



Answer all questions.
Answer Part A and Part B in separate books.

Part A

1. A 5 year-old boy was admitted to hospital with uncontrollable bleeding which started about 48 hours after a tooth extraction. His 30 year-old maternal uncle gives a history of severe bruising, bleeding and swelling of joints following minor trauma while his mother, father and 8 year-old sister are free of such symptoms.
 - 1.1 State 2 possible conditions for his presentation. (10 marks)
 - 1.2 State the mode of inheritance of the disorders stated for 1.1 above. (10 marks)
 - 1.3 State 3 tests that you would perform on this patient, giving expected results. (30 marks)
 - 1.4 Explain why he has presented with bleeding 48 hours after the tooth extraction. (30 marks)
 - 1.5 Explain the principles of treatment for this patient. (20 marks)

2. A 35 year-old male complains of chest pain on exertion. On examination he was found to have an ejection systolic murmur, low volume pulse and low blood pressure. Doctor suspected that he has a valvular lesion in the heart.
 - 2.1 State the valvular lesion he is likely to have. (10 marks)
 - 2.2 Explain why he has an (i) ejection systolic murmur, (ii) low volume pulse and (iii) low blood pressure. (45 marks)
 - 2.3 Explain the physiological basis of the presence of chest pain on exertion in this patient. (45 marks)

3. The Stomach was completely removed surgically as a treatment for a cancer in a 40 year-old male.
 - 3.1 List enzymes, hormones and substances related to gastrointestinal tract which are altered after surgery in this patient. (20 marks)
 - 3.2 Describe the alterations that occur in physiological mechanisms in the gastrointestinal tract due to removal of the stomach in this patient. (50 marks)
 - 3.3 Describe briefly the nutritional complications likely to be seen in this patient. (30 marks)

Part B

4. Explain the physiological basis for the
 - 4.1 use of counter irritants to relieve pain. (30 marks)
 - 4.2 presence of exaggerated knee jerk in spinal injury at T₁₂. (40 marks)
 - 4.3 presence of better bone conduction than air conduction in conduction deafness. (30 marks)

5. Write short notes on
 - 5.1 role of surfactant in prevention of lung collapse. (25 marks)
 - 5.2 reabsorption of water at the collecting ducts in nephrons. (25 marks)
 - 5.3 copper T intrauterine contraceptive devices. (25 marks)
 - 5.4 serum osmolality. (25 marks)