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4547 (10/06)

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ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009
PHYSIOLOGY
SEMESTER – 4



Time : 3 Hours]

[Full Marks : 70

GROUP – A**(Multiple Choice Type Questions)**

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10
- i) The decussation of the motor nerves descending from motor area in cerebrum to spinal cord in the pyramidal tract occurs in
- a) mid-brain b) pons
- c) medulla oblongata d) cerebellum.
- ii) Cross-section of the spinal cord shows grey matter in the
- a) centre
- b) surrounding the white matter
- c) none of these.
- iii) The cerebral cortex has many enfoldings. They are called
- a) sulcus b) corpus callosum
- c) gyri d) projection tracts.
- iv) A reflex that is learnt by experience can be termed as
- a) conditional reflex
- b) unconditional reflex
- c) none of these.
- v) Vertebral ganglia consists of
- a) 7 ganglia b) 15 ganglia
- c) 22 ganglia d) 5 ganglia.

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**GROUP – B****(Short Answer Type Questions)**Answer any *three* of the following questions.

3 × 5 = 15

2. What is CSF ? Give its composition and functions. 1 + 2 + 2
3. Briefly discuss any *two* of the following : 2 × 2 $\frac{1}{2}$
- a) Sodium-potassium pump
- b) Synapse
- c) Sensory nerve tracts in spinal cord.
4. Write down the classification of autonomic nervous system.
5. What is the role of “critical set point temperature” in the regulation of body temperature ?
6. Write a short note on the physiology of smell.

GROUP – C**(Long Answer Type Questions)**Answer any *three* of the following questions.

3 × 15 = 45

7. Define sleep. What are the types of sleep ? Give the characteristic features of two types of sleep. Give the physiological effects of sleep on the body. 2 + 1 + 10 + 2
8. Describe the structure of eye with the help of labelled diagram. Enumerate the function of each part. Define Hypermetropia and Myopia. 10 + 3 + 2
9. What are the main parts of Brain ? Explain the function of brain stem. Briefly discuss the function of the hypothalamus. 2 + 7 + 6
10. Define neurotransmitters with examples. What is the role of “G protein” in synaptic neurotransmission ? Describe in brief the mechanism of synthesis and secretion of neurotransmitters from the presynaptic terminal at the synaptic junction with reference to acetyl choline. 3 + 5 + 7
11. Describe the formation, flow and functions of cerebrospinal fluid (CSF). 5 + 5 + 5

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