Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 17-May-2023

Time: Three Hours **Max. Marks: 80 Marks**

Basic Electroencephalography
Q.P. CODE: 2841

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Essay on digital signal processing and add a note on advantages of DSP and filters.
2. Classify epilepsy. Enumerate the antiepileptic drugs.
3. International 10-20 system.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Normal EEG rhythms.
5. OSA. Add a note on CPAP positive airway pressure.
6. Amplifier.
7. Time constant.
8. REM sleep.
9. EEG in sleep
10. Montages and its types.
11. Vertex sharp waves.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Patient preparation for PSG.
13. Cataplexy.
14. Alpha rhythm.
15. Sleep spindles.
16. Impedance.
17. Central sleep apnea.
18. Filters in EEG.
19. Sensitivity.
20. Sampling rate.
21. Components of EEG.
22. Calibration.
23. POSTS.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 19-May-2023

Time: Three Hours **Max. Marks: 80 Marks**

Basic of Nerve Conduction Study (NCS)

Q.P. CODE: 2842

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Essay on Trigeminal nerve. Add a note on trigeminal neuralgia.
2. Explain Sacral Plexus. Short note on sacral plexopathy.
3. Write in detail about CIDP and AIDP. Add a note on GBS.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Median nerve.
5. Peripheral nerve injury.
6. CMAP and SNAP.
7. H-Reflex
8. Conduction block
9. Patient preparation for NCS
10. Claw hand
11. Brachial Plexus

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Tarsal tunnel syndrome
13. Axillary nerve
14. Phalen's test
15 Saturday night palsy
16. EMG
17. Patient preparation for NCS
18. Cervical radiculopathy
19. Mononeuropathy
20. Cerebellum
21. Temporal dispersion
22. Progressive polyradiculopathy
23. Neuropraxia.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 22-May-2023

Time: Three Hours **Max. Marks: 80 Marks**

Applied Anatomy and Physiology Related to Neuroscience Technology
Q.P. CODE: 2843

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Essay on cerebrum. Mention a note on Broca's and Wernicke's areas and its clinical conditions.
2. Describe the origin, course, termination and functions of corticospinal tract.
3. Essay on action potential. Add short note neurotransmitters.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Medulla oblongata.
5. CSF-Formation and Circulation.
6. Development of Brain.
7. Sub-arachnoid cisterns.
8. Functions of thalamus.
9. Somatosensory pathway.
10. Parasympathetic divisions of ANS.
11. Hydrocephalus.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Signs of cerebellar dysfunction.
13. Physiology of muscle.
14. Trace the pathway for crude touch.
15 Diagram of spinal cord section.
16. Name any four cutaneous receptors.
17. Brain stem.
18. DMD.
19. Upper trunk lesion
20. 7^{th} cranial nerve
21. Sympathetic nervous system
22. Dementia
23. Schematic diagram of neuron.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 24-May-2023

Time: Three Hours **Max. Marks: 80 Marks**

Pharmacology Related to Neuroscience Technology
Q.P. CODE: 2844

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Classify antiepileptic drugs. Discuss the mechanism of action, therapeutic uses and adverse effects of phenytoin sodium.
2. Discuss the mechanism of action, therapeutic uses and adverse effects of Diazepam.
3. Classify antitubercular drugs. Discuss the mechanism of action, therapeutic uses and adverse effects of **Isoniazid.**

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Therapeutic uses of Calcium channel blockers.
5. Antiplatelet drugs.
6. Analgesics.
7. Aminopenicillins.
8. Therapeutic uses and adverse effects of Gentamicin.
9. Digoxin.
10. Ketamine.
11. Neostigmine and Pyridostigmine.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Define prodrug. Give two examples.
13. Mention two uses and route of administration of Mannitol.
14. Rationale of using Ethanol in Methanol poisoning.
15 Mention three specific adverse effects of Gentamicin.
16. Mention three drugs used in Lepra reaction.
17. Name three centrally acting skeletal muscle relaxants.
18. Superinfection.
19. Name three antiepileptic drugs.
20. Mention three classes of drugs used in Glaucoma with one example for each.
21. Mention any three used of Phenobarbitone.
22. Name three antiemetics.
23. Mention three uses of Nitroglycerine.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 17-May-2023

Time: Three Hours **Max. Marks: 100 Marks**

BASIC ELECTROENCEPHALOGRAPHY (EEG) – (RS-3)

Q.P. CODE: 3307

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Describe various wave patterns seen in normal EEG, its frequency, location, its normal and pathological causes.

