PSG2C01 HUMAN PHYSIOLOGY

Module 1 The Nervous System

1.1 Divisions (CNS,PNS - somatic and autonomic)
1.2 Nervous tissue (neurons, nerve fibres, nerves, synapse).
1.3 Non nervous tissue and other materials (neuroglia, meninges, cerebro-spinal fluid,Blood - CSF and blood - brain barriers).
1.4 Nerve impulse - generation, conduction, synaptic transmission, role of calcium ions,action of transmitter substances on postsynaptic neuron, types of transmittersubstances. (Hours - 20)

Module 2 The Central Nervous System

2.1 Brain - an overview (Forebrain, midbrain, hindbrain).
2.2 Spinal cord - an overview of its structure and organization.
2.3 Reflex Action - monosynaptic reflex, multisynaptic reflex, crossed extension reflex, massreflex. (Hours – 14)

Module 3 The Cerebellum and the Basal Ganglia

3.1 The Cerebellum and its motor functions.
3.2 Anatomical functions, areas of the cerebellum.
3.3 Function of the cerebellum in overall motor control.
3.4 The basal ganglia-their motor functions, role of the basal ganglia for cognitive control,functions of neurotransmitters with basal ganglia.
(Hours – 14)

Module 4 The Cerebral Cortex

4.1 Functions of the specific cortical areas -association areas (parietooccipito temporal,prefrontal and limbic association areas with special emphasis on Wernike's area andBroca's area), area for recognition of faces, concept of the dominant hemisphere.
4.2 Function of the brain in communication - Sensory and Motor aspects of communication. (Hours – 12)

Module 5 States of brain activity and Techniques in neurophysiology

5.1 Sleep -Basic theories of sleep, Brain waves, Slow wave sleep and REM sleep.
5.2 Brain imaging - CT, MRI, PET, CBF, EEG, Lesioning and Electrical Stimulation of Brain(ESB). (Hours - 12)