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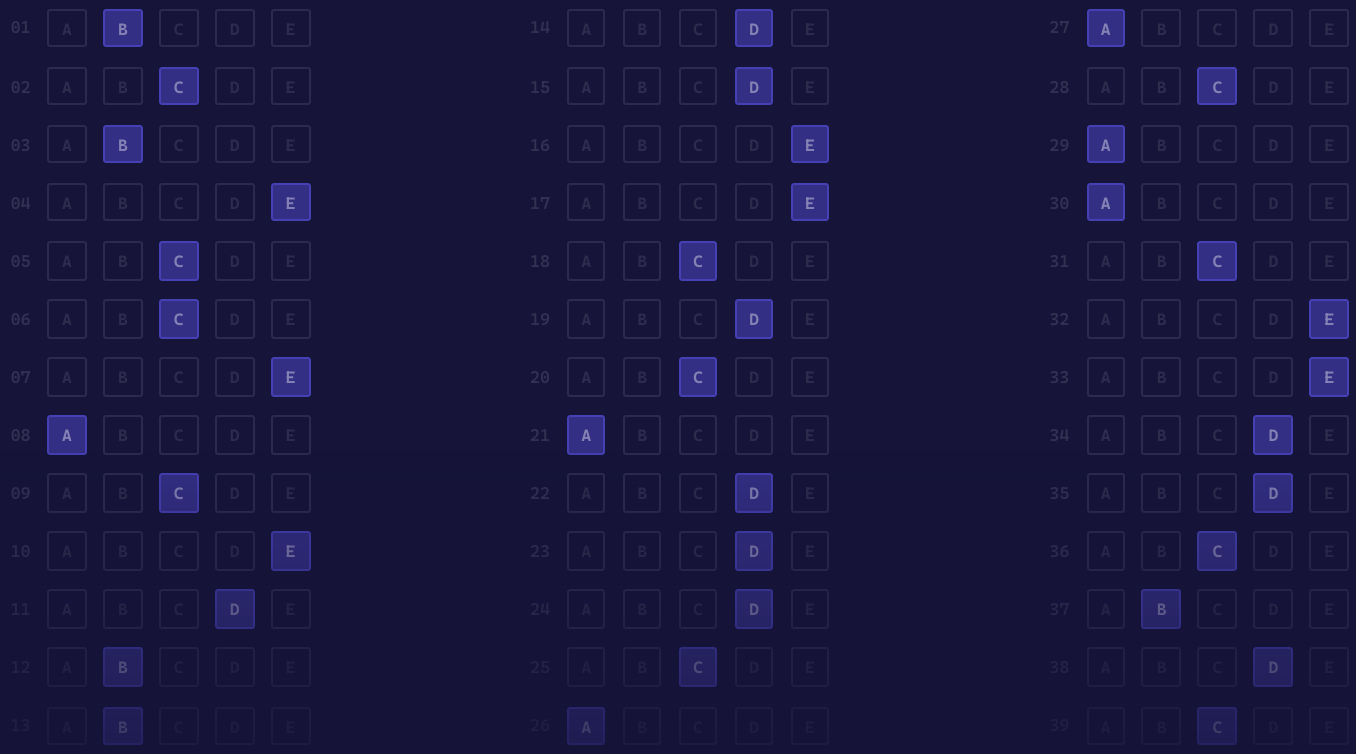

PRACTICE QUESTIONS

American Physical Therapy Association (APTA)

QXGUBUK9

Specialist Certification Exam In Clinical Electrophysiologic Physical Therapy Accommodations

EDITION	QUESTIONS	FORMAT
Demo	9	Limited Edition PDF

Before you begin

What this is

9 practice questions for American Physical Therapy Association (APTA) `QXGUBUK9`, each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, `QXGUBUK9`
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

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QUESTION 1 SINGLE CHOICE

Which of the following is an absolute contraindication to the application of electrical stimulation (e.g., neuromuscular electrical stimulation or TENS)?

A Osteoporosis in the region of application

B Demand-type cardiac pacemaker

C Impaired cognition

D Skin hypersensitivity

ANSWER B

WHY A demand-type cardiac pacemaker is an absolute contraindication to electrical stimulation because the current can interfere with pacemaker sensing and function, potentially causing arrhythmia. The other options (osteoporosis, impaired cognition, skin hypersensitivity) are relative considerations but not absolute contraindications to NMES/TENS.

QUESTION 2 SINGLE CHOICE

Which peripheral nerve is most commonly evaluated using nerve conduction studies when assessing carpal tunnel syndrome?

A Ulnar nerve

B Radial nerve

C Median nerve

D Musculocutaneous nerve

ANSWER C

WHY Carpal tunnel syndrome is a compressive mononeuropathy of the median nerve at the wrist. Nerve conduction studies classically demonstrate prolonged distal motor and sensory latencies of the median nerve across the wrist, often with comparison studies of the ulnar nerve.