2. Describe clinical features of absence seizure along with EEG findings.
   OR
   What are artifacts? List the types of artifact that you see in the laboratory and explain the methods of elimination.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Benign rolandic epilepsy.
4. EEG reporting format.
5. Triphasic waves.
   OR
   Dementia.
6. Syncope versus seizure.
7. Phase reversals.
8. Amplifiers in EEG.
9. Non conductive status epileptics.
10. Montages
    OR
    Alzheimer's disease.
11. Hydrocephalus.
12. GCS scale.

SHORT ANSWER **10 x 3 = 30 Marks**

13. Types of electrodes.
14. Analog EEG.
15. Psychogenic non epileptic seizure.
16. Continuous spike and wave during sleep.
17. PLEDS.
18. Alpha waves.
19. Sphenoidal electrodes.
20. Drip artifact.
21. Name five physiological artifacts.
22. Sampling rate

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 19-May-2023

Time: Three Hours **Max. Marks: 100 Marks**

BASICS OF NERVE CONDUCTION STUDY (NCS) – (RS-3)

Q.P. CODE: 3308

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Essay on Median nerve, Add a note on CTS
2. Essay on H-Reflex
   OR
   Essay on brachial plexus and its injuries

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Action Potential
4. CMAP
5. Motor conduction of Axillary Nerve
   OR
   Tibial Nerve
6. NMJ disorders
7. SNAP
8. Musculocutaneous Nerve
9. Axonal reflex
10. Computer application in Nerve conduction study
    OR
    Ulnar nerve
11. F-Response
12. NCS of Radial nerve

SHORT ANSWER **10 x 3 = 30 Marks**

13. Trigeminal neuralgia
14. Normal Values of H- reflex
15. Divisions of Facial nerve
16. Diagram of facial nerve conduction
17. Schematic diagram of brachial plexus
18. Saturday night palsy
19. Bell’s palsy
20. Phalen’s Maneuver test
21. Patient preparation for nerve conduction study
22. Claw hand

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 22-May-2023

Time: Three Hours **Max. Marks: 100 Marks**

Applied Anatomy and Physiology related to Neuroscience Technology (RS-3)

Q.P. CODE: 3309

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Essay on ANS and its applied physiology.
2. Describe the sulci, gyri, main functional areas and blood supply of cerebrum.
   OR
   Write an essay on corpus callosum with its applied anatomy and functions.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. CSF (Cerebrospinal Fluid).
4. Classification of receptors.
5. Circle of Willis
   OR
   Basal ganglia.
6. Blood supply of the spinal cord.
7. Facial nerve.
8. Brief note on Occipital lobe with diagram.
9. Visual pathway.
10. Fourth ventricle.
    OR
    Lumbar puncture.
11. Action potential.
12. Functions of thalamus.

SHORT ANSWER **10 x 3 = 30 Marks**

13. Meninges.
14. Broca's area.
15. Glaucoma.
16. Thalamic syndrome.
17. Hemiplegia.
18. Functions of limbic system.
19. BBB.
20. Name any four neurotransmitters.
21. Internal capsule.
22. Kyphosis.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 24-May-2023

Time: Three Hours **Max. Marks: 100 Marks**

PHARMACOLOGY (RS-3)

Q.P. CODE: 3310

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Classify antiepileptics. Write the mechanism of action, adverse effects and uses of sodium valproate.
2. Classify oral antidiabetic drugs. Write the mechanism of action, adverse effects and uses of sulphonylureas.

   OR

   Define with an example a) Receptor b) Neurotransmitter. Write briefly on neurotransmitters.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Classify antiplatelet drugs.
4. **Furosemide – Indications**, dose and adverse **effects.**
5. Classify angiotensin-converting enzyme (ACE) inhibitors with mode of action.

   OR

   Enumerate angiotensin – converting enzyme (ACE) inhibitors with mode of action
6. Uses of prednisolone.
7. Uses and adverse effects of aspirin.
8. Classify Reversible anticholinesterases and their mode of action.
9. Uses of opioid analgesics.
10. Classify centrally acting muscle relaxants.

    OR

    Levodopa – mode of action and indication.
11. Diazepam – **Indications,** dose and mode of action.
12. Compare and contrast heparin and warfarin.

