



**RAN-3824**

**M.D. Examination**

**March / April - 2019**

**Paper - I Basic Science related to Immunohematology & Blood Transfusion**

**Time: 3 Hours ]**

**[ Total Marks: 100**

**सूचना : / Instructions**

नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी.  
Fill up strictly the details of signs on your answer book

Name of the Examination:

M.D.

Name of the Subject :

Paper - I Basic Science related to Immunohematology & Blood Transfusion

Subject Code No.: 3 8 2 4

Seat No.:

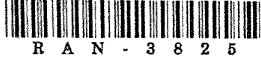
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Student's Signature

**Instruction:**

- (1) Answer all questions
- (2) Draw diagrams wherever necessary

1. Describe normal human platelet structure and discuss its role in hemostasis [25]
2. Describe Regulatory T cells (Tregs) and discuss their role in immune tolerance with respect to autoimmune conditions [25]
3. Write short notes on any FIVE of the following: [5 X 10 = 50]
  - (a) Potassium (K<sup>+</sup>) levels in red cell supernatant during storage and its applied aspects
  - (b) Mendelian theory of inheritance
  - (c) Membrane attack complex (MAC) in complement activation
  - (d) Type I hypersensitivity reaction and its applied aspects in transfusion medicine
  - (e) CFU – Assay
  - (f) Anamnestic response and its applied aspect in Transfusion Medicine



**RAN-3825**

**M.D. Examination**

**March / April - 2019**

**Paper II - Immunohematology, Immunogenetics  
and Applied Serology**

**Time: 3 Hours ]**

**[ Total Marks: 100**

**सूचना : / Instructions**

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Name of the Examination:

M.D.

Name of the Subject :

Immunohematology, Immunogenetics and Applied Serology

Subject Code No.: 3 8 2 5

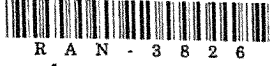
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Student's Signature

- Answer all questions
- Draw diagrams wherever necessary

1. How will you resolve a case of incompatible cross match and provide appropriate unit of red cells? [25]
2. Compare and contrast MHC Class I and MHC II antigens and discuss HLA & Disease association [25]
3. Write short notes on any FIVE of the followings [5X 10 = 50]
  - (a) Compare and contrast ABO and RhD hemolytic disease of newborn (HDN).
  - (b) Acquired B phenomenon
  - (c) Clinically significant red cell antibodies
  - (d) Reagent red cell panels
  - (e) Lectin in blood group serology
  - (f) High Titer Low Avidity (HTLA) antibody



**RAN-3826**

**M.D. Examination**

**March / April - 2019**

**Immunoheruatology & Blood transfusion**

**Paper III - Blood Bank Operation, Blood Donor Organization,  
Technology of Components and Clinical Hemotherapy**

**Time: 3 Hours ]**

**[ Total Marks: 100**

**સૂચના : / Instructions**

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
Fill up strictly the details of signs on your answer book

Name of the Examination:

M.D.

Name of the Subject :

Immunoheruatology & Blood transfusion

Subject Code No.: 3 8 2 6

Seat No.:

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Student's Signature

(1) Answer all questions.

(2) Draw diagrams wherever necessary.

1. Discuss the role of Transfusion Medicine Consultant in ensuring blood transfusion safety in the hospital [25]

2. Describe transfusion support in an adult patient undergoing orthotropic liver (OLT) transplantation [25]

3. Write short notes on any FIVE of the followings [5X 10 = 50]

(a) Compare and contrast Transfusion related acute lung injury (TRALI) and transfusion associated circulatory overload (TACO)

(b) Pre storage leukofiltration

(c) "Directed donations should be discouraged." Comment on this statement giving reasons

- (d) Plasma policy of India
  - (e) Hypocalcemic reactions following platelepheresis
  - (f) Estimation of blood needs of the hospital
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**RAN-3827**

**M.D. Examination**

**March / April - 2019**

**Paper IV - Recent Advances and Technology**

**Time: 3 Hours ]**

**[ Total Marks: 100**

**सूचना : / Instructions**

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Name of the Examination:

M.D.

Name of the Subject :

Paper IV - Recent Advances and Technology

Subject Code No.: 3 8 2 7

Seat No.:

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Student's Signature

- (1) Answer all questions
- (2) Draw diagrams wherever necessary

1. Describe the principle of Extracorporeal Photopheresis. Discuss its clinical applications [25]
2. Nucleic Acid Testing (NAT) for transfusion transmitted infections in India: Discuss rationale and technologies. [25]
3. Write short notes on any FIVE of the followings (5X 10 = 50)
  - (a) Applied aspects of platelet derived growth factors in clinical practice
  - (b) Induced Pluripotent Stem Cells
  - (c) Risk mitigation strategies for transmission of Dengue infection through blood transfusion in India

- (d) Applications of flow cytometry in transfusion medicine
  - (e) Applications of molecular testing in transfusion medicine
  - (f) RFID Technology and its use in Transfusion Medicine
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