



Alternative Question Format Sample Questions

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INTRODUCTION

The purpose of the National Certification Examination (NCE) is to assess the knowledge, skills, and abilities necessary for entry-level nurse anesthesia practitioners. The NCE has consisted solely of standard, four-option multiple choice questions (MCQ) until August 2009. In order to enhance the ability of the NCE to assess entry-level competency in the field of nurse anesthesia, the Council on Certification of Nurse Anesthetists (CCNA) has added *alternative question formats* to the NCE. These question formats are multiple correct response (MCR), calculation, drag and drop, and hotspot questions.

The purpose of this document is to provide examinees with several examples of these new question formats. The intent of providing these examples is to give the examinee an idea of how the questions will appear on the NCE, and NOT to provide a comprehensive sampling of the content outline.

The examples which follow currently only include MCR and calculation formats. Examples of the drag and drop and hotspot formats will be added in the future.

The correct answers for the following questions may be found on pages 13-19.

To learn more about these alternative question formats, please go to the NBCRNA website (<http://www.nbcrna.com>). Follow the link to **Certification Resources** and click on the Alternative Question Format FAQs and Tutorial.

Multiple Correct Response (MCR) Sample Questions (no partial credit)

1. What are the hemodynamic goals of hypertrophic cardiomyopathy? (**Select two**)
 - A. Decrease contractility
 - B. Decrease preload
 - C. Increase afterload
 - D. Increase heart rate

2. What are potential complications of pulmonary artery catheter insertion? (**Select two**)
 - A. Cardiac perforation
 - B. Left bundle branch block
 - C. Mitral valve rupture
 - D. Pulmonary infarction

3. Pharmacologic characteristics that best describe the effect of naloxone at opiate receptors include: (**Select two**)
 - A. affinity
 - B. efficacy
 - C. intrinsic activity
 - D. reversibility
 - E. stereo selectivity

4. Abnormal placental implantations beyond the endometrium include: (**Select three**)
 - A. abruptio placentae
 - B. placenta accreta
 - C. placenta increta
 - D. placenta percreta
 - E. placenta previa

5. Characteristics of Eaton-Lambert Syndrome include: (**Select three**)
 - A. positive response to anticholinesterase agents
 - B. improved strength with activity
 - C. reduced acetylcholine release
 - D. destruction of acetylcholine receptors
 - E. postjunctional defect
 - F. sensitivity to all muscle relaxants

6. Which conditions will result in elevated T4 levels? (**Select two**)
 - A. Hyperthyroidism
 - B. Primary hypothyroidism
 - C. Secondary hypothyroidism
 - D. Pregnancy

7. A Mallampati Class II airway assessment involves visualization of which pharyngeal structures? **(Select three)**

- A. Upper incisors
- B. Soft palate
- C. Tonsillar pillars
- D. Tonsillar fauces
- E. Uvula
- F. Epiglottis

8. The musculocutaneous nerve arises from which nerve roots? **(Select three)**

- A. C5
- B. C6
- C. C7
- D. C8
- E. T1
- F. T2

9. Successful laryngoscopy for intubation requires alignment of which 3 axes? **(Select three)**

- A. Nasal
- B. Oral
- C. Tracheal
- D. Laryngeal
- E. Glottic
- F. Pharyngeal

10. Which of the following pulmonary function test (PFT) results indicate restrictive pulmonary disease? **(Select three)**

- A. Decreased forced vital capacity (FVC)
- B. Decreased FEV1/FVC ratio
- C. Decreased FEF 25-75%
- D. Decreased total lung capacity (TLC)
- E. Decreased functional residual capacity (FRC)
- F. Increased FEV1

11. Pharmacological management of thyroid storm may include: **(Select three)**

- A. sodium thiosulfate
- B. sodium iodide
- C. levothyroxine
- D. hydrocortisone
- E. methylene blue
- F. propranolol

Calculation Sample Questions

NOTE:

When responding to the calculation questions, enter the number only in the format requested. Do NOT enter units or labels (e.g., liters, L, mmHg), or the response will be marked wrong.

1. *What is the body mass index for a 70 kg patient who is 1.6 meters tall?*

Enter your answer below as a whole number (no decimals and no units).

2. *Calculate cardiac output given the following hemodynamic parameters:
Stroke volume: 60 ml/beat; Blood pressure: 150/70 mmHg; Heart rate: 50 per min*

Enter your answer below as a whole number (no decimals) in L/min.

