Multiple-Choice Questions (MCQs)

1. **Which of the following is NOT a component of a functional physiotherapy assessment for neurological conditions?**
   a) Assessment of higher cortical functions
   b) Assessment of cranial nerve function
   c) Assessment of bone density
   d) Assessment of gait abnormalities

2. **What is the primary purpose of assessing tone in a neurological patient?**
   a) To evaluate bone structure
   b) To identify spasticity, rigidity, or hypotonia
   c) To measure joint range of motion
   d) To assess respiratory function

3. **Which test is commonly used to assess cerebellar function in a neurological examination?**
   a) Romberg test
   b) Finger-to-nose test
   c) Reflex hammer test
   d) Goniometry

4. **When assessing sensory function, which sensation is associated with the dorsal column pathway?**
   a) Pain
   b) Temperature
   c) Vibration and proprioception
   d) Deep pressure

5. **What is the significance of assessing higher cortical functions like apraxia in neurological patients?**
   a) To evaluate muscle strength
   b) To assess cognitive and motor planning abilities
   c) To measure reflex activity
   d) To determine respiratory capacity

Short-Answer Questions

6. Describe the steps involved in assessing cranial nerve function in a patient with a suspected neurological condition.
7. Explain the difference between spasticity and rigidity when assessing muscle tone in neurological patients.
8. How would you assess gait abnormalities in a patient with a neurological condition, and why is this assessment important?
9. Discuss the importance of assessing functional abilities in a patient with a neurological condition, providing one example of a functional ability test.

Design Thinking (DT)-Based Question

10. Design a patient-centered assessment protocol for a stroke patient with hemiplegia to evaluate their functional abilities for daily living. Outline the steps you would take to empathize with the patient, define the assessment goals, ideate possible assessment methods, prototype a specific assessment tool, and test its effectiveness. Provide a brief explanation of how this protocol aligns with the principles of neurological physiotherapy assessment.

Answer Key with Explanations and References

Multiple-Choice Questions

1. **Answer: c) Assessment of bone density**
   Explanation: Bone density assessment is not part of the functional physiotherapy assessment for neurological conditions, which focuses on higher cortical functions, cranial nerve function, tone, sensory function, and gait abnormalities (Syllabus, Page 73, Unit B). Bone density is more relevant to orthopedic conditions.

2. **Answer: b) To identify spasticity, rigidity, or hypotonia**
   Explanation: Assessing tone helps identify abnormalities like spasticity (velocity-dependent resistance), rigidity (constant resistance), or hypotonia (reduced tone), which are critical for planning physiotherapy interventions (Syllabus, Page 73, Unit B, Point 6).

3. **Answer: b) Finger-to-nose test**
   Explanation: The finger-to-nose test assesses cerebellar function by evaluating coordination and accuracy of movement. The Romberg test assesses balance, not cerebellar function specifically (Syllabus, Page 65, Unit B, Point 7).

4. **Answer: c) Vibration and proprioception**
   Explanation: The dorsal column pathway is responsible for transmitting vibration, proprioception, and fine touch sensations, whereas pain and temperature are carried by the spinothalamic tract (Syllabus, Page 65, Unit B, Point 5).

5. **Answer: b) To assess cognitive and motor planning abilities**
   Explanation: Assessing higher cortical functions like apraxia evaluates a patient's ability to plan and execute purposeful movements, which is critical for functional rehabilitation in neurological conditions (Syllabus, Page 65, Unit B, Point 8).

Short-Answer Questions

6. **Answer**: Assessing cranial nerve function involves testing the 12 cranial nerves for motor and sensory functions. Steps include:
   - **Observation**: Look for facial asymmetry or abnormal eye movements.
   - **Specific Tests**: For example, test CN II (optic) via visual acuity, CN III, IV, VI (oculomotor, trochlear, abducens) via eye movements, CN V (trigeminal) via facial sensation and jaw movement, CN VII (facial) via facial expressions, and CN XII (hypoglossal) via tongue movement.
   - **Documentation**: Note any deficits like diplopia or facial droop.
   Explanation: This systematic assessment identifies cranial nerve deficits that may affect functions like swallowing or vision, guiding physiotherapy interventions (Syllabus, Page 65, Unit B, Point 3).

7. **Answer**: Spasticity is a velocity-dependent increase in muscle tone with exaggerated reflexes, often seen in upper motor neuron lesions (e.g., stroke). Rigidity is a constant resistance to movement, regardless of velocity, typically seen in Parkinson's disease. Spasticity may present with a clasp-knife phenomenon, while rigidity feels like a "lead pipe" or "cogwheel" resistance.
   Explanation: Differentiating spasticity from rigidity helps tailor interventions, such as stretching for spasticity or rhythmic movements for rigidity (Syllabus, Page 65, Unit B, Point 6).

8. **Answer**: Gait assessment involves observing the patient's walking pattern, noting abnormalities like asymmetry, foot drop, or scissoring gait. Methods include:
   - **Visual Observation**: Assess stance, swing phases, and posture.
   - **Gait Parameters**: Measure step length, cadence, and base width.
   - **Functional Tests**: Use tools like the Timed Up and Go test.
   This assessment is important to identify mobility limitations and risks of falls, informing gait training strategies.
   Explanation: Gait assessment is critical for functional rehabilitation and safety (Syllabus, Page 65, Unit B, Point 9).

9. **Answer**: Assessing functional abilities determines a patient's capacity to perform daily activities, guiding rehabilitation goals. An example is the Functional Independence Measure (FIM), which evaluates tasks like dressing or transfers. This helps quantify disability and track progress.
   Explanation: Functional assessments ensure patient-centered care by focusing on real-world abilities (Syllabus, Page 73, Unit B, Point 12).

Design Thinking (DT)-Based Question

10. **Answer**:
    Empathize: Conduct a patient interview to understand the stroke patient's daily challenges, such as difficulty dressing or walking, and their emotional needs (e.g., frustration with dependency). Observe their home environment for barriers.
    Define: Set goals to assess mobility, upper limb function, and independence in activities of daily living (ADLs) like eating or toileting.
    Ideate: Consider tools like the FIM, Barthel Index, or a customized checklist for ADLs. Include observational gait analysis and upper limb coordination tests.
    Prototype: Develop a checklist assessing specific ADLs (e.g., ability to hold a spoon, walk 10 meters) with a scoring system (0–5 based on independence level). Include a balance test like the Berg Balance Scale.
    Test: Apply the checklist in a clinical setting, observe ease of use, and gather patient feedback on clarity. Adjust based on whether scores reflect functional limitations accurately.
    Explanation: This protocol aligns with Unit B's focus on functional physiotherapy assessment by prioritizing patient-centered outcomes and integrating clinical and functional evaluations (Syllabus, Page 73, Unit B).