

FOR QUESTIONS 1 THROUGH 24 SELECT THE SINGLE BEST ANSWER - (3 points each)

1. A dermatome is the area of skin that is innervated by a single...

- dorsal root.
- dorsal ramus.
- spinal nerve.
- cutaneous nerve.

2. Starting from an upright standing position, when you bend your spine laterally to the right which of the following does **NOT** occur?

- isometric contraction of the ipsilateral erector spinae  $\pi$
- gravity acts as one of the prime movers  $\tau$
- compression of the ipsilateral side of the intervertebral discs
- lengthening contraction of the contralateral erector spinae

3. All of the following anatomical features make it advantageous to perform a spinal tap at mid to lower lumbar vertebral levels **EXCEPT?**

- large interlaminar spaces
- non-overlapping spinous processes
- absence of the spinal cord
- absence of the subarachnoid space

4. Which of the following functional nerve fiber types conveys <sup>afferent</sup> motor innervation to the sweat glands located in the skin over the medial 2/3 of the back?

- somatic afferent
- visceral afferent
- somatic efferent
- visceral efferent

5. The cell bodies of the sensory neurons for the C4 dermatome are located in the... <sup>afferent</sup>

- brain.
- C4 spinal cord segment.
- C4 dorsal root ganglion.
- skin on shoulder pad area.

6. An irritative lesion of a spinal nerve could be caused by pathological changes in all of the following structures **EXCEPT** ?

intervertebral disc  
zygapophyseal joint  
spinous process of vertebra  
pedicle of vertebra

7. A traumatic injury has crushed a patient's spinal cord at the T12 vertebral level. Sensation would most likely be affected in which of the following dermatomes?

T12 only  
T12 thru S5  
T12 and L1  
L4 thru S5

8. On a plain film x-ray, black or darker areas on the image represent structures that are...

radiopaque.  
denser.  
radiolucent.  
superimposed.

9. Which of the following is **NOT** innervated by dorsal rami?

skin on the medial 2/3 of the back  
erector spinae muscles  
zygapophyseal joints  
anterior longitudinal ligament

10. Which of the following statements is **NOT** correct?

The epidural space contains valveless veins which connect to veins in the pelvis, abdomen, thorax and cranial cavity.  
The subarachnoid space extends inferiorly to the level of the S1-2 vertebrae.  
The subdural space contains cerebrospinal fluid.  
The inferior end of the conus medullaris is located at the level of the L1-2 vertebrae.

11. A small posterolateral herniation of the L3-4 intervertebral disc would typically produce pain in which of the following dermatomes?

L2  
L3  
L4  
L5

12. A line connecting the highest levels of the iliac crests would intersect the spinous process of the...

L1 vertebra.  
L2 vertebra.  
L4 vertebra.  
S2 vertebra.

13. A 40 year-old man seeks medical attention at the emergency room. He reported that he fell at a construction site and suffered a deep wound to his posterior arm. An initial exam revealed that he could not extend his wrist, yet elbow extension was possible. A lesion to which of the following nerves is consistent with these findings?

musculocutaneous  
axillary  
median  
radial

14. A young woman was preparing to give blood at the local Red Cross Blood Drive. During the venous puncture procedure in the cubital fossa she suddenly experienced sharp pain, particularly over the lateral part of her palm. Which of the following most likely explains her pain?

The needle punctured the radial nerve.  
The brachial vein was pierced.  
The median nerve was pierced.  
The ulnar nerve was pierced.

L T A N M

15. A stab injury to the upper anterior arm left a security guard with significant weakness in elbow flexion and reduced sensation from the skin on the lateral side of his forearm. Which of the following nerves was probably lesioned?

axillary  
medial cord of the brachial plexus  
median  
musculocutaneous

16. Adduction at the wrist can be produced by which of the following muscles?

flexor carpi radialis ✓  
brachioradialis  
extensor carpi ulnaris  
flexor digitorum profundus ✓

17. A lesion of the radial nerve at the elbow could result in which of the following symptoms?

loss of thumb adduction  
weakness in thumb abduction  
weakness in flexion of the index finger  
weakness in abduction of the index finger

18. Which of the following nerves is **INCORRECTLY** matched with a muscle(s) it innervates?

median – interosseous muscles  
radial – extensor indicis  
ulnar – flexor carpi ulnaris  
median – lateral 2 lumbricals

19. Extension of the index finger with a closed fist is a good test of which of the following nerves?

median  
ulnar  
radial  
musculocutaneous

20. A wrist injury immediately medial to the flexor carpi radialis tendon could result in...

loss of thumb adduction.  
weakness in thumb abduction.  
weakness in thumb extension.  
diminished sensation from the skin over the palmar surface of the little finger.

