Question 1:
A 47 year-old hiker has pain in the left buttock that radiates to her left lateral foot. The pain is not affected by position or movement.

Question 1 (cont’d):
She also says that her left foot tingles as do parts of her right foot and thigh, left fingers, and the left anterior part of her chest.

Question 1 (cont’d):
One month ago, a physician treated her for a right Bell palsy and arthritis.

Question 1 (cont’d):
Which of the following would be most helpful in establishing a diagnosis?

A. Electromyography and nerve conduction velocity measurements
B. Somatosensory evoked responses
C. Magnetic resonance imaging of the spine and spinal cord
D. Lumbar puncture
E. Lumbar roentgenography
Question 2: A 78 year-old normotensive woman realizes suddenly that she cannot see to her left and that her left hand tingles.

Two years previous, she had a stroke which left her right arm and right leg weak. The family reports that during the past year she has become unreliable in daily responsibilities, and often forgets people’s names.

Computed tomographic scan shows a recent, well-circumscribed homogeneous right parietal-temporal hemorrhage; an old, slit-like cavity in the left medial frontal lobe under the cortex; and moderate ventricular dilatation and cortical sulcal widening.

The most likely diagnosis is:

A. Hemorrhage into a brain tumor
B. Cerebral amyloid angiopathy
C. Embolization of cardiac origin with hemorrhagic infarction
D. Multiple cerebral aneurysms
E. Recurrent head trauma

Question 3: After skiing, a 27 year-old woman developed pain in the left mastoid region that radiated to the left occiput and neck.

The next day she became dizzy, staggered, and felt pain in the left forehead and eye.
Question 3 (cont'd):
Physical examination shows normal blood pressure, but with abnormal neurologic findings including:
- decreased pin perception on the left side of the face and the right limbs and trunk;
- a left Horner syndrome;
- rotatory nystagmus;
- weakness of the left palate and pharynx;
- clumsiness and uncoordination of the left limbs.

The most likely diagnosis is:
A. Embolization to the basilar artery with pontine infarction
B. Pontine hemorrhage
C. Dissection of the left vertebral artery
D. Dissection of the left internal carotid artery
E. Artherosclerotic occlusion of the internal carotid artery

Question 4:
A 64 year-old man has progressive spasticity of gait, impotence, and urinary frequency.

Which of the following would not be helpful in diagnosis of the cause of his symptoms?
A. Lateral films of the cervical spine
B. EMG and NCV in the arms and legs
C. Computed tomographic scan of the neck
D. Magnetic resonance imaging of the neck
E. Cervical myelogram with metrizimide

Question 5:
An 80 year-old woman with mitral valve disease and chronic atrial fibrillation becomes suddenly confused during a family dinner.

She is awake and alert, and her motor function appears intact and symmetric. She speaks in long sentences unconnected to the events of the evening or the questions asked of her.
Question 5 (cont'd):

She uses many word substitutions and nonsense words. She appears unable to understand questions put to her by family members.

The most likely diagnosis is:

A. Acute psychotic break
B. Transient global amnesia
C. Dominant hemisphere stroke
D. Nondominant hemisphere stroke
E. Digitalis toxicity

Question 6:

A 59 year-old man has been incontinent of urine eight times in the past 3 months. He complains of urgency and cannot inhibit micturition.

His family notes that his gait has become hesitant and his thinking has slowed. He had a single episode of subarachnoid hemorrhage 2 years ago treated by clipping of an aneurysm. Medical history is otherwise unremarkable.

Neurologic examination shows decreased spontaneity but good memory and normal use of language; a small-stepped, shuffling gait; and bilateral extensor plantar reflexes.

The most likely diagnosis is:

A. Normal-pressure hydrocephalus
B. Alzheimer’s disease
C. Cervical spondylitic myelopathy
D. Diabetic neuropathy
E. Parkinson disease
Question 7:
Ten days ago, a 22 year-old man had an inoculation of tetanus toxoid in his right arm after removal of a splinter.

Question 7 (cont'd):
He now has severe pain in the right shoulder and arm and parasthesias in the right hand.

Question 7 (cont'd):
Physical examination shows severe weakness of muscles around the right shoulder girdle and absence of the right biceps reflex.

Question 7 (cont'd):
Passive range of movement of the shoulder is normal. Sensory examination is normal, and other reflexes in the arms and legs are normal.

Question 7 (cont'd):
The most likely diagnosis is:
A. Brachial neuritis
B. Herniated C-7 disk
C. Epidural cervical spinal abscess
D. Cervical spinal cord tumor
E. Rotator cuff injury

Question 8:
A 60 year-old man with a long history of back pain recently began feeling weakness and tingling in his legs when he walks more than a half a block. The symptoms disappear when he sits.
Question 8 (cont'd):

He has no symptoms when doing bicycling-like exercises supine on his bed even after 30 minutes.

Except for an absent left ankle reflex, neurologic examination is normal. Foot and femoral pulses are normal.

The most likely diagnosis is:

A. Aortic atherosclerosis with claudication
B. Polyneuropathy
C. Herniated lumbar L-5 disk
D. Lumbar spinal stenosis
E. Cervical spondylitic myelopathy

Question 9:

A 25 year-old previously healthy man is found unconscious in his apartment. There is no evidence of trauma.

On examination, he is responsive to voice and painful stimulation. There is no evidence of meningeal irritation. The pupils are 3 mm and unreactive.

