[LQ 187] AUGUST 2020 **Sub. Code: 3011**

(MAY 2020 SESSION)

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER I – BASIC APPLIED ASPECTS RELATED TO TRANSFUSION MEDICINE

Q.P. Code: 203011

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Metabolism of Glucose in the RBC and its applied importance in transfusion medicine. Add a note on the mechanisms involved in the transport of glucose from plasma.
2. Iron metabolism in health and disease. Biochemical markers of iron deficiency.

II. Short notes: **(10 x 7 = 70)**

1. Pathophysiology of hypovolemic shock and its management.
2. Different anticoagulants and preservatives used for blood and its components.
3. Complement system and its applied importance in transfusion medicine.
4. Pathophysiology of intravascular and extravascular haemolysis.
5. Regarding stem cells: a. what is a niche? b. What are the types? c. How are they regulated? d. How are they mobilized? e. What are the approved uses?
6. Regulatory T cells (Tregs) and their role in immune tolerance.
7. a. What is reticulated platelet? b. Methods of detection of reticulated platelets. c. Its importance in platelet transfusion.
8. a. Explain how the fibrinolytic system removes clots. b. List the activators and inhibitors of plasmin.
9. Laboratory diagnosis of G6PD deficiency and its applied aspects in transfusion medicine.
10. Structure of HIV and its transmission.

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[MD 0721] JULY 2021 **Sub. Code: 3011**

(MAY 2021 SESSION)

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER I – BASIC APPLIED ASPECTS RELATED TO TRANSFUSION MEDICINE

Q.P. Code: 203011

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Write in detail about "B" all (Humoral Immunity) and its role in clinical transfusion medicine.
2. Describe the mechanism of calcium metabolism during apheresis. Methods to prevent donor adverse events during platelet pheresis.

II. Short notes: **(10 x 7 = 70)**

1. Discuss cellular model of coagulation and explain how it helped in addressing the issues with intrinsic and extrinsic pathway of coagulation.
2. Describe in detail about hemoglobin structure. Add a note on oxygen dissociation curve.
3. Role of growth factors during hematopoiesis.
4. What are lectins and its role in transfusion medicine?
5. Describe about the basics of flowcytometry.
6. Role of lymphocytes in transfusion medicine.
7. Platelet additive solutions.
8. Role of conventional coagulation testing in the management of acute blood loss.
9. Physiology of blood donation.
10. Describe about plasticizer.

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

[MD 0522] **MAY 2022** **Sub. Code: 3011**

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER I – BASIC APPLIED ASPECTS RELATED TO TRANSFUSION MEDICINE

Q.P. Code: 203011

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Describe the structure and function of platelets and changes that occur with storage of platelet rich concentrates.

2. Describe the physiological changes in pregnancy that impact on transfusion practice in the setting of post partum haemorrhage.

II. Short notes: **(10 x 7 = 70)**

1. Partial D.
2. Principle and uses of leukodepletion.
3. Westgard rules.
4. Physiological changes during blood donation.
5. Platelet storage bags.
6. Discuss window period for viral infections screened in donors.
7. Adverse events during apheresis.
8. The luminex platform and it's uses in transplant immunology.
9. Column agglutination technology in transfusion medicine.
10. Red cell additive solutions.

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

[MD 0723] **JULY 2023** **Sub. Code: 3011**

(MAY 2023 EXAM SESSION)

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER I – BASIC APPLIED ASPECTS RELATED TO TRANSFUSION MEDICINE

Q.P. Code: 203011

Time: Three Hours **Maximum: 100 Marks**

I. Essay Questions: **(2 x 15 = 30)**

1. Describe various stages of Erythroid differentiation and enumerate the following at each stage of differentiation:
   a) Transcription factors
   b) Receptors for Hemopoietic growth factors
   c) Expression of specific proteins related to erythrocyte structure and function.

2. Normal Thromboelastograph [TEG], its basic principle, interpretation of abnormal values in diagnosis, appropriate transfusion support and other treatment options available.

II. Short notes: **(10 x 7 = 70)**

1. Glycolytic pathway with the pentose and 2, 3-DPG shunts of red cell metabolism.
2. Draw and explain the structure of red cell membrane-cytoskeleton system. Add a note on scanning electron microscopic appearance of red blood cells following prolonged storage.
3. Iron deficiency after blood donation and various mitigation strategies.
4. What is reticulated platelet? Methods of identification of reticulated platelets. Its importance in transfusion medicine.
5. Regarding stem cells: a) What is a Niche? b) What are the types?
   c) How are they regulated? d) How are they mobilized?
   e) What are the approved uses?
6. Inhibitors of blood coagulation and their main functions.
7. Pathophysiology of haemorrhagic shock.
8. Explain iron-induced oxidative damage to tissues by free radicals.
9. Occult Hepatitis B Virus Infection.
10. Validation of red blood cell quality and in vivo recovery.

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