21. Which of the following muscle and action pairings is **INCORRECT**?

extensor pollicis longus – thumb extension at the IP joint  
extensor carpi radialis longus – wrist abduction  
lumbricals – simultaneous MP extension and IP flexion of digits 2 – 5  
flexor digitorum superficialis – PIP flexion of digits 2 – 5

22. The best test for the trapezius is...

extension of the humerus at the glenohumeral joint.  
abduction of the humerus at the glenohumeral joint.  
elevation of the scapula (shoulder girdle).  
abduction of the scapula.

23. Which of the following statements about the latissimus dorsi is **NOT** correct?

- It extends the humerus at the glenohumeral joint. ✓
- It is innervated by the thoracodorsal nerve. ✓
- It adducts the humerus at the glenohumeral joint. ✓
- When paralyzed it causes a winged scapula.

24. A tendonitis involving the tendon forming the floor of the subacromial (subdeltoid) bursa is the most common cause of subacromial bursitis. That tendon is the...

- supraspinatus tendon.
- infraspinatus tendon.
- trapezius tendon.
- serratus anterior tendon.

25. A patient presenting with an inability to fully elevate the upper limb overhead by flexion or abduction at the shoulder because of weakness in upward rotation of the glenoid and a medial winging of the scapula that is exaggerated by pushing against a wall with the hand has a lesion of the...

- axillary nerve.
- long thoracic nerve.
- accessory nerve.
- suprascapular nerve.

26. A patient with entrapment of the suprascapular nerve as it courses through the scapular notch will have weakness or paralysis of the...

- pectoralis major and minor muscles.
- subscapularis and teres major muscles.
- supraspinatus and infraspinatus muscles.
- teres major and minor muscles.

27. A fracture of the surgical neck of the humerus is most likely to injure the...

- radial nerve and deep brachial artery.
- axillary nerve and thoracoacromial artery. ✗
- musculocutaneous nerve and subscapular artery. ✗
- axillary nerve and posterior circumflex humeral artery.

28. Which muscle has portions that can perform shoulder flexion, extension, internal rotation, external rotation and abduction?

Pectoralis major ✓  
 Deltoid  
 Supraspinatus ✓  
 Subscapularis ✓

29. The best test for the right sternocleidomastoid muscle is...

elevation of the sternum.  
 laterally bend the neck to the left against resistance.  
 turn the chin to the left against resistance.  
 turn the chin to the right against resistance.

30. An injury to the superior trunk of the brachial plexus will compromise at least some of the functions of all of the following nerves EXCEPT the...

radial nerve.  
 ulnar nerve.  
 musculocutaneous nerve.  
 axillary nerve.

31. An injury to the brachial plexus that totally paralyzed all parts of the pectoralis major muscle would have to involve the...

medial and lateral cords.  
 middle and inferior trunks.  
 anterior divisions of the superior and middle trunks.  
 posterior divisions of all three trunks.

32. When you test elbow flexion with the forearm forcibly pronated, the muscle you are isolating and testing is the...

pronator teres.  
 brachioradialis.  
 brachialis.  
 biceps brachii.

33. Trauma to the medial epicondyle of the humerus is most likely to injure which of the following nerves?

Ulnar  
 Median  
 Radial  
 Musculocutaneous

1. C
2. A
3. D
4. D
5. C
6. C
7. D
8. C
9. D
10. C
11. C
12. C
13. D
14. C
15. D
16. C
17. B
18. A
19. C
20. B
21. C
22. C
23. D
24. A
25. B
26. C
27. D
28. B
29. C
30. D
31. A
32. C
33. A

