



The Royal College of Pathologists

Part 1 examination

Haematology: First paper

Tuesday 25th September 2007

Candidates must answer all FOUR questions

Time allowed: 3 hours

1. Prepare a guideline for your hospital on the indications for the use of FFP and cryoprecipitate.
2. A 21 year old lady with sickle cell anaemia (HbSS) presents at 8 weeks gestation in her first pregnancy. She has suffered several severe sickle crises in the past and has been on hydroxycarbamide at a dose of 1g daily for the past two years. Critically discuss the management options.
3. "Treatment for haematological malignancies will move away from chemotherapy to more targeted biological therapy in the next 5 - 10 years". Critically discuss this statement, providing examples based on current clinical developments. What effects may this have on the providers of haematology treatment and services required to support their use?
4. What do you understand by the term 'direct thrombin inhibitors'? Why is there increasing interest in them? Critically evaluate the currently available agents and their indications.



The Royal College of Pathologists

Part 1 examination

Haematology: First paper

Tuesday 27 March 2007

Candidates must answer all FOUR questions

Time allowed: 3 hours

1. Prepare a patient information leaflet about blood transfusion, intended for adult patients scheduled for elective surgery attending a pre-admission clinic approximately 1 month prior to the date of admission.
2. A 47 year old publican presents with symptoms of breathlessness and a FBC reveals a Hb level of 6.5g/dl, WBC of $3.5 \times 10^9/l$ (Neuts $2.3 \times 10^9/l$) and Platelets of $75 \times 10^9/l$. The MCV is 105 fl. Describe your approach to investigation and management of this patient.
3. Critically evaluate the management options for a 22 year old woman who is 18 weeks pregnant and has just been diagnosed with AML M1? Her WCC is $110 \times 10^9/l$, Hb 6.5 g/dl, plt $20 \times 10^9/l$ and cytogenetics are normal. State clearly the management plan you would recommend and the reasons for your choice.
4. A 34-year-old woman is referred to you for counselling. Her father has severe haemophilia A (VIII:C <1IU/dl) and she is contemplating becoming pregnant. Discuss the issues that you would cover during the consultation. Six months later she is 5 weeks pregnant. How would you manage this pregnancy?



The Royal College of Pathologists

Part 1 examination

Haematology and Transfusion Medicine: First paper

Tuesday 19 September 2006

Candidates must answer FOUR questions ONLY

Time allowed: 3 hours

- 1 Discuss the investigation, diagnosis and management of a patient who presents with general malaise and is found to have an eosinophil count of $25 \times 10^9/l$.
- 2 You have been asked to help draft an antifungal policy for your Trust. Critically appraise the role of each available drug based on available published evidence and cost in the following situations:
 - (i) prophylaxis of fungal infection
 - (ii) treatment of culture-proven invasive pulmonary aspergillus fumigatus.
- 3 Critically evaluate the role of haemostasis screening tests (PT; APTT) in the pre-operative assessment of bleeding risk.

Please turn over for Questions 4 and 5

- 4 Write short notes on all of the following:
- (i) cold haemagglutinin disease
 - (ii) factor XI deficiency
 - (iii) mean platelet volume (MPV).
- 5 Critically evaluate the role of anti-CD20 monoclonal antibody therapy in haematological conditions associated with disordered auto-immunity. Write an outline business case for the use of this agent in those conditions in which you feel this is an appropriate therapy.



The Royal College of Pathologists

Part 1 examination

Haematology: Second paper

Tuesday 19 September 2006

Candidates **MUST** answer the first question
and any **THREE** of the remaining **FOUR** questions

Time allowed: 3 hours

- 1 Discuss current antenatal prophylaxis for haemolytic disease of the newborn. Critically evaluate methods for the quantitation of fetomaternal haemorrhage. Discuss the management of HDN due to Rh-incompatibility.
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- 2 Discuss the pathophysiology of paroxysmal nocturnal haemoglobinuria. Critically evaluate the guidelines for laboratory evaluation and management of this condition and their relationship to its pathophysiology.
 - 3 The detection of an inhibitor to coagulation in a patient may indicate a risk of haemorrhage or a risk of thrombosis. How is this possible? Discuss how these risks can be distinguished?

