SECTION 1: SINGLE BEST ANSWER QUESTIONS

1. **Concerning statistical analysis, which statement below is true?**
   - A A Type I error accepts the false null hypothesis (e.g., false negative). A benefit is missed when it was there to be found.
   - B A Type II error is the incorrect rejection of a true null hypothesis (e.g., false positive). A benefit is perceived when really there is none.
   - C A Null hypothesis is a statement of no significant difference or effect.
   - D Specificity (true negative rate) measures the proportion of positives that are correctly identified as such (e.g., the percentage of people with a disease who are correctly identified as having the disease).
   - E Sensitivity (true positive rate) measures the proportion of negatives that are correctly identified as such (e.g., the percentage of healthy individuals who are correctly identified as not having the disease).

2. **With regard to hernias, which of the following is correct?**
   - A A 28-year-old man presents with abdominal and groin pain following a rugby match. Diagnosis: Paraumbilical hernia.
   - B A 73-year-old plumber presents with a painful groin. He has had the pain for years and it is associated with a swelling. He is able to reduce the lump with ease. Diagnosis: Lumbar hernia.
   - C A 40-year-old woman presents with a painful groin. There is a small palpable mass, which is located in her right upper thigh. Diagnosis: Spigelean hernia.
   - D A 53-year-old man presents with pain in the right iliac fossa with a palpable mass. His past surgical history includes an appendicectomy. Diagnosis: Umbilical hernia.
   - E A 6-year-old boy had a reducible swelling around his umbilicus. Diagnosis: Paraumbilical hernia.

3. **Which nerve is damaged in the scenario below? A 65-year-old woman is referred with a loss of sensation over her thumb index and middle finger. Her radiograph confirms a distal radius fracture.**
   - A Axillary nerve
   - B Lateral pectoral nerve
   - C Median nerve
   - D Musculocutaneous nerve
   - E Radial nerve

4. **Which nerve is damaged in the scenario below? A 57-year-old man has follow off his ladder and presents with a wrist drop. His radiograph demonstrates a mid-shaft fracture.**
   - A Axillary nerve
   - B Lateral pectoral nerve

C Musculocutaneous nerve

D Radial nerve

E Suprascapular nerve

5. **Which nerve is damaged in the scenario below? A 43-year-old man has a deep laceration to his right wrist following a fight. On examination, he has a loss of thumb adduction and loss of sensation over his little and ring fingers.**

A Median nerve

B Musculocutaneous nerve

C Radial nerve

D Suprascapular nerve

E Ulnar nerve

6. **For each of the reflex described below, select the single best root values from the options listed. Biceps reflex.**

A C3/C4

B C4/C5

C C5/C6

D C6/C7

E C7/C8

7. **Select the single best anatomical level in which the IVC is formed from the common iliac veins?**

A L1

B L2

C L3

D L4

E L5

8. **Select the single best anatomical level in which the superior mesenteric artery comes off the aorta?**

A T12

B L1

C L2

D L3

E L4

9. **For the equation described below, select the single best answer. [(2 × diastolic) + systolic]/3**

A Cardiac index

B Cerebral blood flow

C Cerebral perfusion pressure

D Mean arterial pressure

E Pulmonary vascular resistance

10. **For the equations described below, select the single best answer. Cardiac output/heart rate**

(HR)

A Cerebral blood flow

B Cerebral perfusion pressure

C Mean arterial pressure

D Pulmonary vascular resistance

E Stroke volume

11. For the equation described below, select the single best answer. (Mean pulmonary artery pressure – mean pulmonary capillary wedge pressure) × 80/cardiac output

A Cardiac index

B Cerebral blood flow

C Cerebral perfusion pressure

D Mean arterial pressure

E Pulmonary vascular resistance

12. For the equation described below, select the single best answer. CPP/CVR

A Cardiac index

B Cerebral blood flow

C Cerebral perfusion pressure

D Mean arterial pressure

E Pulmonary vascular resistance

13. For the equation described below, select the single best answer. Cardiac output/body surface area

A Cardiac index

B Cerebral blood flow

C Cerebral perfusion pressure

D Mean arterial pressure

E Pulmonary vascular resistance

14. For the equation described below, select the single best answer. MAP-ICP

A Cardiac index

B Cerebral blood flow

C Cerebral perfusion pressure

D Mean arterial pressure

E Pulmonary vascular resistance

15. For the equation described below, select the single best answer. (Mean arterial pressure – mean right atrial pressure) × 80/cardiac output

A Cardiac index

B Cerebral blood flow

C Mean arterial pressure

D Pulmonary vascular resistance

E Systemic vascular resistance