SHORT ANSWER **10 x 3 = 30 Marks**

13. Name three Mydriatics.
14. Mention three uses of lignocaine.
15. List three CNS stimulants.
16. Name three drugs used in hypertension.
17. Name three anti-inflammatory drugs.
18. List three drugs used in alcohol dependence.
19. List three antitubercular drugs.
20. List three drugs used for preanaesthetic medication.
21. List three oral anticoagulants.
22. Mention three adverse effects of carbamazepine.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 23-Nov-2023

Time: Three Hours **Max. Marks: 80 Marks**

Basic Electroencephalography

Q.P. CODE: 2841

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Computer applications in EEG.
2. Write in detail on artifacts in EEG.
3. Explain in detail on the various stages in sleep.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Beta and alpha rhythm.
5. Drugs affecting EEG.
6. EEG in comatose patients.
7. Types of electrodes in EEG.
8. Patient grounding and safety in EEG.
9. Video EEG.
10. Differential power amplifier.
11. Explain the filters used in EEG.

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Pen mechanism.
13. REM sleep.
14. Draw Bipolar montage.
15. Time constant.
16. Transistors.
17. Direct current.
18. Spike wave.
19. Resistance.
20. Delta activity.
21. Biological filters.
22. Stages in sleep.
23. **Calibration**

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 28-Nov-2023

Time: Three Hours **Max. Marks: 80 Marks**

Basic of Nerve Conduction Study (NCS)

Q.P. CODE: 2842

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Essay on RNS, short note on myasthenia gravis.

   Or

   Essay on Facial nerve conduction
2. Principle, procedure and techniques of nerve conduction study.
3. Describe in detail about Median Nerve.

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Short note on sympathetic divisions of ANS.
5. Patient prepation for NCS.
6. F-Response.
7. Short essay on signal.
8. Brachial plexus.
9. CMAP.
10. Trigeminal nerve and its clinical consideration.
11. **Action potential**

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Cubital tunnel syndrome.
13. **Name few Brachial plexus Injuries**
14. CV and latency.
15 Clinical features of Median Nerve.
16. **Bell's Phenomenon**
17. **Foot drop**
18. Interpretation of NCS.
19. Axon reflex.
20. Tibial Neuropathy.
21. Tarsal tunnel syndrome.
22. Inching technique.
23. Conduction velocity.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Science Technology Degree Examination – 05-Dec-2023

Time: Three Hours **Max. Marks: 80 Marks**

Pharmacology Related to Neuroscience Technology

Q.P. CODE: 2844

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define Bioavailability. Write the factors affecting Bioavailability with an example
2. Classify Anti-anginal drugs. Write mechanism of action, uses and adverse effects of Verapamil
3. Classify drugs used in HIV infection. Write the mechanism of action, uses and adverse effects of Zidovudine

SHORT ESSAYS (Answer any Six) **6 x 5 = 30 Marks**

4. Classify Insulin preparations.
5. Frusemide (Furosemide)
6. Potassium sparing diuretics
7. Dopamine
8. Treatment of Paracetamol poisoning
9. Atropine derivatives (substitutes)
10. Lignocaine
11. Pre-anaesthetic medications

SHORT ANSWERS (Answer any Ten) **10 x 3 = 30 Marks**

12. Mention three diuretics used in ocular disorders
13. Mention three factors that affects drug absorption
14. Mention three drugs used in Hypertension
15 Mention three adverse effects of Adrenaline
16. Mention one oral and two parenteral iron preparations
17. Mention three uses of Penicillins
18. Mention the class (group) to which these drugs belongs to – Paracetamol, Sodium valproate and Morphine.
19. Mention three Contraindications of Propranolol
20. Mention any three Phase I drug metabolism
21. Mention three drug Antagonism with example
22. Explain ‘’FIRST ORDER KINETIC’’ with an example
23. Mention three first line drugs used in Tuberculosis

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 23-Nov-2023

Time: Three Hours **Max. Marks: 100 Marks**

BASIC ELECTROENCEPHALOGRAPHY (EEG) – (RS-3)

Q.P. CODE: 3307

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Depth electrodes and longterm EEG recording.
2. Describe various montages and their usefulness in specific pathologies.
   OR
   International 10-20 system.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Polysomography.
4. Calibration.
5. Low voltage EEG.
   OR
   Montage and its types.
6. Sweet artifact.
7. **EEG in Comatose Patients**
8. **Dementia**
9. Block diagram of EEG.
10. Normal variant in EEG recording.
    OR
    Activation procedure.
11. West syndrome.
12. Signal to noise ratio.