Please turn over for Questions 4 and 5

4 Critically evaluate the significance of all of the following associations:

- (i) FLT-3 abnormalities in AML
- (ii) JAK-2 abnormalities in myeloproliferative disorders
- (iii) Cyclin-D1 abnormalities in NHL.

5 Describe and justify your recommendations for the investigation and management of a 42 year old man who complains of fatigue and is found to have the following blood profile:

WBC $12 \times 10^9/l$ HB 145 g/l Platelets $1100 \times 10^9/l$



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 14 March 2006

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

- 1 A 35 year old woman consults her GP for a general health check prior to trying to start a family. She is found to have a platelet count of $950 \times 10^9/l$. Describe the investigation and advice you would offer. Critically evaluate the management options before and during pregnancy.
- 2 Discuss the physiological role of ADAMTS13. How is ADAMTS13 measured? Critically evaluate the evidence for the role of ADAMTS13 in the aetiology of the microangiopathies.
- 3 Critically evaluate currently available methods for assessing iron overload. Discuss the causes and clinical features of iron overload and its management.

Please turn over for Questions 4 and 5

- 4 A GP refers a 22 year old woman who has recently moved to his practice from overseas. She was diagnosed with Hodgkins lymphoma stage IVA at age 17 and was treated with ABVD and mantle radiotherapy. Detail the discussion you would have with her. Describe any investigations you would perform. Critically evaluate her future management.
- 5 Write short notes on each of the following:
- a) Severe congenital neutropenia
 - b) Felty's syndrome
 - c) Cyclical neutropenia



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 14 March 2006

HAEMATOLOGY

Second Paper

Candidates MUST answer the first question
and any **THREE** of the remaining **FOUR** questions

Time allowed - THREE HOURS

- 1 Discuss the reasons for the need to reduce the use of blood. Critically evaluate the strategies that may be used to achieve this and identify those strategies that you believe will be effective.
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- 2 Write short notes on each of the following:
 - a) 5q- syndrome
 - b) MALTomas
 - c) prognostic factors in chronic lymphocytic leukaemia
 - 3 Describe the pathogenesis of disorders that arise from defects of the red cell cytoskeleton. Critically evaluate the available diagnostic tests and the management of these disorders.

Please turn over for Questions 4 and 5

- 4 Critically evaluate the relative contributions of clinical history and laboratory tests in the diagnosis of heparin-induced thrombocytopenia (HIT). What are the important principles of management of a patient with this diagnosis?
- 5 A 56 year old woman presents with marked fatigue and widespread bruising. She has a haemoglobin of 56 g/l, a platelet count of $16 \times 10^9/l$ and a positive direct antiglobulin test. Discuss her investigation and management.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 20 September 2005

HAEMATOLOGY and TRANSFUSION MEDICINE

First Paper

*Candidates must answer **FOUR** questions **ONLY***

Time allowed - THREE HOURS

1. Discuss the available methods for measuring D-dimer. Critically review the indications and merits of measuring D-dimer levels.
2. A 54 year old woman presents with a Hb 7.8 g/dl, platelets $210 \times 10^9/l$, WBC $9.0 \times 10^9/l$, LDH 2500 (NR<280). The film shows spherocytes. The DAGT (Direct Coombs' test) is positive. Clinically there is no palpable lymphadenopathy, liver or spleen. How would you investigate this patient? What treatment options are available and when would you use them?
3. Briefly outline and critically evaluate point of care testing in haematology. How would you ensure the safety and quality of such a service?

