used in blood banks.
9. DIC.
10. Irregular Antibodies.

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

[AHS 0423]

APRIL 2023

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – COAGULATION AND TRANSFUSION MEDICINE
Q.P. Code: 725031**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Discuss in detail about the laboratory diagnosis of bleeding disorders.
2. Describe the Principle, method and Significance of Coombs test.
3. Explain in detail about the Transfusion Transmitted diseases and their lab diagnosis.

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

1. Quality Assurance in Blood banking.
2. Cryoprecipitate.
3. Donor Selection criteria.
4. Coagulation Pathway.
5. Cross matching.
6. Methods of blood grouping.
7. Autologous transfusion.
8. Von Willebrand disease.

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

1. Composition of CPDA.
2. Enlist four blood group systems.
3. Bombay Blood Group.
4. Idiopathic Thrombocytopenic Purpura.
5. Vitamin K dependent clotting factors.
6. Give three conditions for permanent deferral of blood donor.
7. Window period.
8. What is the temperature at which platelets are stored? Give two indications for Platelet transfusion?
9. H antigen.
10. Enumerate three Natural inhibitors of coagulation.

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

[AHS 1123]

NOVEMBER 2023

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – COAGULATION AND TRANSFUSION MEDICINE
Q.P. Code: 725031

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Write the principle of Anti-Globulin Test. List the source of error associated with performance of Anti-Globulin Test.
2. Discuss about the Current evidence supports concepts of Coagulation cascade.
3. Write in detail about the antigenic structure, pathology and laboratory diagnosis of Human Immuno Deficiency Virus?

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

1. Cryo-preservation of red blood cells.
2. Rh Antibodies.
3. ABO- Hemolytic Disease of the fetus and Newborn(HDFN)
4. Refrigerated centrifuge.
5. Quality indicators in blood bank.
6. Methods of HLA Antigen typing.
7. Blood Substitutes.
8. Factor VIII Inhibitor.

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

1. Factors which influence Antigen Antibody Reactions
2. Blood bags used in blood banks.
3. Rapid plasma Reagin test (RPR).
4. Landsteiner's Law.
5. Anti coagulants used for Hemostasis Test.
6. Fresh Frozen Plasma.
7. Quality Control of Packed Red cell.
8. D-dimer.
9. Composition of CPDA-1.
10. Plasminogen.

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

[AHS 0424]

APRIL 2024

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – COAGULATION AND TRANSFUSION MEDICINE
Q.P. Code: 725031**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Describe the Laboratory diagnosis of Bleeding disorders.
2. Elaborate notes on Primary and Secondary Thrombophilia disorders.
3. Define Types of Blood collection bags. Discuss about Anticoagulant Solutions used in the Blood bank.

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

1. HLA typing in Transplantation.
2. Infectious disease screening in the Blood bank.
3. Auditing in Blood Bank.
4. Write about Direct Anti-Human Globulin Test.
5. Thrombocytosis
6. Discuss in detail on types of Donor deferral
7. Blood substitutes
8. Hemolytic disease of New born.

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

1. Circulating anticoagulants.
2. Blood Donor Motivation.
3. Vitamin K deficiency.
4. PT and INR.
5. Hemolytic Uremic Syndrome.
6. Red cell suspensions.
7. Fibrin degradation product.
8. Lectins in Blood Bank.
9. Monoclonal antibodies in Blood bank.
10. Factor V Leiden mutation.

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

[AHS 0125]

JANUARY 2025

Sub. Code: 5031

**B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – COAGULATION AND TRANSFUSION MEDICINE
Q.P. Code: 725031**

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Define Thrombocytopenia. Discuss in detail about types of Thrombocytopenia.
2. Components preparation and indications, storage in blood bank.
3. Discuss about method of Prothrombin time and significance of International Normalized Ratio.

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

1. Automation Systems in the coagulation lab.
2. Coombs test and its significance.
3. Fibrin Clot Formation and Stabilization.
4. Discuss the test method of Bleeding Time.
5. HIV antibody testing.
6. Other Red Cell Antigens and their antibodies and clinical significance.
7. Blood substitutes.
8. Quality Control testing for ABO antisera.

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

1. Platelet Agitator.
2. Perfluorocarbons.
3. Thromboelastography.
4. Autologous transfusions.
5. Diagnosis of Von Willebrand Disease.
6. Low Ionic Strength Solution.
7. Hereditary Vascular Abnormality.
8. Adverse Donor Reaction.
9. Recombinant Factor Concentrates.
10. Kallikrein Factor.

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

[AHS 0425]

APRIL 2025

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY
THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)
PAPER I – COAGULATION AND TRANSFUSION MEDICINE
Q.P. Code: 725031

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. What are Blood components? How they are stored? What are their uses?
2. What is Window period? Write about the mandatory blood donor screening test done for transfusion transmitting infection in India.
3. Explain the Coagulation pathway. What are the tests you will do to investigate a Bleeding disorder?

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

1. Hemophilia A.
2. Organization of Blood Donation Camp.
3. Quality control of platelet concentrate.
4. Genetics and Biochemistry of ABO blood group.
5. Antiglobulin test.
6. Blood donor selection criteria.
7. Describe the principle of the copper sulfate method for haemoglobin estimation. Give two reasons why it is a popular method for haemoglobin estimation of donors in the blood bank.
8. Delayed haemolytic transfusion reactions.

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

1. Bombay and Para Bombay Phenotype.
2. What is Auto Immune Hemolytic Anemia (AIHA) and any two causes for AIHA.
3. Define the abbreviations HLA and MHC.
4. List the information that is required to be on the blood unit label.
5. What is rouleaux formation? How does this interfere in blood grouping and typing?
6. What is a titre? How would you determine the anti-D titre in a pregnant mother?
7. Blood substitutes.
8. Biosafety level 2 precautions as applied in the Blood Bank setting.
9. What is Cryobath in Blood Bank setting?
10. Lupus anticoagulant.

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

[AHS 1125]

NOVEMBER 2025

Sub. Code: 5031

B.Sc. MEDICAL LABORATORY TECHNOLOGY

THIRD YEAR (Regulations 2010-2011 & 2018-2019 onwards)

PAPER I – COAGULATION AND TRANSFUSION MEDICINE

Q.P. Code: 725031

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Pre-transfusion Compatibility Testing.
2. Red cell anticoagulants and preservatives.
3. Draw a diagram of Basic immunoglobulin structure and write about the characteristic Immunoglobulins significant for blood banking.

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

1. Hybridoma technique.
2. Vitamin – K Dependent coagulation factor.
3. Plasma components.
4. Describe various serological markers for Hepatitis B virus infection.
5. What is Prothrombin time and International Normalized Ratio?
6. Acute hemolytic transfusion reaction.
7. Quality Assurance in Blood banking.
8. Strategies for blood donor motivation.

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

1. Weak D.
2. Compare Random donor platelet concentrates and Single donor platelet concentrates (any two).
3. What is the most commonly used specimen for coagulation studies? What are the precautions taken for preparing specimens for coagulation studies?
4. What is Bombay Blood group? What are its characters? Why is it that a person of Bombay blood group cannot receive blood group O?
5. Laboratory tests performed on donor blood to detect Human Immunodeficiency Virus infection.
6. Thrombophilia.
7. Name the Apheresis derived blood components.
8. If the father is AB and mother O, what are the possible genotypes of the children?
9. What is Cryoprecipitate? Name the conditions in which this product can be used.
10. State the storage temperatures and storage limits for each component.