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QUESTION 3 SINGLE CHOICE

In nerve conduction studies, what is the primary purpose of using surface (skin) electrodes as opposed to needle electrodes for recording?

A Surface electrodes record single motor unit action potentials

B Surface electrodes provide higher amplitude recordings with less patient discomfort

C Surface electrodes bypass the need for skin preparation

D Surface electrodes are required for all sensory nerve studies

ANSWER B

WHY Surface electrodes record compound action potentials from a larger population of axons, yielding higher amplitude waveforms and are generally well tolerated by patients. Needle electrodes, in contrast, are typically used to assess individual motor unit or needle EMG activity, and require skin preparation but provide more focal recording.

QUESTION 4 SINGLE CHOICE

Which EMG finding is most characteristic of an acute, complete lower motor neuron lesion (e.g., a recent peripheral nerve transection)?

A Fibrillation potentials and positive sharp waves observed at rest

B Decreased insertional activity and a full interference pattern on recruitment

C High-amplitude, long-duration, polyphasic motor unit action potentials with reduced recruitment

D Myotonic discharges that wax and wane with needle movement

ANSWER A

WHY Acute denervation (typically appearing 7–14 days after injury) produces spontaneous, involuntary single-fiber discharges at rest—fibrillation potentials and positive sharp waves—because the muscle fiber has lost its nerve supply. Option C describes chronic neurogenic changes, and option D describes myotonic disorders.

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QUESTION 5 SINGLE CHOICE

Which waveform parameter most directly determines whether a patient perceives sensory-level versus motor-level stimulation during electrical stimulation?

- **A** **Frequency (pulses per second)**
- **B** Electrode size
- **C** Treatment duration
- **D** Skin temperature

ANSWER **A**

WHY Frequency determines the perception and physiological response to electrical stimulation: lower frequencies (≈2–10 Hz) tend to produce sensory/motor twitching responses and are commonly used for muscle re-education, while higher frequencies (>50 Hz) produce tetanic muscle contraction. The other parameters influence comfort, current density, or tolerance but not the sensory-versus-motor threshold directly.

QUESTION 6 MULTIPLE CHOICE

Which of the following electrodiagnostic findings are consistent with a demyelinating polyneuropathy (such as chronic inflammatory demyelinating polyneuropathy, CIDP)? (Choose two.)

- **A** **Markedly prolonged distal motor latencies**
- **B** **Significantly slowed nerve conduction velocities outside normal limits**
- **C** Fibrillation potentials and positive sharp waves in distal muscles
- **D** Preserved sensory nerve action potential amplitudes
- **E** **Prolonged or absent F-waves**

ANSWER **A · B · E**

WHY Demyelinating neuropathies characteristically show slowed conduction velocities, prolonged distal motor latencies, and prolonged or absent late responses (F-waves and H-reflexes) due to impaired conduction across demyelinated segments. Fibrillations/positive sharp waves (option C) indicate axonal loss, not primary demyelination. Sensory amplitudes are typically reduced, not preserved (option D).

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QUESTION 7 SINGLE CHOICE

When applying electrical stimulation across the thorax or transcerebrally, which safety precaution is essential?

A Use bipolar technique with large, widely spaced electrodes

B **Ensure current does not cross the heart or pass through the head/neck**

C Apply stimulation only in the presence of full sensory loss

D Use the highest available frequency to minimize risk

ANSWER **B**

WHY Electrical current traversing the thorax can induce cardiac arrhythmia, and transcerebral current can provoke seizure or other CNS effects. Standard safety practice is to avoid current paths that cross the heart, carotid sinus, or brain. The other options either describe inappropriate techniques or have no effect on cardiac/cerebral current density.

QUESTION 8 SINGLE CHOICE

What is the role of the stimulator in a nerve conduction study?

A To record the compound muscle action potential

B **To deliver a controlled electrical pulse that depolarizes the peripheral nerve**

C To amplify and filter the biopotential signal

D To convert analog signals to digital for display

ANSWER **B**

WHY The stimulator delivers a brief, controlled electrical current pulse of known intensity and duration to depolarize the peripheral nerve under study, producing a propagated action potential. Recording electrodes (option A), amplifiers (option C), and analog-to-digital converters (option D) perform the other functions.

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QUESTION 9 MULTIPLE CHOICE

Which of the following are recognized indications for the clinical use of transcutaneous electrical nerve stimulation (TENS)? (Choose two.)

A **Acute postoperative pain**

B **Chronic low back pain**

C First-trimester pregnancy

D Demand-type cardiac pacemaker

E Treatment of known malignancy in the stimulation field

ANSWER **A** · **B**

WHY TENS is clinically indicated for acute postoperative pain and chronic musculoskeletal pain conditions such as low back pain, supported by clinical practice guidelines. Pregnancy (especially first trimester), demand-type pacemakers, and active malignancy in the stimulation field are listed contraindications/precautions to TENS.

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