Please turn over for Questions 4 and 5

4. Discuss the molecular basis, clinical presentation, investigation and management of an 18 year old female who is found to have combined factor V and VIII deficiency.
5. Write short notes on each of the following:
 - a) Hypereosinophilic syndrome
 - b) Novel agents in AML
 - c) Selection and care of matched sibling allogeneic donors



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 20 September 2005

HAEMATOLOGY

Second Paper

Candidates MUST answer the first question
And any THREE of the remaining FOUR questions

Time allowed - THREE HOURS

1. The Blood Safety and Quality Regulation (No 50) 2005 transposes two EU Directives (2002/98/EC and 2004/33/EC) into UK law, and comes into force from 8 November 2005. Describe the requirements on hospital blood banks contained in the Regulation(s) and / or the EU Directives. What are the necessary components of a quality system in a hospital blood bank?

2. Critically evaluate the utility of factors that can be used to assess the likelihood of recurrence after a first venous thrombotic event.
 3. The paediatricians ask you to see an infant suspected on the basis of neonatal screening to have beta thalassaemia major. Discuss how you would assess the child and detail the management plan you would put in place.

Please turn over for Questions 4 and 5

4. Write short notes on each of the following:
- a) POEMS syndrome
 - b) Management of a 20 year old female with Stage IIA nodular sclerosing Hodgkin's lymphoma with cervical and mediastinal lymphadenopathy
 - c) Post transplant lymphoproliferative disease.
- 5 A three year old child with severe haemophilia A under your care has developed an inhibitor shortly after starting prophylaxis. Critically evaluate therapeutic options and detail your recommended plan for future management.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 15 March 2005

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Discuss the mechanisms which may give rise to, and the possible consequences of, an isolated erythrocytosis. How does this understanding help with diagnosis and management?
2. Write short notes on:
 - (a) Proteasomes and their relation to haematological practice
 - (b) Assessment of iron status in the “anaemia of inflammation”
 - (c) Red cell folate and its laboratory assessment
3. Discuss the nature of non-Hodgkin’s lymphoma associated with HIV infection and evaluate approaches to management.
4. Write a business case for the use of erythropoietin in your department, describing the selection of patients and evaluation of response.
5. Critically evaluate the value of thrombophilia testing in patients with venous thromboembolic disease.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 15 March 2005

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
And any *THREE* of the remaining *FOUR* questions**

Time allowed - THREE HOURS

1. Discuss the key elements involved in pretransfusion testing in the hospital blood bank. What are the requirements to implement electronic cross-matching and what are the potential benefits and risks of this approach?

2. Discuss the pathogenesis, clinical presentation and management of pulmonary complications in sickle cell disease.
3. Which monoclonal antibodies are available for the treatment of haematological malignant disease? Critically evaluate the evidence for their effectiveness. Which patients should be selected for treatment by these agents?

Please turn over for questions 4 and 5

4. Outline the process of investigation of a neonate born with a platelet count of $5 \times 10^9 / l$ and evaluate the management options for this patient.
5. Write short notes on:-
 - (a) Anagrelide
 - (b) Lepirudin
 - (c) Recombinant FVIIa



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 21 September 2004

HAEMATOLOGY

First Paper

Candidates must answer **FOUR** questions **ONLY**

Time allowed - THREE HOURS

1. Define the 'antiphospholipid syndrome'. Critically evaluate the options for investigation and management of a 45-year-old woman who presents with an extensive lower limb DVT and has suspected antiphospholipid syndrome.
2. Discuss how you would confirm the diagnosis and establish prognosis in a 69-year-old male who presents with a provisional diagnosis of CLL and evaluate the management options.
3. Write short notes on the following:
 - a) Stroke in sickle cell disease
 - b) Laboratory diagnosis of cobalamin deficiency
 - c) Measurement and clinical use of plasma viscosity
4. Discuss the pathophysiology of paroxysmal nocturnal haemoglobinuria and its relationship to the diagnostic laboratory methods, clinical manifestations and therapy.

