



**MAINTENANCE OF CERTIFICATION EXAMINATION
IN NEUROLOGY – MODULAR VERSION
2010 Content Outline**

100 questions	Percent
I. Headache disorders	8%
A. Primary headache disorders	
1. Migraine and migraine equivalent	
2. Tension-type headache	
3. Cluster headache	
4. Other trigeminal autonomic (paroxysmal hemicranias, SUNCT, etc.)	
5. Other primary headache disorders (hemicranias continua, cough headache, exertional headache, hypnic headache, new daily persistent headache)	
B. Secondary headache disorders	
1. Thunderclap headache (SAH, CVT, etc.)	
2. Low CSF pressure	
3. Increased intracranial pressure/mass lesions (pseudotumor, neoplasms, subdural and epidural hematomas)	
4. Vascular disorders (GCA, cervicocephalic dissections, CNS vasculitis)	
5. Cranial neuralgias (TGN, etc.)	
II. Pain disorders	2%
A. Neuropathic pain (small fiber neuropathy, post-herpetic neuralgia, radiculopathies)	
B. Central pain syndromes (thalamic, phantom, etc.)	
C. Complex regional pain syndromes	
III. Epilepsy and episodic disorders	10%
A. Focal, partial epilepsy	
1. Idiopathic with age-related onset	
a. Benign childhood epilepsy with centrotemporal spikes (rolandic seizures)	
b. Childhood epilepsy with occipital paroxysms	
2. Symptomatic	



a.	Acute	
b.	Remote	
B.	Generalized epilepsy	
1.	Idiopathic with age-related onset	
a.	Childhood absence epilepsy	
b.	Juvenile absence epilepsy	
c.	Juvenile myoclonic epilepsy	
d.	Epilepsy with grand mal seizures on awakening	
2.	Idiopathic and/or symptomatic	
3.	Symptomatic	
4.	Nonspecific etiology	
5.	Specific syndromes	
IV.	Cerebrovascular disease	10%
A.	Ischemic stroke (cerebral infarction and transient ischemic attack)	
1.	Ischemic penumbra	
2.	Large-artery atherosclerosis	
3.	Atrial fibrillation	
4.	Arterial dissection	
5.	Hypercoagulability (thrombophilia)	
B.	Intracerebral hemorrhage	
1.	Chronic hypertension	
2.	Vascular malformations	
3.	Bleeding diatheses and antithrombotic agents	
4.	Amyloid angiopathy	
5.	Tumors	
C.	Subarachnoid hemorrhage	
1.	Aneurysm	
2.	Vascular malformations	
3.	Bleeding diatheses and antithrombotic agents	
D.	Cerebral venous thrombosis	
1.	Pregnancy and puerperium	
2.	Hypercoagulability (thrombophilia)	



V. Aging, dementia, and cognitive neurology	8%
A. Delirium, dementia, and amnestic and other cognitive disorders	
1. Delirium	
a. Delirium due to a general medical condition	
b. Substance intoxication delirium	
c. Substance withdrawal delirium	
d. Delirium due to multiple etiologies	
e. Other	
2. Dementia	
a. Dementia of the Alzheimer type, with early onset	
b. Dementia of the Alzheimer type, with late onset	
c. Vascular dementia	
d. Dementia due to HIV disease	
e. Dementia due to head trauma	
f. Dementia due to Parkinson disease	
g. Dementia due to Huntington disease	
h. Dementia due to Frontotemporal dementia	
i. Dementia due to spongiform encephalopathy	
j. Dementia due to multiple etiologies	
k. Other	
3. Amnestic disorders	
a. Amnestic disorder due to a general medical condition	
b. Substance-induced persisting amnestic disorder	
c. Other	
i. Aphasia	
ii. Apraxia	
iii. Neglect	
iv. Disconnecting syndromes	
v. Agnosia	



VI. Spinal cord diseases	4%
A. Congenital	
B. Vascular	
C. Inflammation	
D. Traumatic	
E. Infectious	
F. Neoplastic	
G. Demyelinating	
H. Malformations of the spinal cord	
VII. Cranial nerve palsies	2%
A. Third, fourth and sixth nerve palsy	
B. Horner syndrome	
C. Trigeminal neuralgia	
D. Bell palsy	
E. Glossopharyngeal neuralgia	
F. Vagus nerve palsy	
G. Hypoglossal palsy	
VIII. Neuromuscular diseases (adult and child)	10%
A. Muscle diseases (inherited, congenital, and acquired)	
1. Muscular dystrophies	
a. Duchenne and Becker MD	
b. Facioscapulohumeral MD	
c. Limb girdle MD	
d. Myotonic dystrophy	
2. Inflammatory myopathies	
a. Dermatomyositis	
b. Polymyositis	
c. Inclusion body myositis	
3. Glycogenoses	
a. Myophosphorylase deficiency	
b. Acid maltase deficiency	
4. Lipidoses	
a. Carnitine deficiency	
5. Endocrine myopathies	
a. Hypothyroid myopathy	
b. Hyperthyroid myopathy	



