

Syllabus of Diploma in EEG Technology

① A

First year paper Scheme

Sr. No.	Subjects	Distribution of marks Theory	Oral & Practical
		Including Clinical Assessment	
1	Study of General Anatomy and Physiology of Human Body	100	25+75
2	Clinical AND Technical aspects.	200	
Total marks of paper first and second		300	100

Second year paper Scheme

Sr. No.	Subjects	Distribution of marks Theory	Oral & Practical
1	Paper First	Including Clinical Assessment	
	NEURO ANATOMY, NEURO-PHYSIOLOGY AND NEURO PATHOLOGY	100	25+75
2	Clinical (NERVE, MUSCLES, EVOKED POTENTIAL STUDIES, INSTRUMENTS AND POLYSOMNOGRAPHIC STUDIES)	200	
Total marks of paper first and second		300	100

FIRST YEAR

PAPER FIRST

1. Study of General Anatomy and Physiology of Human Body

PAPER SECOND

1. CLINICAL:

(A) Seizure disorder and its differential diagnosis

(B) i) Normal EEG pattern in children and adult, awake and sleep.

(ii) Neonatal EEG

(iii) Normal variants

(iv) Artifacts : Eye movements, muscle pulse

(v) Activation methods: Hyperventilation, photic stimulation, sleep deprivation, others

(vi) Abnormal EEG records, definition-spike, sharp, slow waves, other abnormalities

(vii) Abnormal EEG in neurological diseases

viii) Brain death

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2. TECHNICAL ASPECTS:

- (i) Different parts of EEG machine and its functions, i.e. montage, electrodes, filter, calibration, sphenoidal electrode, depth electrodes.
- (ii) Electroencephalographic monitoring (in patients and ambulatory), Video Electroencephalography, Intraoperative records, Quantitative electroencephalography, Brain mapping and others (in brief).
- (iii) Electroencephalographer's reporting
- (iv) Record keeping.

SECOND YEAR

PAPER FIRST

1. NEURO-ANATOMY:

Muscle : Origin, insertion, nerve supply, structure
Nerve : Course-cranial and peripheral, structure

2. NEURO-PHYSIOLOGY :

Muscle :

- i) Functions of muscles
- ii) Muscle contractions
- iii) Electrical properties of muscles

Nerve:

- i) Functions of nerve
- ii) Electrical properties of nerve. Near field potential and Far field potential
- iii) Nerve conduction
- iv) Neuromuscular junction and neurotransmitters

3. NEURO-PATHOLOGY:

Muscle : Pathological changes in muscles

- i) Primary muscle disease
- ii) Injury
- iii) Metabolic
- iv) Inflammatory
- v) Others
- vi) Neurogenic muscle involvement
- vii) Neuromuscular junction abnormalities

Nerve:

- i) Demyelination
- ii) Axonopathy

PAPER SECOND

CLINICAL:

1 Nerve:

- (a) Disease affecting cranial and peripherals
 - (i) Bells palsy
 - (ii) Peripheral neuropathy
 - (iii) Entrapment neuropathy
- (b) Basic principles of nerve conduction study (NCS)
 - (i) Motor NCS

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- (ii) Sensory NCS
- (iii) F-wave
- (iv) H-reflex
- (v) Blink reflex and others
- (vi) Repetitive nerve stimulation
- (vii) Abnormalities in disease

(viii) Central motor conduction

2 Muscle:

- (a) Disease of muscle and neuromuscular junctions
- (b) Normal EMG recording-Resting/Insertional activity/Volitional recruitment pattern, Interference pattern.
- (c) Abnormal EMG –
 - (i) Myopathies
 - (ii) Neurogenic muscle involvement
 - (iii) Involuntary muscle contractions
 - (iv) Neuromuscular transmission disorder
- (d) Needle EMG – Conventional, Macro EMG, Surface EMG, Single fibre EMG

3 Evoked potential studies:

- (i) Visual evoked potential
- (ii) Brainstem auditory evoked potential
- (iii) Somatosensory evoked potential

4 Instruments:

- (i) Basic knowledge about the machines
- (ii) Electrodes
- (iii) Electrode impedance
- (iv) Identification of wave pattern
- (v) Artifacts
- (vi) Normal laboratory values
- (vii) Electromyography reporting
- (viii) Record keeping

5. Polysomnographic studies – Normal sleep and sleep disorder (in brief)

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