Please turn over for Question 5

5. Critically evaluate the current status of reduced intensity or non-myeloblative allografts. How do you see the future development of this procedure?



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 21 September 2004

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
And any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. Evaluate the risk of transmission of variant Creutzfeldt Jakob disease by blood components and plasma products and discuss strategies which have or could be used to manage that risk.
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2. Critically evaluate the investigation and management of a 27 year old woman at 34 weeks gestation who is asymptomatic but is found to have a platelet count of $70 \times 10^9/l$.
 3. Write short notes on **all** of the following:
 - (a) the clinical value of prognostic scoring in NHL
 - (b) Castleman's disease
 - (c) the principle and clinical value of PET scanning in patients with lymphoma.

Please turn over for Questions 4 and 5

4. Critically evaluate the assessment, investigation and management of a neonate born at 36 weeks with jaundice and severe anaemia who has been referred to you by the paediatricians following a laboratory report of numerous nucleated red blood cells on the blood film.
5. What does childhood ALL have in common with adult ALL? Discuss any differences in molecular and cytogenetic phenotypes, prognosis and approaches to treatment.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 16 March 2004

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Discuss the ways in which available treatments may modify the pathophysiology of \square thalassaemia major.
2. Give an account of the pathophysiology of bone disease in multiple myeloma and how this influences management approaches.
3. Evaluate the evidence base for your approach to the diagnosis and management of patients with acquired aplastic anaemia.
4. Write short notes on:
 - (a) Peripheral neuropathy in haematological practice
 - (b) Granulocytic sarcoma
 - (c) Cerebral lymphoma
5. Critically analyse the factors that may promote venous thrombosis in patients with carcinoma.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 16 March 2004

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
And any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. What steps could a hospital take to minimise patients' exposure to donor blood components?

2. Describe iron absorption, transport and utilisation and the laboratory assessment of iron stores.
3. Evaluate the treatment options for a 50 year old woman with severe chronic immune thrombocytopenic purpura.
4. Write short notes on:
 - a) Sclerosing B-cell lymphoma
 - b) Arsenic trioxide therapy
 - c) Tumour lysis syndrome

Please turn over for Question 5.

5. You are asked to review a patient on the surgical high dependency unit. The patient is a 56 year old woman who had an emergency laparotomy and colectomy 9 days previously. Pre-op full blood count was normal apart from mild neutrophilia. She now has the following full blood count:

WBC $15 \times 10^9/l$; Hb 10.3 g/dl; platelets $30 \times 10^9/l$

Discuss the differential diagnosis, investigation and management.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 23 September 2003

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Discuss the diagnosis and management of heparin-induced thrombocytopenia.
2. Describe the treatment options you would discuss with a forty-year old man who has just been diagnosed as having chronic myeloid leukaemia.
3. Discuss the relationship between genotype(s) and phenotype(s) in:
 - (a) Haemoglobin H disease
 - (b) Primary iron-loading disorders
4. Describe the evidence on which you base your management of patients with neutropenic fever.
5. Write short notes on:
 - (a) The management of secondary polycythaemia
 - (b) Amyloidosis
 - (c) The use of thalidomide in haematological malignancies.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 23 September 2003

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
And any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. Describe the principles by which the safety of blood components (red cells, platelets and fresh frozen plasma) is achieved by a blood transfusion service. Illustrate your answer with a list of the specific measures which are currently employed. What other measures are available that might affect blood component safety and what impact might these have if introduced within a national transfusion service?

