

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

Time: 180 Minutes

Max Marks: 80 Marks

MBBS Phase I Examination August 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. Define cardiac cycle. Calculate the duration of cardiac cycle when the heart rate is 80 beats /minute. Describe the various volume and pressure changes in left ventricle during each cycle. (1+1+8)
2. With neat labelled diagram describe the hemoglobin oxygen dissociation curve. Mention the factors that shift the curve to the right.

Short Essay

5 × 12 = 60 Marks

3. Define MCV, MCH and MCHC and state their normal values.
4. Describe the role of B-lymphocytes in humoral immunity.
5. Represent the cascade of intrinsic and extrinsic pathway.
6. Describe vesicular transport processes with examples
7. State the normal duration of AV nodal delay. Describe the physiological basis for AV nodal delay. (1+4)
8. Describe the neural and hormonal mechanisms controlling heart rate.
9. Describe why pepsinogen does not digest the layers of stomach
10. Describe the sites and mechanism of digestion and absorption of Fats. Add a note on Steatorrhea
11. Describe the factors affecting diffusion capacity of lungs.
12. Define renal clearance. Give the formula to calculate the same (2+3)
13. Describe Obligatory reabsorption of water.
14. Prem, a 20-year-old boy came to the physician with a history of breathlessness. Investigations revealed the following data: Forced expiratory volume at the end of first second = 2000 ml Forced vital capacity = 4000 ml Using the above data, answer the following:
Interpret the respiratory disorder in Prem using the above values and justify. (2.5+2.5)

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Time: 180 Minutes

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MBBS Phase I Examination August 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. Lakshmi, a 25-year-old fashion model underwent thyroidectomy. Post operatively on day 2 she complained of painful cramps in her muscles and spasms in her throat accompanied by difficulty in breathing. She also noticed a kind of sound produced while breathing (stridor). On examination Trousseau sign and Chvostek sign were positive. Laboratory investigations showed decrease in serum calcium levels. Doctor referred her to an endocrinologist.
 - a. Mention the normal value of serum calcium and Name the hormone that is deficient in Lakshmi. (2)
 - b. Describe the effects of this hormone in regulating serum calcium (6).
 - c. List Two more hormones which help in the regulation of serum calcium (2)
2. Define synapse. List the properties of synapse. Explain any two properties of Synapse (1+4+5)

Short Essay

5 × 12 = 60 Marks

3. Describe the clinical features of hyperthyroidism.
4. Give the cause & explain the physiological basis of any two features of Diabetes Mellitus. (1+4)
5. Draw and label Sarcotubular system. Mention the function of each component
6. Describe the mechanisms of heat production in the body.
7. Name the centres that regulate feeding behaviour and state their interrelationship.
8. Define muscle tone. Explain clasp-knife phenomenon.
9. Describe the changes occurring in near vision .
10. Compare and contrast conductive deafness and sensorineural deafness.
11. A 21-year-old woman and her husband practise rhythm method of contraception. She has a regular 28- day menstrual cycle.
 - a. Mention the physiological basis for the 'the rhythm' method of contraception. (1)
 - b. Mention the safe period in this woman. (2)
 - c. Mention two other temporary methods of contraception. (2)
12. Describe the functions of testosterone.
13. Explain the Physiological basis for the Clonus and Tetanus.
14. List 5 things a Physician should bear in mind while breaking bad news to a patient.