Q.1  a) What is Apheresis?
     b) Enlist types of Apheresis.
     c) List five most important indications.

Q.2  Outline the management options for a 57 years old newly diagnosed B-cell chronic lymphocytic leukaemia (ZAP-70 negative and trisomy 12).

Q.3  A gynaecologist is worried about a 66 years old female operated upon for PV bleeding last week who still continue to bleed despite no surgical cause. On reviewing her, you noted that the lady had bicytopenia and leucocytosis (monocytosis of 1.5x10^9/l and agranular neutrophils on peripheral blood film). You also noted that she has persistent anaemia and splenomegaly.

   a) What is your differential diagnosis?
   b) What advice will you give to the gynaecologist?
   c) What investigations will you advise in order to reach to a diagnosis?

Q.4  A middle aged Grade 3 follicular lymphoma patient is referred to your clinic for treatment. He showed a good partial response after 6 cycles of R-CHOP.

   a) Between maintenance Rituximab and auto-transplant, what will you choose for the continuation of his management?
   b) What is the evidence base of your answer?
Q.5 A 39 years old chronic phase CML received tablet Imatinib mesylate 400 mg for 12 months since diagnosis. His cytogenetics and molecular responses were as followed:

At 6 months: 70% metaphases showed Ph chromosomes, bcr-abl transcript detected.

At 12 months: 40% metaphases showed Ph chromosomes, bcr-abl transcript detected.

a) What is the type of cytogenetic and molecular response this patient has manifested at 12 months?
b) What treatment option will you consider for this patient now?
c) What is the evidence base of your decision?

Q.6 A 9 months old girl presented with a history of fever, abdominal distension and irritability. Her CBC revealed a Hb 6.2 gm/dl, WBC 132x10^6/l, Platelet count 13x10^6/l. Peripheral blood film showed 90% small blasts with high N:C ratio and inconspicuous nucleoli. Cytogenetics revealed t(4;11) and hypodiploidy.

What is the significance of MLL gene in a newly diagnosed ALL in term of decision of treatment?

Q.7 A 3 years old girl suffering from Diamond Blackfan’s anaemia, is still transfusion dependent inspite of her treatment. How will you counsel her parents regarding other treatment options?

Q.8 How will you correct functional iron deficiency in a patient on renal replacement therapy who requires erythropoietin?

Q.9 As a newly appointed consultant haematologist in your hospital, you are asked to write a standard operating procedure (SOP) for local obstetricians for the screening of haemoglobinopathy in antenatal setting as a measure to reduce the incidence of beta thalassaemia major in your community. Please write an executive summary of your recommendations?
Q.10 A 50 years old woman presented with dyspnea and central chest pain; investigations revealed an Hb of 7.0 g/dl and a positive Direct Anti-globulin Test that revealed IgG, but not complement on the surface of her red cells. Her reticulocyte count was 7%. She had never been previously transfused. Multiple red cell cross matches with many red cell units were incompatible. For an impending myocardial infarction, the cardiologist wants to proceed to angiography/angioplasty.

a) Which blood group units will you issue and why?
b) What further steps will you take in the blood bank to identify the type of antibody (ies)?
Q.11 You are asked to review a patient in Surgical ICU who developed marked petechial rash all over her body on 10th day after CABG. Her post-operative period was unremarkable. Cardiac Surgeon requested you to review the patient and tell him about the cause of this incident and your plan of management?

Q.12 A 7 years old boy presented with a history of easy bruising with episodes of epistaxis since childhood. His elder sister has similar complaints.

His CBC showed: 
- Haemoglobin: 9 g/dl
- Platelets: 158x10⁹/l
- WBC: 05 x10⁹/l.

His coagulation screen revealed:
- Bleeding Time: >20 min (Normal 2 – 9 min)
- Prothrombin Time: Normal
- Activated Partial Thromboplastin Time: Normal

a) Give three differential diagnoses.
b) How will you proceed to reach a final diagnosis?
c) Give management outline.

Q.13 a) What is the significance of a platelet count of 40 in a twenty years old primigravida who is recently diagnosed as a case of vWD?

b) Her obstetrician informs you that she is at 36 weeks of pregnancy and has a history of gum bleeding off & on. What management do you recommend for delivery?

Q.14 A lady known to have chronic ITP gets bruises off and on. Her recent platelet count is 28. Her husband is worried about risk of bleeding during Hajj trip three months later. They want advice from you about their travel plan? What will be your advice for her to facilitate their travel plans?
Q.15 A surgeon is concerned about a 70 years old patient who has a platelet count $700 \times 10^9/l$ who is scheduled for a hernia repair and who has complains of transient ischaemic attacks. What further investigation and management do you recommend?

Q.16 Following delivery of the first baby girl, a 24 years old lady developed right leg DVT during puerperium. Intravenous infusion of heparin was initiated after sending blood samples. Thrombophilia screen detected anti-thrombin deficiency. During first 48 hours of starting anticoagulation, APTT did not rise above 10 seconds of the control value. She developed thrombosis in pelvic veins on left side.

a) What are the possible causes of development of second thrombosis?
b) How would you manage current problem?

Q.17 A 50 years old man recently diagnosed as MDS (refractory cytopenia with multi-lineage dysplasia), suffered a severe reaction 10-15 minutes after the start of a platelet transfusion. He had shivering, dizziness, vomiting, tachycardia, profuse sweating and fall in blood pressure.

a) What could be the causes of such a reaction?
b) What actions will you take in this case?
c) How could these reactions be prevented?

Q.18 A 26 weeks pregnant lady is admitted in Obs/Gynae ward with a history of pervious still birth. Her laboratory workup confirmed Haemolytic Disease of Newborn (HDN). The gynaecologist has planned intrauterine blood transfusion to the foetus and has asked for consultation.

a) What advice will you give regarding the procedure?
b) What precautions should be taken to select and prepare blood for intrauterine transfusion?
Q.19 A 65 years old patient developed fever, pancytopenia, jaundice and diarrhea 10 days after CABG. He received 4 units of fresh whole blood during surgery. Blood was tested for standard transfusion microbiology and serology. The donors were healthy family members of the patient.

a) What is the possible cause of this presentation?
b) How could you prevent such a condition?

Q.20 a) Name five important complications of splenectomy.
b) How will you prevent these complications?

The End