Q.1 A 55-years-old woman, known hypertensive and on irregular treatment, presented with weakness of her right leg and arm, and difficulty in speaking while at home. There is also a history of headache with two episodes of vomiting on the day of presentation. She had right facial weakness and right hemiparesis, with extensor plantar response. BP was 240/150 mm of Hg.

a) What is the differential diagnosis?
b) What is the underlying cause?

c) How would you manage this patient?

Q.2 A 24-year-old man, who is a known case of idiopathic grand mal epilepsy since the age of 15 years, brought to the emergency department unconscious, with a history of repeated generalized fits without improvement for 2 hours. He was non-compliant with medication for the last 1 week.

Examination revealed an unconscious man with repeated generalized short lived jerking movements, bilateral extensor planters, and high temperature. His seizures were well controlled with phenytoin 300 mg / day.

a) What is the diagnosis?
b) How will you investigate?
c) How will you manage?
Q.3  A 6-year-old girl is brought to your clinic for not performing well in school. The parents reported that she had recently been moved to a different school where her teachers noted that the child was frequently inattentive and at times, she appeared to have blank stare for 8 to 10 seconds. Occasionally, she had spells of frequent blinking while giving a staring look. Her birth and development had been normal. Her general physical and neurological examination was normal, including skin examination. There is no family history of epilepsy.

a) What is your clinical diagnosis?
b) What clinical test you can perform in your clinic to precipitate her spells?
c) How will you investigate her?
d) What are the treatment options?
e) What is the prognosis?

Q.4  A 14-year-old girl presents with a 1 year history of progressive decline in mentation, change in speech, and abnormal movements of right arm and leg. You suspect Wilson’s disease.

a) What abnormality do you expect in eye examination?
b) What abnormalities do you expect on systemic examination?
c) What different movement disorders are expected in Wilson’s disease?
d) What are major diagnostic laboratory abnormalities that you expect in this patient?
e) What non-neurologic complications would you expect in this disease?
Q.5 A 25-year-old woman presents with few days history of progressive inability to stand and walk. She has a band-like burning pain at the level of her umbilicus and urinary retention. She reported a history of visual impairment in her right eye 9 months ago, with gradual and spontaneous improvement over a period of 2 weeks. Examination revealed a pale right optic atrophy, flaccid weakness of legs (grade 2/5), hyporeflexia, and bilateral extensor plantars. There is severe loss of vibration and position sensation in both legs, and a sensory level at the umbilicus.

a) What is the most likely diagnosis?  
b) How will you investigate this case?  
c) How will you manage?

Q.6 A 45-year-old man with symptoms of manic disorder but no other comorbidities was started on risperidone 6 months ago, to which sodium valproate was added recently. Next day, he became drowsy and agitated, gradually becoming disoriented in time and space and had difficulties in standing erect. On examination, he was ataxic, had slurred incoherent speech and asterixis, but without any lateralizing signs. Vital parameters were normal. Laboratory results showed normal blood picture and normal routine biochemical profile. His CPK was 120 IU/l. EEG showed diffuse generalized slowing.

a) What is the most likely cause of his present condition?  
b) What is the management of this condition?
Q.7 A 65-years-old woman, known case of hypertension, came to neurology clinic with complains of insidious onset of weakness of limbs for two months. Initially she had numbness and weakness of legs that gradually progressed to involve upper limbs. She is unable to stand for last two weeks. She denies double vision, swallowing difficulty or any urinary complaints. She had a history of gastroenteritis one week prior to these symptoms. There is no history of fever or weight loss.

On examination an elderly woman of thin lean and built, awake and oriented. Extra ocular movements were full. There was mild bilateral facial weakness. Facial sensations were symmetrical bilaterally. Tongue was central. Tone was normal. Power was 4/5 in hand muscles, 4/5 in proximal muscles, 3/5 hip flexors, 3/5 knee extensors and 1/5 ankle dorsiflexion. Reflexes were absent in lower limbs and diminished in upper limbs. Pinprick sensation was reduced the in lower limbs up to mid calf.

Investigations: CBC, blood sugar, electrolytes and TSH were within normal limits. ESR was 20mm in 1st hour.

a) Give the most likely diagnosis.
b) Enumerate further investigations that you will carry out to support your diagnosis.
c) Enlist findings you will expect in neuro-physiological study.
d) Outline your management plan.
Q.8 A 14-year-old male presented with history of progressive limb weakness for 2 years.

On examination, there is wasting of proximal part of all limbs and hypertrophy of both calf muscles. He has proximal weakness in all limbs and difficulty in walking on heels but is comfortable in walking on toes. He can walk without support and does not have ataxia. His deep tendon reflexes, plantar responses, sensory system, cranial nerves and other systemic examination are normal.

a) What is the most likely diagnosis?
b) Give atleast two differential diagnoses.
c) How would you investigate the case? Give reason for each.
d) How would you manage this patient?

Q.9 A 20-year-old university student developed headache and fever for 4 days, and vomiting and irritability for one day. There is no history of fits.