SHORT ANSWER **10 x 3 = 30 Marks**

13. **Clinical features of parkinson's disease**
14. **Neurotransmitters in CNS**
15. Burst suppression.
16. Hydrocephalus.
17. K complex.
18. Drip artifact.
19. **Pen Mechanism**
20. Transient ischemic episoders.
21. Breach rhytham.
22. Syncope.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 28-Nov-2023

Time: Three Hours **Max. Marks: 100 Marks**

BASICS OF NERVE CONDUCTION STUDY (NCS) – (RS-3)

Q.P. CODE: 3308

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Essay on Muscular Dystrophy and its types in detail.
   Or
   Write in detail on computer application in Nerve conduction studies.

2. Essay on sacral plexus and its injuries
   OR
   Essay on brachial plexus and its injuries

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. F-response
4. CMAP
5. Motor conduction of Radial nerve
   OR
   Trigeminal Neuralgia
6. NMJ disorders
7. NCS of superficial nerve
8. Action potential
9. Wallerian Degeneration
10. Axonal reflex
    OR
    Superficial peroneal nerve
11. Facial nerve conduction study
12. SNAP

SHORT ANSWER **10 x 3 = 30 Marks**

13. Phalen's Maneuver test
14. Name three physical examination of Median Nerve
15. Tarsal tunnel syndrome
16. Diagram of facial nerve conduction
17. Patient preparation for nerve conduction study
18. Saturday night palsy
19. Schematic diagram of Brachial plexus
20. Watson Test
21. Foot drop
22. Claw hand

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 02-Dec-2023

Time: Three Hours **Max. Marks: 100 Marks**

Applied Anatomy and Physiology related to Neuroscience Technology (RS-3)

Q.P. CODE: 3309

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. What is meant by dementia? What are the common causes of dementia?
2. Describe Autonomic Nervous system and symptoms of Autonomic Nervous system.
   OR
   Hypoxic ischemic encephalopathy – pathophysiology clinical features and EEG findings.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Neuro cysticercosis.
4. Narcolepsy.
5. Facial palsy.
   OR
   CSF circulation.
6. Duchenne muscular dystrophy.
7. Cerebellar ataxia.
8. Arterial blood supply of Brain
9. Stages of sleep.
10. Neuro myelitis optica.
    OR
    Neuro transmitters.
11. Oculomotor palsy.
12. Symptoms and sinus of meningitis.

SHORT ANSWER **10 x 3 = 30 Marks**

13. Sub dural hematoma.
14. Pain Pathway
15. Myasthenia Gravis
16. Pachy meningitis.
17. Essential tremor.
18. Mild congnitive impairment.
19. Membrane potentials
20. Clinical features of Parkinsons disease.
21. Neuromuscular junction.
22. Gag reflex.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Neuro Sciences Technology Degree Examination – 05-Dec-2023

Time: Three Hours **Max. Marks: 100 Marks**

PHARMACOLOGY (RS-3)

Q.P. CODE: 3310

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Second Question Choice) **2 x 10 = 20 Marks**

1. Define bioavailability. Discuss the various factors affecting drug bioavailability.
2. Classify antihypertensive drugs. Discuss the mechanism of action and adverse effects of ACE inhibitors.

   OR

   Classify Glucocorticoids. Discuss the therapeutic uses and adverse effects of Glucocorticoids.

SHORT ESSAYS (Question No 5 & 10 choice) **10 x 5 = 50 Marks**

3. Therapeutic uses and adverse effects of Diazepam.
4. Therapeutic uses and adverse effects of Nitroglycerine.
5. Phenytoin sodium.

   OR

   Warfarin.
6. Furosemide.
7. Metformin.
8. Therapeutic uses of reversible anticholinesterases.
9. Therapeutic uses and contraindications of Morphine.
10. Ketaconazole.

    OR

    Acyclovir.
11. Rifampicin.
12. Levodopa

SHORT ANSWER **10 x 3 = 30 Marks**

13. Rationale of combining Lignocaine with adrenaline.
14. Name three antiplatelet drugs.
15. Therapeutic index.
16. Name any three Mydriatics.
17. Discuss the mechanism of action and mention one specific use of Dapsone.
18. Name any three antiretroviral drugs.
19. Mention any three uses of Aspirin.
20. Name any three general anesthetic agents.
21. Mention three uses of Doxycycline.
22. Name any three skeletal muscle relaxants.