2. Discuss the haematological abnormalities found in association with HIV (human immunodeficiency virus) infection and its treatment.
3. You are asked to see a thirty-eight year old woman who is currently twenty-five weeks pregnant. She gives a history that her maternal grandfather was a haemophiliac and died many years before. She has no details of this history. Discuss how you would manage this.
4. Write short notes on the following:
 - (a) The 8:21 translocation [t(8,21) (q22;q22)] in acute myeloid leukaemia
 - (b) Large granular lymphocytes
 - (c) Mantle cell lymphoma

5. What do you understand by the term 'hyperviscosity syndrome'? Describe the haematological diseases which may be associated with the hyperviscosity syndrome and their clinical management.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 18 March 2003

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Describe the classification of myelodysplastic syndromes (MDS) and discuss how you would clinically treat patients suffering from different types of MDS.
2. Describe the patho physiology of vaso-occlusive crises in Sickle Cell disease and relate this to the clinical management of vaso-occlusive crises.
3. Describe the laboratory tests which are used to monitor anticoagulation therapy and indicate how you would use them in the management of patients.
4. Prepare a written submission to health purchasers for the use of Rituximab in the treatment of Non-Hodgkin's Lymphoma.
5. Write short notes on both the methods used for the measurement of the following and also the interpretation of the results:
 - (a) Reticulocyte Count,
 - (b) Iron Status,
 - (c) Hb A2 level.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 18 March 2003

HAEMATOLOGY

Second Paper

**Candidates must answer the FIRST question
and any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. Discuss the patho physiology of transfusion related lung injury (TRALI). Describe how you would diagnose and manage this condition and discuss the strategies for preventing TRALI.

2. Discuss the pathogenesis, diagnosis and management of disseminated intravascular coagulation.
 3. Describe how you would investigate and clinically manage a 70 year old man with severe autoimmune haemolytic anaemia.
 4. Discuss the pathogenesis, investigation and management of amyloidosis.
 5. How would you investigate and clinically manage a 40 year old man with Hairy Cell Leukaemia?



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 24 September 2002

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Discuss the evidence base for your decisions on the diagnosis and management of autoimmune thrombocytopenic purpura.
2. Discuss the relationship between the genetic defect(s) and the clinical features of:
 - (i) B-thalassaemia intermedia,
 - (ii) hereditary haemochromatosis.
3. Describe the principles and practical measures which are important in the monitoring of warfarin treatment. Discuss the ways in which the haematology laboratory may be involved in a near patient testing service for control of oral anticoagulation therapy.
4. Discuss the role of hydroxyurea in the treatment of haematological disorders.
5. Write short notes on:
 - (i) the method and clinical relevancy of total red cell mass,
 - (ii) neonatal allo-immune thrombocytopenia.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

Tuesday 24 September 2002

HAEMATOLOGY

Second Paper

**Candidates must answer the FIRST question
and any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. In the UK nearly 30% of serious hazards of transfusion are due to hospital laboratory errors. Discuss how these may be prevented.
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2. Discuss the use of recombinant erythropoietin as a therapeutic agent in patients with haematological disorders.
 3. Describe the pathogenesis, diagnosis and management of acute promyelocytic leukaemia (FAB M₃).
 4. Write short notes on:
 - (i) chronic neutrophilic leukaemia,
 - (ii) cyclical neutropenia.
 - (iii) neutrophil surface antibodies.
 5. Discuss the pathogenesis, diagnosis and management of sideroblastic anaemias.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

March 2002

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed – THREE HOURS

1. Discuss the pathophysiological basis and approach to management of thrombosis associated with:
 - (i) paroxysmal nocturnal haemoglobinuria,
 - (ii) thrombotic thrombocytopenic purpura,
 - (iii) “Lupus anticoagulant”.
2. Discuss the investigation, differential diagnosis and management of a middle-aged man found to have an haematocrit of 0.54 l/l (54%).
3. Using evidence based information describe your approach to the diagnosis and management of multiple myeloma.
4. Discuss your approach to:
 - (i) diagnosis of hereditary haemochromatosis,
 - (ii) antenatal diagnosis in thalassaemia disorders.
5. Write short notes on:
 - (i) laboratory diagnosis of malaria,
 - (ii) laboratory assessment of the acute phase response,
 - (iii) amyloidosis.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

March 2002

HAEMATOLOGY

Second Paper

Candidates must answer the FIRST question
and any THREE of the remaining FOUR questions

