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WARANGAL, TELANGANA STATE – 506 002
MBBS FIRST YEAR SUPPLEMENTARY EXAMINATIONS: NOVEMBER, 2024

PHYSIOLOGY
PAPER – II

Time: 3 Hours

Max Marks: 100

Note: Answer all questions

Give Diagrammatic representation wherever necessary

Multiple Choice Questions:

10 X 1 = 10

- 1 Which of the following describes a connection between components of the basal ganglia?
 - a) The subthalamic nucleus releases glutamate to excite the globus pallidus, internal segment
 - b) The substantia nigra pars reticulata releases Dopamine to inhibit the striatum
 - c) The substantia nigra pars compacta releases Dopamine to excite the Globus pallidus, external segment
 - d) The striatum releases acetylcholine to excite the substantia nigra para reticulata
- 2 Tetany features include all of the following except:
 - a) Neuromuscular hyperexcitability
 - b) Carpopedal spasm
 - c) Trousseau's sign
 - d) Clotting defects
- 3 Calcium metabolism is mainly dependent on
 - a) Calcitonin
 - b) Parathormone
 - c) Thyroxine
 - d) Growth Hormone
- 4 Oogenesis begins:
 - a) From approx 10th week of foetal life
 - b) At term
 - c) After birth
 - d) At puberty
- 5 First synapse of fibers conducting pain takes place at the level of:
 - a) Medulla to nucleus cuneatus
 - b) Grey matter of dorsal horn of spinal cord
 - c) Medulla in Nucleus Gracilis
 - d) Thalamus in posterior ventricular nucleus
- 6 Feed forward inhibition:
 - a) Helps to limit the duration of excitation of Purkinje cells produced by any given afferent impulses
 - b) Refers to excitation of granule cells is rapidly stopped by negative feedback loop
 - c) Determines inhibitory Purkinje fiber discharge
 - d) Regulates excitatory mossy fiber discharge
- 7 Satiety centre in hypothalamus is regulated by:
 - a) Gastric dilatation
 - b) Blood glucose levels
 - c) Blood insulin levels
 - d) Fatty acids
- 8 Olfactory receptors are:
 - a) Sensitive to physical stimuli
 - b) Rapidly replaced
 - c) Slowly adapting
 - d) Bipolar neurons

- 9 A patient complaining of muscle weakness was given neostigmine injection, which improves his muscle strength. The Neostigmine acts by
- Blocking the action of acetylcholine
 - Interfering with action of amine oxidase
 - Interfering with the action of acetylcholine esterase
 - Interfering with the action of carbonic anhydrase
- 10 Which of the following is NOT a characteristic of an action potential
- Refractory period
 - Conductivity
 - Accommodation
 - Graded response to increasing strength of stimuli

Essay/ Long Answer Questions:

2 X 15 = 30

11. A 48-years old female visits doctor with complaints of weakness, weight gain and feeling of excessive cold. On investigations, her TSH was high and T3, T4 were low.
- Identify the condition.
 - Describe in detail the biosynthesis of thyroid hormone. Enumerate the functions of the thyroid hormone in different organ systems.
 - List the conditions caused due to the alterations in serum thyroid hormone levels. (2+5+5+3)
12. A male aged 50 years came with progressive loss of vision. On examination, he had loss of vision of temporal quadrants of both eyes.
- Identify the condition and where is the most probable site of lesion.
 - Trace the visual pathway.
 - Describe the effects of lesion at various levels in its course. (3+6+6)

Short Answer Questions:

7 X 6 = 42

- Describe the steps involved in the transmission of impulses across the neuromuscular junction. Discuss the role of neuromuscular blocking agents.
- Mention the stages of Spermatogenesis and describe the role of hormones and factors influencing Spermatogenesis.
- Enumerate the Functions of thalamus.
- Describe the tests for ovulation.
- Discuss the role of skin in temperature regulation.
- Describe the causes and manifestations of Cushing's Syndrome.
- Describe the mechanisms involved in pain modulation.

Very Short Answer Questions:

6 X 3 = 18

- Renshaw cell inhibition.
- Receptor potential.
- Describe the rights and responsibilities of patients.
- List the contraceptive methods in females. Briefly explain the mechanism of action of intrauterine contraceptive devices.
- Describe Sarco- tubular system in skeletal muscle.
- Cochlear microphonic potentials.
