

Date: 25-11-2023

1123E354

First Year MBBS Examination

I MBBS Physiology Paper 2

Time: 3 hours Max Marks: 100

Instructions: 1. Answer to the points. 2. Use separate answer books for each section. 3. Draw diagrams wherever necessary.

Section 1

1. Write the following structured long question (any 1 out of 2) (10)

- a. Enumerate the ascending tracts of the spinal cord. Trace the pathway of Pain. Discuss the types of pain, referred pain, role of dorsal horn of spinal cord on modulation of pain. (2+2+6)
- b. What is the role of cerebellum in motor activity? What are the symptoms of cerebellar disease and what is the pathophysiology of the symptoms? (4+6)

2. Write the following case - based scenario /

applied short notes (any 2 out of 3) (12)

- a. A 55 yrs. old non-diabetic female had rheumatoid arthritis and was treated with steroids for four months, after which she was advised to taper the medicine slowly along two weeks before stopping it completely. Along with steroids she was given calcium tablets daily and her blood sugar was tested every month. During her course of treatment, she developed swelling on her face and back of neck, purplish stria along the body, hair loss from scalp and hirsutism. a) Give physiological basis of the symptoms that she developed. (2) b) Why were the steroids tapered slowly and not stopped abruptly at the end of four months? (2) c) Why was she given calcium along with steroids and why was her blood sugar tested every month? (2)
- b. An 85 year old male suffers from memory loss of recent events. The long term memory is intact and so is his skills and reflexive memory. What do you think is the most likely diagnosis? What is the physiological basis of this disease?
- c. Describe the various indicators of ovulation.

3. Write short notes (any 3 out of 4) (18)

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- a. HCl secretion in the stomach

- b. Gastrointestinal hormones
- c. Hormonal changes in menstrual cycle
- d. Sertolii cells

4. Answer in only 2-3 sentence (any 5 out of 6) (10)

- a. Why salivation increases by mere thought or sight of food?
- b. Oxytocin is present in the blood all the time but it causes uterine contractions only at the time of delivery. Why?
- c. Babies born to elderly mothers are at a higher risk of developing Down's syndrome
- d. Explain why, fetus is a 'transplant' in the mother, yet it is well tolerated.
- e. Why people sometimes experience pain in their limb which has been amputated and is no longer present
- f. What is Babinski's reflex?

Section 2

5. Write the following structured long question (any 1 out of 2) (10)

- a. Name the hormones regulating the blood glucose levels. What is the mechanism of action of insulin? What is the difference between type 1 and type 2 diabetes? (2+2+6)
- b. Name the hormones secreted from Pituitary gland? How is the secretion of these hormones regulated? (3+7)

6. Write short notes (any 2 out of 3) (12)

- a. Action potential of cardiac muscle
- b. Excitation Contraction coupling of skeletal muscle
- c. Classification of nerves

7. Write short notes (any 3 out of 4) (18)

- a. Organ of Corti
- b. Fight or Flight response
- c. Color Vision
- d. Nicotinic and muscarinic receptors in ANS

8. Answer in only 2-3 sentence (any 5 out of 6) (10)

- a. What happens to a person who suddenly enters cinema hall from the bright light? Why?
- b. Why there is polyphagoa in diabete patients?
- c. What is the difference between conduction velocity in myelinated and non myelinated nerve fibers and why?
- d. What is the difference between rigor mortis and contracture?
- e. Why tea doesn't taste sweet if it is taken just after having sweet dish
- f. Why vagotomy is done in severe cases of peptic ulcer?

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