



Answer all 5 questions. Answer Part A and Part B in separate books.

Part A

- 1. Explain the physiological basis for the following.
 - 1.1 Haemoglobin concentration is lower in the third trimester of pregnancy compared to non-pregnant state. (30 marks)
 - 1.2 Polycythemia is commoner in chronic smokers than in non-smokers. (40 marks)
 - 1.3 Hypochromic microcytic blood picture is seen in patients with chronic blood loss. (30 marks)

- 2.
 - 2.1 Describe the fetal circulation using a labelled diagram. (40 marks)
 - 2.2 Explain how the arrangement of fetal circulation helps in effectively delivering oxygen to fetal tissues. (30 marks)
 - 2.3 Describe the changes that occur in the fetal circulation at birth. (30 marks)

- 3. Explain the physiological basis for the following.
 - 3.1 Thought of exercise causes an increase in depth and rate of respiration. (30 marks)
 - 3.2 Voluntary hyperventilation is followed by a period of hypoventilation. (40 marks)
 - 3.3 PCV of venous blood is higher than that of arterial blood. (30 marks)

Part B

- 4. A 30 year-old patient presented with a complaint of passing large amount of urine. He is suspected of having diabetes mellitus.
 - 4.1 State one investigation with the expected result that will help in confirming the diagnosis. (10 marks)
 - 4.2 List four other symptoms that this patient may have. (20 marks)
 - 4.3 Give physiological explanation to the passing of large amount of urine. (70 marks)

- 5. Write short notes on
 - 5.1 Random error. (25 marks)
 - 5.2 Gastrin. (25 marks)
 - 5.3 Hormonal contraception. (25 marks)
 - 5.4 Memory. (25 marks)