

**SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION AND RESEARCH**  
(A Deemed to be University)

**Time: 180 Minutes**

**Max Marks: 80 Marks**

**MBBS Phase I Supplementary Examination October 2024**

**Physiology Paper I**

**QP CODE: C1021**

*Your answer should be specific to the question asked*

*Draw neat labelled diagrams wherever necessary*

***Long Essay***

***10 × 2 = 20 Marks***

1. With the aid of a flow chart describe the steps involved in coagulation of blood. Justify why females are usually carriers of haemophilia. (6+4)
2. Describe the process of oxygen transport in blood. Add a note on cyanosis.

***Short Essay***

***5 × 12 = 60 Marks***

3. Diagrammatically depict mechanism of operation of sodium potassium pump. Mention its importance.
4. Describe the hazards of blood transfusion.
5. Depict ECG changes in relation with ventricular pressure & volume changes that takes place in various phases of cardiac cycle.
6. Describe the measurement of cardiac output by dye-dilution technique.
7. A 65-year-old man has a 20-year history of alcoholism and liver disease. He visits his physician complaining of swelling of his extremities. On examination there is accumulation of fluid in the abdomen
  - a. Mention which starling forces is altered in the above case (1)
  - b. Describe the role of starling forces in prevention of accumulation of fluid (4)
8. Draw and label a graph showing Jugular venous pulsation. Mention the cause for each wave. (3+2).
9. Describe the functions of enzymes in pancreatic juice.
10. Describe the effects of gastrectomy.
11. Describe the cause, clinical features & treatment of decompression sickness.
12. Classify hypoxia. Describe any two of them. (2+3)
13. Define GFR. Give the normal value. list the factors affecting it. (2+1=3)
14. List the peculiarities of renal circulation and its importance.

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**MBBS Phase I Supplementary Examination October 2024**

**Physiology Paper II**

**QP CODE: C1022**

*Your answer should be specific to the question asked*

*Draw neat labelled diagrams wherever necessary*

**Long Essay**

**10 × 2 = 20 Marks**

1. A 38-year-old male complained of abrupt polydipsia and polyuria. Urine analysis provided the following results: Urine volume: 15 L/day Urine Osmolarity: 40 mosm/L, Urine Glucose: ABSENT

- Mention the most probable disorder in the above case and name the hormone responsible for it. (2)
  - Define the terms polyuria and polydipsia. (2)
  - Describe the Physiological functions of the hormone responsible for the above condition (6)
2. Describe the role of Hypothalamus in regulation of water intake, feeding and temperature.

**Short Essay**

**5 × 12 = 60 Marks**

3. Draw a neat labelled diagram of hypothalmo-pituitary axis. Describe the role of axis in regulation of pituitary gland.
4. Mention the normal serum calcium levels. Explain Physiological actions of 1,25-dihydroxy cholecalciferol in regulation of serum calcium.
5. Explain the sequence of events of excitation contraction coupling in skeletal muscle.
6. Describe the respiratory changes that occur during exercise.
7. In sensory aphasia, person speaks very fluently but does not talk sense. Explain the physiological basis.
8. Compare the mechanism of pre and post synaptic inhibition with the help of a diagram
9. Draw a neat labelled diagram of olfactory receptor. Define parosmia.
10. Draw a labelled diagram of taste pathway. Define dysgeusia.
11. A 21-year-old woman and her husband practise rhythm method of contraception. She has a regular 28- day menstrual cycle.
- Mention the physiological basis for the 'the rhythm' method of contraception. (1)
  - Mention the safe period in this woman. (2)
  - Mention two other temporary methods of contraception. (2)
12. Explain the basis of "Gravindex" Test in Pregnancy.
13. Define muscle fatigue and explain the mechanisms for it.
14. Define empathy. Explain why is empathy important in medicine. (1+4)