c.	Corticosteroid myopathy	
6.	Periodic paralyses	
a.	Hypokalemic periodic paralysis	
b.	Hyperkalemic periodic paralysis	
7.	Mitochondrial myopathies	
a.	Kearns-Sayre syndrome	
B.	Disorders of the neuromuscular junction	
1.	Myasthenia gravis	
2.	Lambert-Eaton myasthenic syndrome	
3.	Congenital myasthenia gravis	
C.	Polyneuropathy	
1.	Hereditary neuropathies	
a.	Charcot-Marie-Tooth disease	
2.	Demyelinating neuropathies	
a.	Guillain-Barré syndrome	
b.	Chronic inflammatory demyelinating neuropathy	
3.	Acquired metabolic polyneuropathies	
a.	Diabetic neuropathy	
b.	Alcohol and nutritional neuropathies	
c.	Infectious neuropathies (HIV, syphilis, leprosy)	
d.	Toxic neuropathies (Hg, Pb, Zn, As)	
D.	Mononeuropathy and plexopathy	
1.	Idiopathic brachial neuritis	
2.	Erb and Klumpke palsy	
3.	Diabetic amyotrophy	
4.	Radial nerve palsy	
5.	Ulnar nerve palsy	
6.	Median nerve palsy (carpal tunnel syndrome)	
7.	Meralgia paresthetica	
8.	Peroneal nerve palsy	
E.	Radiculopathy	
1.	Cervical radiculopathy	
2.	Lumbosacral radiculopathy	
3.	Lumbar spinal stenosis	
F.	Motor neuron diseases	



1.	Spinal muscular atrophy	
2.	Amyotrophic lateral sclerosis	
IX.	Movement disorders (adult and child)	10%
A.	Parkinson disease and syndromes	
B.	Secondary parkinsonism	
1.	Progressive supranuclear palsy	
2.	Cortico basal degeneration	
3.	Multiple system atrophy	
a.	Sporadic OPCA	
b.	Shy Dragger syndrome	
c.	Striatonigral degeneration	
4.	Vascular parkinsonism	
5.	Drug-induced parkinsonism	
6.	Familial parkinsonism	
a.	Alpha synuclein	
b.	Taupathies	
7.	Parkinsonism associated with metabolic disorders	
8.	Parkinsonism associated with systemic illness	
C.	Chorea	
1.	Sydenham chorea	
2.	Wilson disease	
3.	Neuroacanthocytosis (chorea-acanthocytosis)	
4.	Drug-induced chorea	
D.	Tourette/tics	
E.	Restless legs syndrome	
F.	Essential tremor	
G.	Secondary tremor	
1.	Drug-induced	
2.	Physiologic	
3.	Associated with systemic illness	
4.	Psychogenic	
H.	Myoclonus	
I.	Dystonia	
1.	Idiopathic generalized dystonia	
2.	Focal dystonia	
a.	Cervical dystonia	



	b. Writer's cramp and other action-induced focal dystonias	
	c. Blepharospasm	
	3. Tardive dystonia and other tardive syndromes	
	4. Secondary dystonias	
	a. Associated with systemic illness	
	b. Associated with other degenerative, familial, or systemic disorders	
	J. Other	
	1. Hemifacial spasm	
	2. Stereotypies	
	3. Cerebellar disorders	
X.	Demyelinating diseases (adult and child)	4%
	A. Multiple sclerosis	
	B. Neuromyelitis optica	
	C. Optic neuritis	
	D. Acute disseminated encephalomyelitis	
	E. Transverse myelitis	
	F. Other inflammatory demyelinating disorders of the CNS (acute hemorrhagic leukoencephalitis, postinfectious/post-vaccination encephalomyelitis)	
XI.	Critical care	4%
	A. Coma	
	1. Structural	
	2. Toxic-metabolic	
	3. Subclinical seizures	
	B. Neuromuscular emergencies	
	1. Guillain-Barré syndrome	
	2. Myasthenia gravis and myasthenic crisis	
	3. Upper cervical spine injury	
	4. Critical illness	
	5. Myopathy and neuropathy	
	6. Botulism (adult and child)	
	C. Intracranial hypertension	
	1. Mass	
	2. Edema	
	a. Cytotoxic	



b. Vasogenic	
3. Meningeal process	
4. Venous thrombosis	
D. Brain death	
XII. Trauma	1%
A. Brain	
1. Concussion	
2. Parenchymal hematoma	
3. Subdural hematoma	
4. Epidural hematoma	
5. Diffuse axonal injury	
B. Spinal cord	
1. Compression by disc or bone	
2. Epidural hematoma	
C. Abuse (adult and child)	
XIII. Neurologic complications of systemic diseases	4%
A. Electrolyte disturbance with acute and chronic manifestations	
B. Acid-base disturbance	
C. Calcium and/or magnesium disturbance	
D. Nutritional deficiency states	
E. Diabetes and hypoglycemia	
F. Congenital heart disease	
G. Pulmonary disease, including extra-corporeal membrane oxygenation	
H. Renal disease (acute and chronic)	
I. Hepatic encephalopathy	
J. Endocrine disorders	
1. Congenital hypothyroidism	
2. Acquired hypothyroidism	
3. Adrenal insufficiency	
4. Hyposomatotropism	
K. Hematological disorders	
1. Sickle cell disease	
2. Polycythemia	
3. Disorders of coagulation	



