

**[KS 190]****Sub. Code : 2084**

M.D. DEGREE EXAMINATION.

Branch XXI — Immunohaematology and  
Blood Transfusion

Paper IV — RECENT ADVANCES IN TECHNOLOGY

**Q.P.Code : 202084**

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

- I. Essay : (2 × 20 = 40)
1. Discuss and describe the technological advances and future trends in blood banking.
  2. Discuss the medicolegal and ethical aspects of providing transfusion services.
- II. Write short notes on : (10 × 6 = 60)
1. Sociolegal aspects of paternity testing.
  2. Software systems in the blood bank.
  3. Bone Marrow Transplantation.
  4. New technology and techniques in apheresis.
  5. HLA gene products.
  6. Interpretation of Western Blot result in HIV.
  7. Validation process in the blood bank.
  8. Use of bar codes in the blood bank.
  9. Transfusion alternatives in transfusion medicine.
  10. Automation systems in the blood bank.
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March 2009

**M.D. DEGREE EXAMINATION**

[KU 190]

Sub. Code: 2084

**Branch XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION**

**(For candidates admitted upto 2007-2008)**

**Paper IV – RECENT ADVANCES IN TECHNOLOGY**

*Q.P. Code : 202084*

**Time : Three hours**

**Maximum : 100 marks**

**Draw suitable diagram wherever necessary.**

**Answer ALL questions.**

**I. Essay questions:**

**(2 x 20 = 40)**

1. What is meant by the terms 'window period' and 'residual risk' in relation to microbiological screening of the blood supply? Critically evaluate the measures which may be taken to reduce the residual risk of transfusion transmissible viral infections in the developing world.
2. Hemovigilance.

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Pathogen inactivation of cellular blood products.
2. Stem cell plasticity.
3. Various adsorption columns used for therapeutic apheresis.
4. Use of microarray in transfusion medicine.
5. Stealth red blood cells.
6. Improved techniques in red cell serology.
7. Blood inventory management.
8. Yersinia enterocolitica.
9. Platelet gel.
10. Multicomponent collection.

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February 2010

**M.D. DEGREE EXAMINATION**

[KW 190]

**Sub. Code: 2084**

**Branch XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION**

**Paper IV – (for candidates admitted upto 2007-2008) and  
Part II / Paper IV – (for candidates admitted from 2008-2009 onwards)**

**Paper IV – RECENT ADVANCES IN TECHNOLOGY**

*Q.P. Code : 202084*

**Time : Three hours**

**Maximum : 100 marks**

**Draw suitable diagram wherever necessary.**

**Answer ALL questions.**

**I. Essay questions:**

**(2 x 20 = 40)**

1. Describe the process of umbilical cord blood banking and transplantation.
2. Discuss the Blood Bank Information Systems.

**II. Write short notes on :**

**(10 x 6 = 60)**

1. Bone marrow storage and processing.
2. Immunotherapy.
3. Plasma protein production by recombinant DNA technology.
4. Outpatient and home transfusions.
5. Peripheral blood stem cell collection.
6. Voluntary and mandatory standards in blood banking.
7. Basics of liability in blood bank.
8. Transcription mediated amplification technology.
9. Socio legal aspects related to blood banking.
10. HLA typing by DNA.

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MAY 2011

[KY 190]

Sub. Code: 2084

**M.D. DEGREE EXAMINATION**

**BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRASFUSION**

**RECENT ADVANCES IN TECHNOLOGY**

*Q.P. Code : 202084*

**Time : 3 hours  
(180 Min)**

**Maximum : 100 marks**

**Answer ALL questions in the same order.**

**I. Elaborate on :**

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

- |  |    |    |    |
|--|----|----|----|
| 1. Critically evaluate the measures which may be taken to reduce the residual risk of transfusion transmitted viral infections in India. | 11 | 35 | 15 |
| 2. Flow cytometry: basic principle and its application in transfusion medicine.  | 11 | 35 | 15 |