His GCS is 14/15 with a heart rate of 100 beats/min and BP 100/70 mmHg. Temperature is 102°F. Neck rigidity and Kerning’s sign are positive. There is conjunctival hemorrhage noted in his left eye. No neurological deficit. He has widespread rashes. On fundoscopy disc-margins are blurred. There is no tenderness of para-nasal sinuses and no ear discharge. Rest of the examination is normal.

a) List at least 4 differential diagnoses according to causative organisms.
b) What investigations will you order before doing CSF examination and give one reason for each investigation?
c) How will you manage this case?
Q.10 A 48-year-old hypertensive lady presents with a 3 month history of severe headaches. The headaches are generalized and last all day, and are especially worse in the mornings. She also complains of occasional blurring of vision. Her BP is 140/90 mm of Hg, pulse is 78/min regular, weight is 106 kg and she is afebrile. Her neurological examination is unremarkable except for bilateral papilloedema.

a) What is the most likely diagnosis?
b) What investigations will you carry out to reach a diagnosis?
c) How will you treat this patient?
Q.11 A 63-year-old retired teacher is brought to your clinic by her children for memory problems. Her family reports that after her retirement 3 years ago, she has gradually become forgetful. One of her daughters who was living abroad recently visited her and she could not recognize her grandchildren. She occasionally gets lost in her surroundings. She has no prior medical issues. Her examination showed an MMSE score of 23/30. Her cranial nerve, motor examination, cerebellar and sensory functions were normal. Her gait and co-ordination was unremarkable.

a) What is the most likely diagnosis?
b) What diagnostic neuroimaging is preferred in this case? Give 2 reasons for your favored diagnostic neuroimaging.
c) What laboratory work up would you like to get on this patient?
d) How will you manage this patient?

Q.12 A 7-year-old boy is brought to your outpatient clinic by his father for complaints of making faces, jerking his head abruptly and making weird sounds while watching TV or sitting quietly. His teachers also complained that he makes sounds to disturb the class.

a) What is the most likely diagnosis?
b) What are the criteria to diagnose this condition?
c) How will you investigate this patient?
d) How will you treat this patient (pharmacological and counselling)?
Q.13 A 40-year-old male was admitted with a history of headache and vomiting for 10 days. Five days ago he developed sudden severe headache with an episode of vomiting followed by closure of left eyelid.

On examination, extraocular movements on the left were restricted in all directions and that pupil was dilated. Reduced sensation over V1 and V2 territory was noted.

The CSF D/R showed a protein of 150 mg/dl, sugar 25 mg/dl, cells 25, mostly lymphocytes.

a) Where will you localize the lesion?
b) What is the likely diagnosis?
c) Enumerate the workup.
d) How would you manage this case?

Q.14 A 56-year-old married male office worker, known hypertensive and smoker presented with progressive walking difficulty for 8 months. On direct questioning he admitted to have failure of erection for 3 months.

On examination he has grade 4/5 power in the lower limbs and 5/5 in the upper limbs. Reflexes are absent and plantars are down-going. Coordination is normal. Vibration sense is absent in lower limbs while pin-prick sensation is normal.

a) What are the differential diagnoses?
b) What further examination would you do?
c) How would you further investigate?
Q.15 A 35-years-old previously healthy man came to emergency with sudden onset of severe headache associated with nausea and vomiting six hours back.

Examination: young man, awake but lethargic, following commands. Extra ocular movements were full. Pupils were bilateral equal and reactive to light. Face was symmetrical. Power was 5/5 in all muscle groups. Deep tendon reflexes were symmetrical. Plantars were bilateral extensors. Neck stiffness was present.

a) Give the most likely diagnosis.
b) Enumerate further investigations you will carry out to confirm your diagnosis.
c) Enlist the most common complications that may occur in this patient.
d) Outline your management plan.

Q.16 A 45-year-old obese male presented with decreasing work performance, lethargy and daytime sleepiness for 3 months. Neurological examination is normal.

a) What is the most likely diagnosis?
b) What additional points in history will you ask?
c) How will you work-up this case?
d) What is the management of this patient?
Q.17 A 45-year-old man presents with weakness of left lower extremity over 6-8 months. There is mild boring pain at mid back. There is no sphincter abnormality.

On examination, there is grade 3/5 power in the left lower limb with hyperreflexic ankle and knee jerks and extensor plantar reflex on the same side. There is reduced position sense at the left great toe and vibration sense over the left medial malleolus. Reduced pin-prick sensation on the right half of the body below D8 level is also noted.

a) What is the localization of this lesion?
b) What is the most likely cause of this lesion?
c) How will you investigate this patient and what abnormality would you expect?
d) What is the treatment?

Q.18 A 44-years-old female presents to neurology clinic with intermittent double vision for 3 months. For the last one month she has also been experiencing difficulty in speaking and swallowing especially in the evening.

Neurological examination is normal except vertical diplopia.

a) What is your differential diagnosis?
b) What tests would you order?
c) How would you manage this patient?
d) If the patient comes to the ER with shortness of breath and respiratory difficulty, what would you think has had happened to this patient?
Q. 19 A 28-year-old cricketer presented in the ER with history of pain in both lower limbs for 2 days and inability to walk for one day. For the last 2 hours he has had pain in abdomen and a desire to pass urine but was unable to do so.

On examination, he is conscious and oriented with normal vital signs. He has flaccid paraplegia with mute plantars and a sensory level at the umbilicus. His abdomen is tender in the lower part.

a) What is the differential diagnosis?
b) How will you investigate this patient?
c) How will you manage the case?

Q. 20 Write short notes on the following:

a) New advances in endovascular management of stroke.
b) Deep brain stimulation.

The End