

M.D. DEGREE EXAMINATION

BRANCH XXI – IMMUNOHAEMATOLOGY AND BLOOD TRANSFUSION

**PAPER II – IMMUNOHAEMATOLOGY, IMMUNOGENETICS AND
APPLIED SEROLOGY**

Q.P. Code: 202082

Time: Three Hours

Maximum: 100 Marks

I. Essay Questions:

(2 x 15 = 30)

1. Immunogenetics support for evaluation for a patient with Acute myeloid leukemia planned for a haplomatched allogenic bone marrow transplant.
2. Automation in immunohaematology – describe the different analytic modalities for immunohaematology testing with their relative merits and demerits.

II. Short notes:

(10 x 5 = 50)

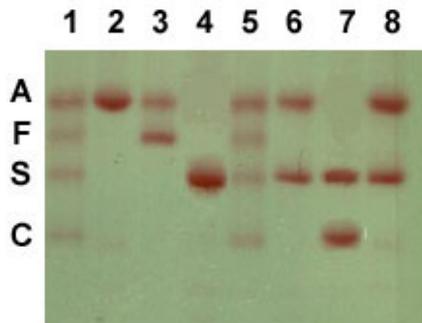
1. The Duffy blood group system.
2. Improving antigen- antibody reactions.
3. Du and its importance for blood transfusion.
4. Complement system.
5. INRA blood group.
6. Red blood cell filters.
7. Management of a patient with ITP.
8. Principles of estimation of residual risk for a transfusion transmissible infection.
9. Criteria to decide if a disease can be classified as a transfusion transmissible infection with examples.
10. Strategies to improve availability of plasma products in the country.

(2)

III. Reasoning Out:

(4 x 5 = 20)

1. A mother and father present to you for pre-conception counseling. The mother is shown in lane 8 and the father in lane 4. The father has a Hgb of 8.5 g/dL and an MCV of 88 fL.



- a) What is the probability for each of their pregnancies that the child will have a form of sickle cell disease?
- b) What is sickle cell crisis and how will you manage this patient?
- c) What would be transfusion strategy for a patient with sickle cell anemia?
2. A Patient is admitted with a Hb of 6 gm/dl 2 weeks after the transfusion of 3 units of Red cells, the initial serological results are as follows Blood Group: A Rh Positive DAT : Positive 2+ During the time interval since the last transfusion, the patient complained of no symptoms except fatigue and shortness of breath on exertion. The physical findings were normal. The patient's physician has contacted the blood bank requesting an investigation of this post transfusion episode.
- a) What type of a reaction is this?
- b) Which tests should be done on order to explain this adverse post transfusion reaction?
3. A Patient has the following serologic results

Anti A	Anti B	Anti AB	A cells	B Cells	O Cells
3+	3+	3+	1+	0	0

Auto control: Neg DAT: Neg

(3)

- a) How do you interpret the blood group?
 - b) What are all the test you will do and what advise you give to the clinician?
4. A 7 year old patient suffering from congenital sideroblastic anemia is planned for haematopoietic stem cell transplant with mother. HLA Typing performed showed as follows:

Patient					Donor (Mother)				
A	B	C	DRB1	DQB1	A	B	C	DRB1	DQB1
11:01	15:25	03:02	12:02	03:01	11:01	15:25	04:03	12:02	03:01
24:02	58:01	04:03	12:02	03:01	24:02	51:01	07:02	15:01	06:02

- a) What is the HLA- match between patient and donor?
- b) What other investigations are required in pre-transplant workup?
- c) Give a brief outline for desensitization protocol in above patient if he is positive for weak Donor Specific Antibodies?

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