There is no inducible eye movements by the doll’s eye maneuver or irrigation of a tympanic membrane with ice water.
Question 9 (cont’d):
The blood pressure is 90/70 mm Hg, and the pulse rate is 54/min. Respiratory function is depressed.

The most likely diagnosis is:
A. Sedative drug overdose
B. Subarachnoid hemorrhage
C. Intracranial mass
D. Brain stem stroke
E. Narcotic overdose

Question 10:
A 35 year-old woman, who had a renal transplant 4 years ago for renal failure due to membranous glomerulonephritis, is hospitalized because of progressive right homonymous hemianopia.

She has been treated with prednisone and cyclosporine. A test for the human immunodeficiency virus is negative.

Computed tomographic scan shows, in the left occipital lobe, a large low-density lesion that spared the cortical gray matter.

There is no mass effect and no contrast enhancement. There are also similar smaller lesions throughout the white matter.
Question 10 (cont’d):
The most likely diagnosis is:

A. Multiple sclerosis
B. Glioma
C. Embolic stroke
D. Progressive multifocal leukoencephalopathy
E. Primary central nervous system lymphoma

Question 11:
The diagnosis can be established by:

A. Measuring beta₂-microglobulin in cerebrospinal fluid
B. Electroencephalography
C. Arteriography
D. Magnetic resonance imaging
E. Brain biopsy

Question 12:
A 60 year-old businessman suddenly becomes confused at a meeting. He has no perceivable motor impairment and recognizes his colleagues.

Question 12 (cont’d):
He continually asks the same questions about the subject matter under consideration at the meeting.

Question 12 (cont’d):
One week later, the patient is normal, but unable to remember the events of the meeting.

Question 12 (cont’d):
The most likely diagnosis is:

A. Hysterical fugue state
B. Pulmonary embolism
C. Stroke syndrome
D. Transient global amnesia
E. Complex partial seizure
Question 13:
Four years after having lumpectomy and radiation treatment for breast carcinoma, a 45 year-old woman develops pain and weakness of the left leg that spreads over a period of 1 week to involve the right leg.

Question 13 (cont’d):
She also has local back pain in the midthorax and a circumferential band-like sensation.

Question 13 (cont’d):
In the past day, she has become incontinent of urine after brief urgency, and her genitalia are numb.

Question 13 (cont’d):
The patient weighs 160 kg (352 lbs). Reflexes are 3+ with unsustained ankle and knee clonus; toes are extensor and the legs occasionally jerk into a flexed posture.

Question 13 (cont’d):
The most likely diagnosis is:
A. Intramedullary metastasis
B. Epidural metastasis
C. Carcinomatous meningitis
D. Metastasis to the sagittal sinus
E. Radiation necrosis of the spinal cord

Question 14:
A 25 year-old woman had lost the vision in the right eye for 6 weeks at age 18. The loss was attributed to “nerves” when her father died.
Question 14 (cont’d):

Her visual acuity has been as bad as 20/400, but is now 20/20 with 20/15 acuity in the left eye.

She has been having recurrent 20- to 30-minute episodes of dimming of vision related to exercise and hot showers. She has no other neurologic symptoms.

Question 14 (cont’d):

Which of the following statements about this patient is (are) true?

A. She has a larger pupil on the right
B. She probably has a normal visually evoked potential
C. She has a right afferent pupillary defect
D. She has definite multiple sclerosis
E. She has an optic nerve tumor

Question 15:

A 23 year-old mechanic caught his hand in a vise. Two weeks later he develops a severe, constant ache in his hand.

The hand becomes pale with some cyanotic mottling, feels cold and sweaty, and movement is limited.

The most likely diagnosis is:

A. Carpal tunnel syndrome
B. Occlusion of the ulnar artery
C. Psychophysiology disorder
D. Reflex sympathetic dystrophy
E. Acute brachial plexus neuritis (Parsonage-Turner syndrome)
Question 16:
The diagnosis of brain death requires documentation of each of the following except:

A. Isolectric electroencephalogram
B. Pupillary unreactivity
C. Absence of eye movements
D. Apnea
E. Lack of receptivity and responsivity

Question 17:
Side-effects of acute cocaine use include all of the following except:

A. Seizures
B. Intracerebral hemorrhage
C. Cerebral infarction
D. Acute dystonia
E. Acute psychosis

Questions 18 & 19:
For each numbered word, phrase or statement, select the one lettered heading that is most closely associated with it. Each lettered heading may be selected once, more than once, or not at all.

A. Recurrent vertigo attacks lasting seconds occurring most frequently when turning in bed at night without tinnitus and with normal hearing
B. Single vertigo episodes lasting weeks without decrease in hearing
C. Recurrent vertigo attacks lasting hours with tinnitus, and unilateral hearing loss
D. Vertigo and dysequilibrium lasting years with bilateral hearing loss
E. An attack of vertigo with hiccups, facial numbness, and Horner syndrome followed by months of dizziness

Question 18:
1. Gentamicin ototoxicity
2. Benign positional vertigo
3. Vestibular neuritis
4. Wallenberg syndrome (lateral medullary infarction)
5. Meniere's disease

Question 19:
A. Guillain-Barre syndrome (acute inflammatory polyneuritis)
B. Chronic inflammatory demyelinating polyneuropathy (CIDP)
C. Both
D. Neither

1. Treated with plasmapheresis
2. Treated with corticosteroids
3. Complicated by respiratory dysfunction