Time allowed – THREE HOURS

1. Discuss the factors which should be taken into account when infants in a neonatal unit are transfused with blood components.
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2. Discuss the treatment options for a 50 year old man with severe pancytopenia caused by myelodysplasia. Justify your preferred approach to management.
 3. Discuss the diagnosis and management of patients with von Willebrand's disease.
 4. Discuss how you would manage clinically a patient with sickle cell disease.
 5. Write short notes on:
 - (i) platelet antibodies,
 - (ii) the haematological consequences which may follow acute Epstein-Barr virus (EBV) infection,
 - (iii) monoclonal gammopathy of undetermined significance (MGUS).



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

March 2001

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Discuss the indications for laboratory investigations for inherited or acquired thrombophilia. How may the results of these tests influence the management of venous thromboembolic disease?
2. Write short notes on the relationship between the genetic defect(s) and clinical features in:
 - (ii) hereditary spherocytosis
 - (iii) genetic haemochromatosis
 - (iv) haemoglobin H disease.
3. Discuss the laboratory approach to diagnosis and clinical approaches to management in patients with myelodysplastic syndromes.
4. Describe the approaches to mobilisation and collection of peripheral blood stem cells. What laboratory tests are used to identify the haemopoietic progenitors and to assess the quality of the “harvest”?
5. Discuss the aetiology, diagnosis and management of primary (idiopathic) myelofibrosis.



THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

March 2001

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
and any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. Describe the clinical features and underlying immunological basis of:
 - (ii) immediate haemolytic transfusion reactions
 - (iii) delayed haemolytic transfusion reactions.
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2. Discuss the pathogenesis, diagnosis and management of thrombotic thrombocytopenic purpura.
 3. Discuss the disorders of haemopoiesis associated with Down's syndrome and the management of these disorders.
 4. Write short notes on:
 - (ii) sickle cell disease in pregnancy
 - (iii) congenital dyserythropoietic anaemias
 - (iv) iron chelation therapy.
 5. Discuss the pathogenesis and clinical features of mantle cell lymphoma. What are the treatment choices for a 50 year old man with this disorder?

THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

September 2000

HAEMATOLOGY

First Paper

Candidates must answer FOUR questions ONLY

Time allowed - THREE HOURS

1. Describe the functions of the spleen, the indications for splenectomy and your approach to preventing the consequences of hyposplenism.
2. Give an account of the potential complications of heparin treatment. Describe the laboratory tests which are used to monitor heparin therapy and also the tests which are used to diagnose the complications of heparin treatment.
3. Describe the indications for the use of red cell transfusion in sickle cell disease and discuss specifically the hazards associated with these transfusions.
4. Discuss the aetiology, diagnosis and management of essential thrombocythaemia.
5. Write short notes on:
 - (i) Hypereosinophilia
 - (ii) Apoptosis
 - (iii) The chromosomal abnormality t(15;17)(q22;q12)

THE ROYAL COLLEGE OF PATHOLOGISTS

Part 1 Examination

September 2000

HAEMATOLOGY

Second Paper

**Candidates MUST answer the first question
and any THREE of the remaining FOUR questions**

Time allowed - THREE HOURS

1. Discuss the potential benefits and disadvantages of pre-storage leucodepletion of all blood products. How would you manage a patient whose temperature rises to 39C following the administration of 50ml of leucodepleted red cells?

2. Discuss how you would treat a patient with acute myeloblastic leukaemia who has been diagnosed as having a first relapse.
3. Write short notes on:
 - (i) Haemochromatosis
 - (ii) Paroxysmal nocturnal haemoglobinuria
 - (iii) Cold agglutinins
4. Describe the pathophysiology of the antiphospholipid syndrome and discuss the management of a patient with this syndrome.
5. Discuss how you would manage a 30 year old female with refractory chronic immune thrombocytopenic purpura (I.T.P).