

RUHS

First Year MBBS Examination I MBBS PHYSIOLOGY PAPER I

Date: 02-02-2021

Time: 3 hours

Max Marks: 100

Instructions: INSTRUCTIONS: Attempt all questions in both sections: (Use separate answer book for each section)

Section 1

1. Fill in the blanks: (6)

- a. In _____ the muscle weakness is caused by an autoimmune attack against one of the Ca^{2+} channels in the nerve endings at the neuromuscular junction.
 - b. The deep reflexes become weak in pendular in _____ lesion.
 - c. High circulating levels of progesterone and estrogens in pregnancy prevent _____
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- bleeding and cause amenorrhea.
- d. Cushing's disease is due to excessive levels of _____.
 - e. Visual receptors not found at _____ part of the eye.
 - f. Glucose enters in the intestine and renal tubules by _____ transport.

2. Choose the correct option in the following multiple choice questions: (4)

- a. Flocculonodular lobe is directly connected to; a) Vestibular nucleus b) Red nucleus c) Dentate nucleus d) Inferior olivary nucleus
- b. Capacitation of sperm takes place in- a) Seminiferous tubules b) Epididymis c) Vas deferens d) Uterus
- c. Which of the following best describes a physiological difference between the contraction of smooth muscle compared with the contraction of cardiac muscle and skeletal muscle? a) Ca^{+2} independent b) Does not require any action potential c) Requires more energy d) Shorter in duration
- d. Neurotransmitter released at sympathetic preganglionic fibres- a) Epinephrine b) Nor epinephrine c) Acetyl choline d) Dopamine

3. A 45 year old man visits a physician because of difficulties performing simple tasks that involve repetitive movements. The physician asks to turn one hand upward and downward at a rapid pace the man quickly loses all perception of the instantaneous position of the hand, which results in a series of delayed attempts and jumbled movements. Use this information to answer the following questions; (15)

- a. This patient's neurological signs are most likely related to lesion within which part of the brain ?name the probable condition with its pathophysiology.
- b. What are the connections and the functions of this part of the brain?
- c. What are the other characteristics of disease associated with dysfunction of this part.

4. Write short notes on (any five): $5 \times 2 = 10$ (10)

- a. Dark adaptation (C2- 1109)
- b. Decerebrate rigidity (C2-955)

- c. Thalamic syndrome
 - d. Sarcotubular system
 - e. Impedance matching
 - f. Passive transport
5. Explain briefly (any three): $3 \times 5 = 15$ (15)
- a. Endogenous pain relief system
 - b. Female contraceptives
 - c. Stretch reflex
 - d. Compositions and functions of cerebrospinal fluid (C1-373)

Section 2

1. Discuss the common causes of infertility in a couple and role of in-vitro fertilization in managing a case of infertility, describe the following changes during different phases of menstrual cycle along with a suitable diagram; (20)
- a. Hormonal
 - b. Uterine
 - c. Ovarian
 - d. Vaginal

2. What will happen and why (Any five): 5x2=10
(10)

- a. If circulating levels of free Thyroxin & Triiodothyronine decrease in infants.
- b. If LH surge rge in an ovulatory cycle is absent
- c. If vascular blockage of the thalamus occurs
- d. If Ciliary muscles get temporary paralyzed
- e. To pupil in oculomotor nerve paralysis
- f. To menstrual cycle in breast-feeding lady

3. Explain briefly (Any four): 4x5=20 (20)

- a. Suckling reflex (C2-682)
- b. Mechanism of accommodation of Eye(A.995) (8.894) (C2-1103)
- c. Functions of insulin
- d. Differentiate between action potential and receptor potential
- e. Tests of pregnancy
