Multiple Choice Questions Section

The Neurosciences Journal includes this section of multiple choice questions as part of its commitment to continuous education and learning in Neurosciences. Experts in various neuroscience specialties are invited to participate with their knowledge and expertise in this section.

Neurology, neurosurgery, and other board residents are encouraged to read this section to improve their knowledge and direct their reading for written examinations.

Neurophysiology

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Choose the most appropriate single answer.

1. In EEG recording, which of the following benign variants is only seen during awake state:
   a. Vertex wave.
   b. Lambda wave.
   c. K complex.
   d. 14 & 6 Hz positive bursts.
   e. 6 Hz spike-and-wave (phantom spike-and-wave).

2. Wave III in a brain auditory evoked potential (BAEP) study, is likely to be generated by:
   a. Activation of the nucleus or axons of the lateral lemniscus.
   b. Activation of the superior olivary nucleus.
   c. Distal action potential of VIII cranial nerve.
   d. Ipsilateral proximal VIII cranial nerve or the cochlear nucleus.
   e. Activation of the inferior colliculus.

3. All of the following are technically required for EEG recording in suspected cerebral death, except:
   a. Interelectrode impedances should be under 10,000 Ohms.
   b. Interelectrode impedances should be over 100 Ohms.
   c. Interelectrode distances should be at least 10 centimeters.
   d. Sensitivity must be increased to at least 2 uV/mm.
   e. Recording should be at least for 20 minutes.

4. Which of the following interictal EEG finding(s) is/are an electrographic feature(s) seen in a classical Lennox-Gastaut Syndrome:
   a. Generalized slow spike-and-wave (1.5 to 2.5 Hz) during awake.
   b. Paroxysmal fast activity during sleep.
   c. Focal spikes and sharp waves.
   d. a & b.
   e. a & c.

5. Which of the following disorders increases the central conduction time in a somatosensory evoked potentials (SSEPs) study:
   a. Subacute combined degeneration.
   b. Amyotrophic lateral sclerosis.
   d. Congenital insensitivity to pain.
   e. Tourette's syndrome.
**Answers:**

1. **b**
   All potentials are seen in drowsy and/or sleep state, except for lambda wave, which occurs during wakefulness and recorded occipitally while the subject actively scans a picture.

2. **b**
   The proposed sites of BAEP waveform generation are often based on limited data from patients with brain stem lesions. Wave I is generated by distal action potential of VIII cranial nerve, wave II is generated by ipsilateral proximal VIII cranial nerve or the cochlear nucleus, wave III by activation of the superior olivary nucleus, wave IV by activation of the nucleus or axons of the lateral lemniscus, and wave V by activation of the inferior colliculus.

3. **e**
   Recording should be for at least 30 minutes. Other standards are also required; a full set of scalp electrodes should be utilized, the integrity of the entire recording system should be tested, filter settings should be appropriate for the assessment of electro-cerebral silence, and recordings should be made only by a qualified technologist.

4. **d**
   In addition to these classical findings, slow background activity is a common EEG finding. Focal and multifocal epileptiform abnormalities are less commonly seen.

5. **a**
   Vitamin B12 deficiency causing subacute combined degeneration will delay or abolish cortical SSEPs.

**References**