**II. Write notes on :**

- |   |   |    |   |
|---|---|----|---|
| 1. CFU – Assay.   | 4 | 10 | 7 |
| 2. Discuss various products available for management of Hemophilia A. | 4 | 10 | 7 |
| 3. Intravenous Immunoglobulin.  | 4 | 10 | 7 |
| 4. Molecular methods of ABO grouping.                                 | 4 | 10 | 7 |
| 5. Topical hemostatic agents.   | 4 | 10 | 7 |
| 6. Stealth RBCs.  | 4 | 10 | 7 |
| 7. Proteomics and its application in Transfusion Medicine.            | 4 | 10 | 7 |
| 8. Transcription Mediated Amplification.                              | 4 | 10 | 7 |
| 9. Solvent Detergent (SD) treated fresh frozen plasma.                | 4 | 10 | 7 |
| 10. Donor Lymphocyte Transfusion.                                     | 4 | 10 | 7 |

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APRIL 2012

[LA 190]

Sub. Code: 2084

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

RECENT ADVANCES IN TECHNOLOGY

Q.P. Code : 202084

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

I. Elaborate on :

	Pages (Max.)	Time (Max.)	Marks (Max.)
1. Discuss about ABO incompatible Renal transplantation and the strategies to improve graft survival in the same.	16	35	15
2. Discuss about the various emerging infections threatening the safety of Blood supply in India.	16	35	15

II. Write notes on :

1. Describe Peripheral Blood stem cell collection and mention the indications for its use.	4	10	7
2. Discuss about public and private cord Blood Banking	4	10	7
3. Discuss the procedure and indications for therapeutic Apheresis.	4	10	7
4. Discuss about various methods for pathogen inactivation of Blood products.	4	10	7
5. Discuss about proteomics in Transfusion Medicine.	4	10	7
6. Dendritic cell therapy in malignancies of head and neck area.	4	10	7
7. Heamovigilance.	4	10	7
8. Discuss about Recombinant DNA technology.	4	10	7
9. Plasma Fractionation.	4	10	7
10. Critically evaluate the measures to be taken to reduce the residual risk of transfusion transmissible viral infections in our Country.	4	10	7

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(LC 190)

APRIL 2013

Sub. Code: 2084

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

RECENT ADVANCES IN TECHNOLOGY

*Q.P. Code: 202084*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate:**

**(2x15=30)**

1. Role of Nucleic Acid Testing in blood safety.
2. Indications of Therapeutic Plasma Exchange and the role of Immuno-adsorption technology in Therapeutic Plasma Exchange.

**II. Write Notes on:**

**(10x7=70)**

1. Platelet additive solutions
2. Universal RBC
3. Viral inactivation in Transfusion Medicine
4. Pathophysiology of Transfusion Related Acute Lung Injury ( TRALI )
5. Lectins in Transfusion Medicine
6. Gene therapy
7. Application of Micro-array technology in Transfusion Medicine
8. Pharmacological alternatives to transfusion
9. Tools for detection of bacterial contamination in platelets
10. Multi-component collection.

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(LE 190)

APRIL 2014

Sub. Code:2084

**M.D. DEGREE EXAMINATION  
BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION**

**RECENT ADVANCES IN TECHNOLOGY**

*Q.P.Code: 202084*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X15=30)**

1. Error management and reporting in transfusion practice. Briefly discuss various Hemovigilance systems.
2. Measures which can be taken to reduce residual risk of transfusion transmitted viral infections.

**II. Write notes on:**

**(10X7=70)**

1. Double unit red blood cell collection.
2. Current status of pathogen inactivation of blood components.
3. Replacement therapy in Hemophilia A.
4. Gene therapy and its role in transfusion medicine.
5. Principle of chemiluminescence technique and its applications in Transfusion Medicine.
6. Transcription mediated amplification.
7. CFU assay.
8. Intravenous immunoglobulins – preparation and uses.
9. Molecular blood grouping and its applications.
10. Donor lymphocyte infusion.

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