

## Semester VI

### Paper No- 15. Biopsychology

**Objective:** To provide an understanding of the biological basis of behavior.

**Marks: 100 + 50 (practicum)**

**Contact Hours: 48**

**1. Introduction to biopsychology:** Nature and scope; Methods and ethics in biopsychology; Divisions of biopsychology.

**2. The Functioning brain:** Structure and functions of neurons; Neural conduction and synaptic transmission; Organization of nervous systems.

**3. Behavioural regulations:** Biological basis of: learning and memory, emotion, and human communication (speech); Functional abnormalities of neurotransmitter: dopamine and serotonin hypothesis; Behavioral Endocrinology: neuroendocrine system and development of brain and behavior.

**4. Neuroplasticity and rehabilitation:** Plasticity of the Adult Brain: neuroplastic responses to nervous system damage (neural degeneration, neural regeneration, neural reorganization, and recovery of function); Neuroplasticity and the treatment of nervous system damage: blocking neurodegeneration, promoting regeneration, neurotransplantation, and rehabilitative training.

### Practicum

Psychobiological Assessment: Case Study/Test, Relationship between physiological and psychological variables (e.g. Use of Biofeedback), Electroencephalography (EEG), Effect of arousal on reaction time and attention.

### Readings:

1. Breedlove, S. M., Rosenzweig, M. R., & Watson, N. V. (2007) Biological Psychology: An introduction to behavioral, cognitive, and clinical neuroscience, 5<sup>th</sup> Edition. Sinauer Associates, Inc., Sunderland, Massachusetts (Chapter 5)
2. Carlson, N. R. (2009) Foundations of Physiological Psychology, 6<sup>th</sup> Edition. Pearson Education, New Delhi. (Chapter 1, 2, 3, 5, 10, 12 and 13)
3. Pinel, J. P. J. (2011) Biopsychology, 8<sup>th</sup> Edition. Pearson Education, New Delhi.(Chapter 1,2, 6, 7, 8, 9 and 10)