

1. Which of the following cell types originate outside the central nervous system?
  - A. Astrocytes
  - B. Oligodendrogliaocytes
  - C. Microgliaocytes
  - D. Ependymocytes
  - E. Neurons of the dentate gyrus
  
2. Which of the following is true regarding acute neuronal injury?
  - A. Eosinophilic neuronal necrosis is the earliest light microscopic sign
  - B. Red neurons can be seen as early as 2 hours after injury
  - C. It represents the typical injury pattern associated with toxic-metabolic insults
  - D. It can be reversible if detected by brain biopsy
  - E. Healing neurons can be identified as chromatolytic
  
3. Which of the following is true regarding the anomaly depicted in the image?
  - A. It occurs due to problems within the 3<sup>rd</sup> month of gestation
  - B. It is usually associated with iris abnormalities
  - C. Cerebellum, brain stem and pituitary gland may be unaffected
  - D. Spinal cord is unaffected
  - E. It is due to hindbrain abnormalities
  
4. A 64-year-old man died as a result of an assault, which involved blunt trauma to the head by a baseball bat, after remaining comatose for two days. The lesion shown in this image:
  - A. is a remote infarct with hemorrhagic component
  - B. is a remote intraparenchymal hematoma secondary to trauma
  - C. is an acute hemorrhage
  - D. is encephalomalacia due to trauma
  - E. an organized abscess cavity
  
5. The image is from the temporal lobe of a 5-year-old. This process:
  - A. Typically involves the temporal lobe
  - B. Produces a granulomatous reaction in most cases
  - C. Is of unknown etiology
  - D. Causes temporary neurological deficits that leads to death within a period of 8 to 12 years
  - E. Requires electron microscopic examination for definitive diagnosis

6. A 40-year-old HIV-positive man was found to have multiple periventricular white matter lesions. Which of the following is most likely?
- A. Glioblastoma
  - B. Multiple sclerosis
  - C. Toxoplasmosis
  - D. Cryptococcosis
  - E. Chronic lymphocytic leukemia
7. Based on this image, this process:
- A. Evolves within a span of decades, with eventual death
  - B. Is primarily sporadic
  - C. Is a specific form of viral encephalopathy
  - D. Is highly contagious among medical personnel
  - E. Is difficult to suspect due to ill-defined clinical picture
8. The lesion shown in the image is from the brain of a 35-year-old, otherwise healthy woman. Which of the following is correct?
- A. It is a rare disorder in this age group
  - B. Presents with typical initial neurological signs and symptoms
  - C. It is a dysmyelinating process
  - D. It is characterized by multiple lesions of various ages
  - E. It most commonly involves basal ganglia
9. The microscopic picture shows the entorhinal cortex from the autopsy of a 75-year-old woman. Which of the following is true regarding this process?
- A. This feature is pathognomonic for this disease process
  - B. Definitive diagnosis is by autopsy
  - C. Most common location for this finding is cerebellum
  - D. It presents with rapidly progressing dementia
  - E. Gross examination of the brain rarely provides any clues
10. A 74-year-old man died as a result of lobar pneumonia. At autopsy, cerebellum showed atrophy of the vermis. This condition:
- A. Is the result of an acute intoxication
  - B. Predominantly affects granule cell layer
  - C. Is the result of chronic methanol intoxication
  - D. Can lead to cerebellar dysfunction in about 20% of cases
  - E. Is reversible with intensive therapy

11. Which of the following is correct regarding the central nervous system tumors?
- A. Supratentorial tumors are common in children
  - B. Biologic behavior does not necessarily correlate with histology
  - C. The annual incidence is 2/100,000 for intracranial tumors
  - D. Meningioma is the most common primary brain tumor
  - E. Hematogenous spread is common in high grade tumors due to vascular proliferation
12. Which of the following is correct regarding the brain tumor shown in the picture?
- A. It is considered as a WHO Grade II tumor
  - B. It is a relatively well-circumscribed tumor, rendering gross total resection possible
  - C. In spite of gross total resection, the prognosis is grim
  - D. It typically occurs in the cerebral hemispheres in the elderly
  - E. Typical gross appearance is a solid, well-circumscribed mass
13. Which of the following is correct regarding the brain tumor shown in the picture?
- A. Most are WHO Grade II; however, some can be WHO Grade IV
  - B. It has a high propensity to infiltrate the leptomeninges, since most arise in the cortex
  - C. Microcalcifications are helpful to the diagnosis, but are present in only 20 % of cases
  - D. Clear cytoplasm due to glycogen accumulation is typical
  - E. If identified, losses of 1p and 19q indicate better response to treatment
14. Which of the following is correct regarding the brain tumor shown in the picture?
- A. This is an undifferentiated tumor, although neuronal and glial markers can be expressed
  - B. The most common location is the pineal region of young adults
  - C. Losses of 22p is the most common genetic alteration
  - D. This is a highly malignant tumor with 5-year survival rate of less than 10%
  - E. It has a high propensity to infiltrate throughout the brain parenchyma
15. Which of the following types of meningioma has the worst prognosis based on histological features?
- A. Fibroblastic
  - B. Chordoid
  - C. Secretory
  - D. Rhabdoid
  - E. Metaplastic