

[Time: 2½ Hours]

[ Marks:60]

Please check whether you have got the right question paper.

- N.B:**
1. All questions are **compulsory**
  2. All questions carry equal marks.

Q.1 1 Present a comparative account of structural and functional features of the two types of photoreceptors in the human retina. Add a note on photo-transduction. 12

OR

1 What are the central targets that the retinal inputs project to? Give the contribution of each of these structures to vision. 12

Q.2 2 What is gestation? Discuss any three mechanisms of taste transductions. 12

OR

2 Explain how analysis and deconstructions of a complex sound occurs in the inner ear. How are the inner and outer hair cells functionally different? 12

Q.3 3 Describe the organization of the motor system. With an example of a spinal reflex. Highlight the role of the spinal cord in motor functions. 12

OR

3 Write a detailed note on the basal ganglia and its role in motor co-ordination with the help of the given points:1) structural components 2) cortical inputs 3) neuronal circuitry 4) output projections. 12

Q.4 4 What impact does the immune system have on the functioning of the nervous system? Describe with emphasis on the role of cytokines. 12

OR

4 Describe the structure of the blood brain barrier. Explain how it contributes maintaining the brain as an immune privilege site. 12

Q.5 Write short notes on any two of the following 12

- 1 Semicircular canals
- 2 Parkinson's disease
- 3 Olfactory epithelium
- 4 On-centre bipolar cells