

**KALOJI NARAYANA RAO UNIVERSITY OF
HEALTH SCIENCES
WARANGAL, TELANGANA STATE-506 002
MBBS FIRST YEAR EXAMINATIONS:
SEPTEMBER, 2025
PHYSIOLOGY
PAPER - II
(NEW SCHEME)**

Time: 3 Hours

Max Marks: 100

Note: Answer all questions

Give Diagrammatic representation wherever necessary

Multiple Choice Questions

10 X 1=10

1) Actin is tethered to Z-lines in the sarcomere by:

- a) Actinin
- c) Nebulin
- b) Titin
- d) Dystrophin

2) Rigor mortis is due to:

- a) Damage to actin and myosin
- c) Increased myosin ATPase
- b) Rapid sequestration of Ca in ER
- d) ATP depletion

3) ~~The condition of prosopagnosia usually results from~~

dysfunction or damage to which area of the cerebral cortex?

- a) Prefrontal area
 - b) Junction of parietal and temporal lobe
 - c) Inferior temporal lobes on nondominant side of the brain
 - d) Frontal eye fields
- 4) Which of the following reflexes is correctly paired with the sensory structure that mediates the reflex?
- a) Reciprocal inhibition-Golgi tendon
 - c) Stretch reflex-muscle spindle
 - b) Golgi tendon reflex-Meissner corpuscle
 - d) Reciprocal inhibition-Pacinian corpuscle
- 5) Which of the following systems conveys information concerning highly localized touch sensation and body position (proprioceptive) sensation?
- a) Anterolateral system
 - c) Corticospinal
 - b) Dorsal column-medial lemniscal system
 - d) Spinocerebellar
- 6) Which of the following is not a component of the near response?
- a) Pupillary constriction
 - c) Increase in convexity of the lens
 - b) Convergence of the visual axes
 - d) Ciliary muscle relaxation
- 7) The auditory pathway passes via all except:

- a) Cochlear nucleus
 - c) Trapezoid body
 - b) Superior olivary nucleus
 - d) Superior colliculus
- 8) Insulin dependent glucose uptake into skeletal muscle and adipose tissue is mainly mediated by:
- a) GLUT 1
 - c) GLUT 3
 - b) GLUT 2
 - d) GLUT 4
- 9) Menstruation is caused by
- a) Surge of LH prior to midcycle
 - c) Sudden reduction in oestrogen and progesterone at the end of the ovarian cycle
 - b) Failure of corpus luteum to involute
 - d) Excessive secretion of oestrogen and progesterone at the end of the ovarian cycle
- 10) During the week following ovulation, the endometrium increases in thickness to 5 to 6 millimetres. What stimulates this increase in thickness?
- a) Luteinizing hormone
 - c) Progesterone from the corpus luteum
 - b) Oestrogen from the corpus luteum
 - d) Follicle-stimulating hormone

Essay/ Long Answer Questions

2 X 15=30

- 11) A 35-year-old man comes to his physician because of

changes in his appearance. His hands and feet have been growing and his brow and chin are also becoming larger. On examination the patient did not see the fingers of the examiner when they were moved in either superior temporal visual field. Detailed visual field examination by an ophthalmologist revealed a visual field defect in both temporal fields but the defect was more complete in superior rather than in inferior quadrants. The patient was referred to a neurosurgeon for treatment. Based on this information answer the following questions.

- a) Name the hormone which is being secreted in excess.
- b) Explain the mechanism of action of hormone involved.
- c) Enumerate the metabolic function of this hormone.
- d) Explain the underlying mechanism of changes in the patient's appearance.
- e) What could be the cause for visual defect.

(2+4+4+3+2)

12) A 32-year-old woman presents to her primary care physician's office with difficulty in chewing food, she states that when she eats certain foods that require a significant amount of chewing, her jaw muscle becomes weak and tired. After a period of rest, her jaw muscle regains its strength until she eats again.

- a. What is your diagnosis.
 - b. Explain the events of transmission at NMJ.
 - c. Treatment of the condition.
 - d. List out neuro muscular blockers.
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Short Answer Questions

7X6=42

- 13) Describe the different properties of action potential.
- 14) Mechanoreceptors
- 15) Describe three functional divisions of the cerebellum. Assign functions to each.
- 16) State the difference between various types of memories.
- 17) Describe the process involved in pain modulation.
- 18) Describe the role of hormones in sex determination and sex differentiation.
- 19) Indicators of Ovulation.

Very Short Answer Questions

6X3=18

- 20) Describe light reflex.
- 21) Combined contraceptive pills.
- 22) Draw Olfactory pathway.
- 23) Barriers of effective communication.
- 24) Weber-Fechner Law.
- 25) Define Electroencephalogram (EEG) what are the waves seen during REM sleep.
