

**Time: Three Hours****Max. Marks: 100 Marks****PHYSIOLOGY – PAPER - II (RS-4)****Q.P. CODE: 1023****(QP contains two pages)**

Your answers should be specific to the questions asked

Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS****2 x 10 = 20 Marks**

1. Describe the properties of synapse. Add a note on postsynaptic potentials
2. Describe the metabolic actions of growth hormone. Add a note on different types of dwarfism

**SHORT ESSAYS****8 x 5 = 40 Marks**

3. Explain excitation contraction coupling in skeletal muscles
4. Explain the physiological responses on exposure to cold environment
5. Describe the pathway for crude touch with the help of a neat labelled diagram
6. A young married couple visited their family doctor for advice regarding contraceptive methods. The doctor prescribed combined oral contraceptive pills
  - a) Explain the mechanism of action of oral contraceptive pills
  - b) What are the other methods of contraception in females?
7. Describe the contents and functions of middle ear
8. Describe the actions of parathormone
9. Describe the functions of basal ganglia
10. Explain the theories of referred pain

**SHORT ANSWERS****10 x 3 = 30 Marks**

11. Explain the role of hypothalamus in food intake
12. List the functions of testosterone
13. Explain the physiological basis of Exophthalmos in hyperthyroidism
14. Explain the changes that occur during accommodation **in the eye**
15. Explain the mechanism of action of steroid hormone
16. List three differences between upper motor neuron and lower motor neuron lesions
17. Erlanger and Gasser classification of nerve fibers
18. Explain the physiological basis of resting membrane potential in a nerve cell
19. What is Klinefelter's syndrome?
20. Justify how infections cause fever

**Multiple Choice Questions****10 x 1 = 10 Marks**

- 21 i) Normal sperm count in adult male is about  
A. 50,000/ml  
B. 50 lakhs/ml  
C. 100 million/ml  
D. 150 million/ml
- 21 ii) Circumventricular organs include all of the following except  
A. Sub fornical organ  
B. Area postrema  
C. OVLT  
D. Corpus striatum
- 21 iii) Resting tremor is seen in lesion of  
A. Basal ganglia  
B. Cerebellum  
C. Thalamus  
D. Hypothalamus
- 21 iv) Insulin facilitates glucose uptake in  
A. Brain  
B. Renal tubule  
C. Red blood corpuscles  
D. Skeletal muscle
- 21 v) In a 28-day menstrual cycle regression of corpus luteum occurs on  
A. 14<sup>th</sup> day  
B. 21<sup>st</sup> day  
C. 24<sup>th</sup> day  
D. 28<sup>th</sup> day
- 22 i) Peripheral nerve is myelinated by  
A. Schwann cells  
B. Oligodendrocytes  
C. Astrocyte  
D. Microglia
- 22 ii) Primary auditory cortex is located in  
A. Superior temporal gyrus of temporal lobe  
B. Posterior gyrus of occipital lobe  
C. Post central gyrus of parietal lobe  
D. Superior part of frontal lobe
- 22 iii) "A" band in Sarcomere is made of  
A. Myosin  
B. Actin  
C. Troponin  
D. Myosin and actin
- 22 iv) REM sleep is characterized by all except  
A. Large phasic potentials  
B. Reduction of tone in muscles  
C. Beta waves in EEG  
D. Less towards morning hours
- 22 v) Highest concentration of cones is seen in  
A. Ciliary body  
B. Iris  
C. Optic disc  
D. Fovea

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