XIV. Neuro-ophthalmology	2%
A. Disorders of the optic nerve and retina (optic neuropathy, papilledema, retinal emboli, retinal infarcts)	
B. Chiasmal and retrochiasmal disorders (visual field defects)	
C. Pupil disorders (Horner, tonic, third nerve palsy, etc.)	
D. Motility disorders (CN, 3, 4, 6 palsy, supranuclear gaze palsy, INO)	
XV. Neuro-otology	2%
A. Ménière disease	
B. Benign positional vertigo	
C. Acute labyrinthitis	
D. Hearing loss due to systemic disease	
E. Vertigo due to systemic disease	
F. Cerebellopontine angle lesions	
1. Acoustic neuroma	
G. Meningioma	
H. Other	
1. Pulsatile tinnitus	
2. Gait disequilibrium	
XVI. Neurogenetics/neurometabolic disorders	1%
XVII. Neuro-oncology	2%
A. Primary CNS tumors (brain, spinal cord, intra- and extra-axial)	
B. Metastatic tumors to the CNS (brain, spinal, skull, carcinomatous meningitis)	
C. Paraneoplastic syndromes	
XVIII. Neuroinfectious diseases	4%
A. Bacterial meningitis	
B. Viral meningitis	
C. Fungal meningitis	
D. TB meningitis	
E. Viral encephalitis (including herpes encephalitis)	
F. Neurocysticercosis	
G. Transverse myelitis	
H. West Nile virus encephalitis-myelitis-	



	polyradiculopathy	
I.	Poliomyelitis	
J.	Infection in immuno-suppressed patients	
	1. Toxoplasmosis	
	2. PML	
	3. HIV encephalitis	
	4. Complications of HIV	
K.	Prion disease	
L.	Other	
	1. Lyme disease	
	2. Syphilis	
	3. Rabies	
	4. Diphtheria	
	5. Botulism	
XIX.	Neurotoxicology	1%
A.	Environmental toxins, including mercury, lead, organophosphate poisons	
B.	Illegal recreational chemicals	
C.	Legal recreational chemicals	
D.	Complications of childhood ingestion of parental medication	
XX.	Sleep disorders	2%
A.	Narcolepsy	
B.	Obstructive sleep apnea	
C.	Restless legs syndrome	
D.	REM sleep behavior disorder	
E.	Primary insomnia	
F.	Primary hypersomnia	
G.	Circadian rhythm sleep disorder	
H.	Parasomnias	
	1. Sleep terror disorder	
	2. Somnambulism	
XXI.	Ethics	1%
A.	Informed consent	
B.	Brain death	
C.	End-of-life issues (withholding and withdrawing life support)	



D.	Adolescent decision making	
E.	Protective service referral	
F.	Research in children, adults, prisoners	
G.	Allocation of resources	
H.	Futility issues	
I.	Caregivers' moral integrity	
XXII. Child neurology (specific disorders)		3%
A.	Paroxysmal disorders	
1.	Seizure syndromes, video recognition, and EEG pattern recognition	
a.	Infantile spasms	
b.	Absence (childhood and juvenile)	
c.	Benign focal epilepsy	
d.	Lennox-Gastaut syndrome	
e.	Juvenile myoclonic epilepsy	
f.	Benign familial neonatal seizures	
g.	Benign frontal lobe epilepsy	
h.	Febrile seizures	
2.	Nonepileptic paroxysmal disorders	
a.	Breath holding	
b.	Kinesogenic chorea	
c.	Chorea	
d.	Parasomnias	
e.	Pseudoseizures	
f.	Benign myoclonus	
3.	Syncope	
a.	Vasovagal	
b.	Prolonged QT interval	
XXIII. Interpersonal and Communication Skills		1%
A.	Interview techniques and mental status testing	
B.	Management of difficult patients	
C.	Relationships with other professionals	
D.	Particularly common errors	
E.	Role of physician attitudes in therapy	
F.	Ethics and professionalism	
G.	Other	



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XXIV. Systems-based practice issues	1%
A. Public policy issues (e.g., parity, gender)	
B. Systems-based practice	
C. Practice-based learning and improvement	
D. Other	
XXV. Diagnostic procedures	1%
A. Mental status examination	
B. Cognitive and neuropsychological testing	
C. Neuro-imaging	
XXVI. Neurorehabilitation	2%
	100%