

# Question Paper

Exam Date & Time: 11-May-2023 (10:00 AM - 01:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Instructions: Answer ALL questions.

### Human Anatomy and Physiology [PHA 1.1T-S2]

Marks: 70

Duration: 180 mins.

#### Section A

Answer all the questions.

Long Answer Questions (3 x 10 marks = 30 marks)

- 1) Explain the sequence of events that generate neuronal action potential. Explain the propagation of action potential. (10)
- 2) Describe the anatomy of the human heart with a neat labelled diagram. Explain the effect of exercise on cardiovascular system. (10)
- 3) With a neat, labelled diagram explain the formation, storage, and release of thyroid hormones. Give the physiological effects of thyroid hormones. (10)

#### Section B

Answer all the questions.

Short Answer Questions (6 x 5 marks = 30 marks)

- 4) Explain receptor mediated endocytosis with an example. (5)
- 5) A 50-year-old male presented to the endocrinology OPD. The patient gained weight of around 25 kg over a period of 2 years. He had increased appetite and absence of satiety and would often get violent on being denied food. He also complained of increased thirst, craving for water associated with increased frequency of micturition, headache, and visual blurring. The patient's weight was 102 kg with body mass index of 34.5. Lab Investigations are as follows: TSH, T3, T4 - Low; LH, FSH - Low, Cortisol - Low, IGF - Low, Blood sugar - High, ACTH - Low. Correlate the symptoms with the parts of the brain associated and explain how it is linked to the disease. (5)
- 6) How airway resistance affects pulmonary ventilation? (5)
- 7) Describe the anatomy of kidney. (5)
- 8) Describe the process of spermatogenesis in the testes. (5)
- 9) Explain the menstrual phase and post ovulatory phase. (5)

#### Section C

Answer all the questions.

Give Reasons for the Following (5 x 2 marks = 10 marks)

- 10) What are the signs and symptoms of the ovarian cysts? (2)
- 11) What is the difference between a complete and a radical hysterectomy. (2)
- 12) How does atrial natriuretic peptide regulate blood pressure. (2)
- 13) Proton pump inhibitors and histamine H2 receptor blockers may be used to treat gastric ulcers. Give reason. (2)
- 14) Why many babies experience neonatal jaundice? How is it treated? (2)

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