

# SEMESTER 1

## Psy-02 BIOLOGICAL PROCESSES

### SECTION–A PHYSIOLOGY AND BEHAVIOR

#### Unit I

**Psychophysiological Measurements and Techniques:** Reasons for measuring Physiological Variables; Methods of Measurement. Techniques- Neuroanatomical Neurophysiological; Neurochemical; Neuroelectrical.

**The Neuron:** Glial Cells, Membranes. How the Neuron Works, Charges and Ions; Intercellular Communications

#### Unit II

**The Nervous System:** Central Nervous System; Autonomous Nervous System Arousal, Attention, Consciousness and Sleep. Biorhythms- Orienting and Attention; Selective Attention; Sleep; Altered States of Consciousness, Function of Consciousness.

### SECTION-B GENETICS AND BEHAVIOR

#### Unit III

##### **Role and Process of Genetics:**

**Principles of Genetics;** Chemical and Physical Structure of Nucleic Acids; Protein Synthesis. Mendel's Laws, Linkage and Crossing Over; Population Genetics (Selection; Drift, Migration, Mutation, Isolating Mechanisms); Extra Nuclear Inheritance.

**Methods:** Human Behaviour Genetic Analysis (Family and Twin Methods)

#### Unit IV

**Behavior Genetics:** Learnability, Temperament, Intelligence, Mental Retardation; Psychopathology.

#### Reading

- Pinel. J.P (2000) Biopsychology. Allyn and Bacon
- C. P. Leventhal (1966). Introduction to Physiological Psychology 3<sup>rd</sup> Ed. Printice, Hall of India ,New Delhi
- N. Craison. (2000) Physiology of Behavior 3<sup>rd</sup> Ed. Allyn Bacon London
- M.W Strickberger (1993) Genetics. Mcmillian New York.
- S.Green (1994) Principles of Biopsychology, Lawrence Erlbaum Association Hillsdale.
- B. Bridgeman, (1980) Biology of Behaviour and Mind. John Wiley & Son New York.
- A. Gale and J Edwards (Ed.) (1988) Physiological Correlates of Human Behaviour, Vol.1. Academic Press New York.
- M G.Manosevitz (1969) Behaviour genetics: Methods and Research, Appleton London
- Steen, R.G 1(966) DNA and Destiny: Nature and Nurture in Human Behavior , Plenum