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

[MD 1224] DECEMBER 2024 Sub. Code: 4062
(OCTOBER 2024 EXAM SESSION)

M.D. DEGREE EXAMINATION

IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER II – IMMUNO-HAEMATOLOGY, IMMUNOGENETICS AND APPLIED SEROLOGY (INCLUDING MOLECULAR BIOLOGY AND HLA)

Q.P. Code: 204062

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

I. Elaborate on: **(1 x 20 = 20)**

1. Describe in detail about classifications, etiopathogenesis, laboratory investigations and management of Autoimmune haemolytic anaemia.

II. Short notes: **(8 x 10 = 80)**

1. Chimerism.
2. Solid Phase adherence assay.
3. Lewis blood group system.
4. Explain about Poly agglutination and its Laboratory diagnosis.
5. Single Nucleotide polymorphism.
6. Reagent Red cells.
7. Fibrin Degradation products.
8. Define Human Leucocyte Antigen (HLA). Role of HLA system in relation to solid and Bone Marrow Transplantation.

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

[MD 0525] **MAY 2025** **Sub. Code: 4062**

M.D. DEGREE EXAMINATION

IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER II – IMMUNO-HAEMATOLOGY, IMMUNOGENETICS AND APPLIED SEROLOGY (INCLUDING MOLECULAR BIOLOGY AND HLA)

Q.P. Code: 204062

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

I. Elaborate on: **(1 x 20 = 20)**

1. Donor-specific HLA Antibodies.
   a) Mechanisms by which DSA induce graft damage.
   b) What are the consequences of DSA in transplantation?
   c) Detection of DSA with novel techniques.
   d) DSA desensitization.

II. Short notes: **(8 x 10 = 80)**

1. Discuss sex linked inheritance pattern in blood groups. Enumerate suitable examples
2. Duffy blood group system.
3. Describe the solid phase red cell adherence assay and its application.
4. a) DAT Negative Auto Immune Heamolytic Anemia (AIHA).
   b) What is Mitogen Stimulation Test (MS-DAT)?
   c) Methodologies Utilized to Abrogate Daratumumab Interference in Pretransfusion Testing.
5. Adsorption Techniques.
6. Polyagglutination and its Laboratory Diagnosis.
7. A pregnant woman with ruptured membranes is admitted, and the ordering provider orders a type and crossmatch. Two units are requested to be held for a C-section surgery. The patient's blood type is O-positive. The antibody screen is positive and the patient's plasma contains anti-S. The delivered infant's blood type is O-negative.
   a) What units should be selected for transfusion for the mother?
   b) What are the factors that contribute to pre-transfusion testing?
   c) Advantages and disadvantages of Type and Screening versus Type and Crossmatch.
8. Donor blood group Results as follows:

Forward					**Reverse**		
Anti-A	**Anti-B**	**Anti-AB**	**Anti-D_1**	**Anti-D_2**	**A_1 cells**	**B cells**	**O cells**
4+	4+	4+	4+	4+	1+	0	0

   a) How would you interpret these results?
   b) What testing would you perform next to resolve the discrepancy?
   c) What are Structural Characteristics of A1 and A2 RBCs.

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

[MD 1025] **OCTOBER 2025** **Sub. Code: 4062**

M.D. DEGREE EXAMINATION

IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

PAPER II – IMMUNOHAEMATOLOGY, IMMUNOGENETICS AND APPLIED SEROLOGY (INCLUDING MOLECULAR BIOLOGY AND HLA)

Q.P. Code: 204062

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

I. Elaborate on: **(1 x 20 = 20)**

1. Write elaborately about various categories of ABO discrepancies and resolution of each.

II. Short notes: **(8 x 10 = 80)**

1. Kidd blood group system.
2. H deficit phenotype.
3. Heparin induces thrombotic thrombocytopenia.
4. Pathophysiology of intravascular and extravascular haemolysis.
5. HIV structure and lab investigation for diagnosis of HIV infection.
6. A 25 year old female presented with Jaundice and pallor for 2 months. Her peripheral blood smear shows the presence of spherocytes. Reticulocyte count was increased. How you approach this case with lab investigations?
7. A patient presents with elevation of both PT and aPTT.
   a) What is the coagulation pathway involved?
   b) Mention the conditions that elevate both PT and aPTT.
8. A senior technician who operates in TTI screening for more than 10 years approaches the Medical Officer with false positive reaction in blank and diffuse background reactivity in all wells in a new kit supplied by a new manufacturer. What are all the precautions and documents we need to analyse before commissioning an Elisa testing kit from a new manufacturer? Also enumerate the specifications suggested by NBTC for Elisa kits for HIV screening.

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