L/min

3. *Use of positive pressure greater than how many cmH₂O with an LMA may cause stomach inflation?*

Enter your answer below as a whole number (no decimals) in cmH₂O.

cmH₂O

4. *In the lateral position, blood flow to the dependent lung of the anesthetized patient most represents which zone of flow?*

Enter your answer below as a whole number (no decimals).

Zone

5. What is the hourly maintenance fluid rate for an 11 pound infant?

Enter your answer below as a whole number (no decimals) in mL/hour.

mL/hour

6. What is the hourly maintenance fluid requirement for an 80-kg male?

Enter your answer below as a whole number (no decimals) in mL/hour.

mL/hour

7. On the 12-lead electrocardiogram, what is the upper limit of the normal R wave axis?

Enter your answer below as a whole number (no decimals) in degrees (°).

Degrees

8. A patient's blood pressure is 140/70. What is the mean arterial pressure?

Enter your answer below as a whole number (no decimals) in mm Hg.

mmHg

9. A patient is 72 inches tall and weighs 200 pounds. Calculate this patient's body mass index (BMI).

Enter your answer below as a whole number (no decimals and no units.)

10. What is the cerebral perfusion pressure for a patient with a blood pressure of 130/70 and intracranial pressure (ICP) of 18?

Enter your answer below as a whole number (no decimals) in mm Hg.

mm Hg

Drag and Drop, Matching/Ordering Sample Questions (no partial credit)

1.

Match the intrinsic muscle of the larynx with its action on the vocal cords.

<u>Action on vocal cords</u>		<u>Muscle</u>
Place answer here	Elongates	Posterior cricoarytenoid
Place answer here	Adducts	Lateral cricoarytenoid
Place answer here	Relaxes	Cricothyroid
Place answer here	Abducts	Thyroarytenoid

2.

Match each blood gas partition coefficient with its corresponding inhalation agent.

<u>Inhalation agent</u>	<u>Blood gas partition coefficient</u>
Place answer here	Isoflurane
Place answer here	Desflurane
Place answer here	Sevoflurane
Place answer here	Halothane
	2.5
	1.46
	0.42
	0.65

3. Match the appropriate laboratory test to the each coagulation-related event.

<u>Event</u>		<u>Laboratory test</u>
Place answer here	Non-steroidal anti-inflammatory use	Partial thromboplastin time
Place answer here	Coumadin administration	Bleeding time
Place answer here	Heparin infusion	D-dimer
Place answer here	Active fibrinolysis	Prothrombin time

4. Match each medication used in aspiration prophylaxis with its classification.

<u>Medication</u>	<u>Classification</u>	
Place answer here	Bicitra	Nonparticulate antacid
Place answer here	Metoclopramide	Gastric prokinetic
Place answer here	Omeprazole	Histamine-2 antagonist
Place answer here	Ranitidine	Proton pump inhibitor

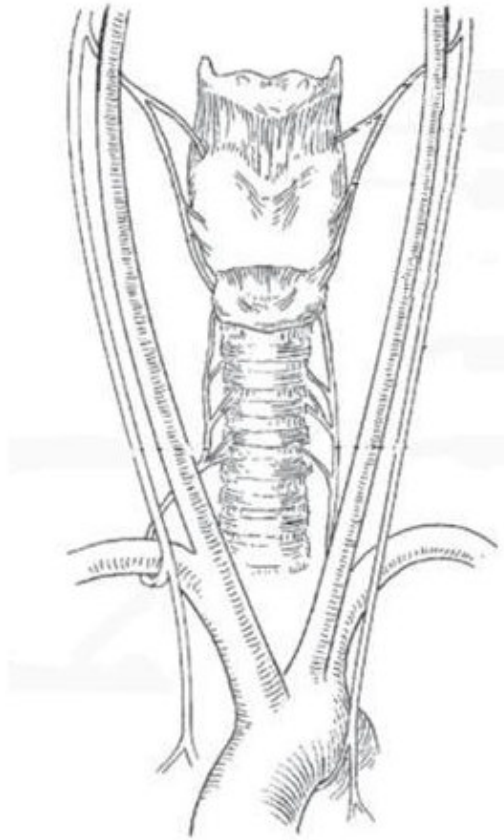
5.

Match the twitch response with its corresponding nerve origin.

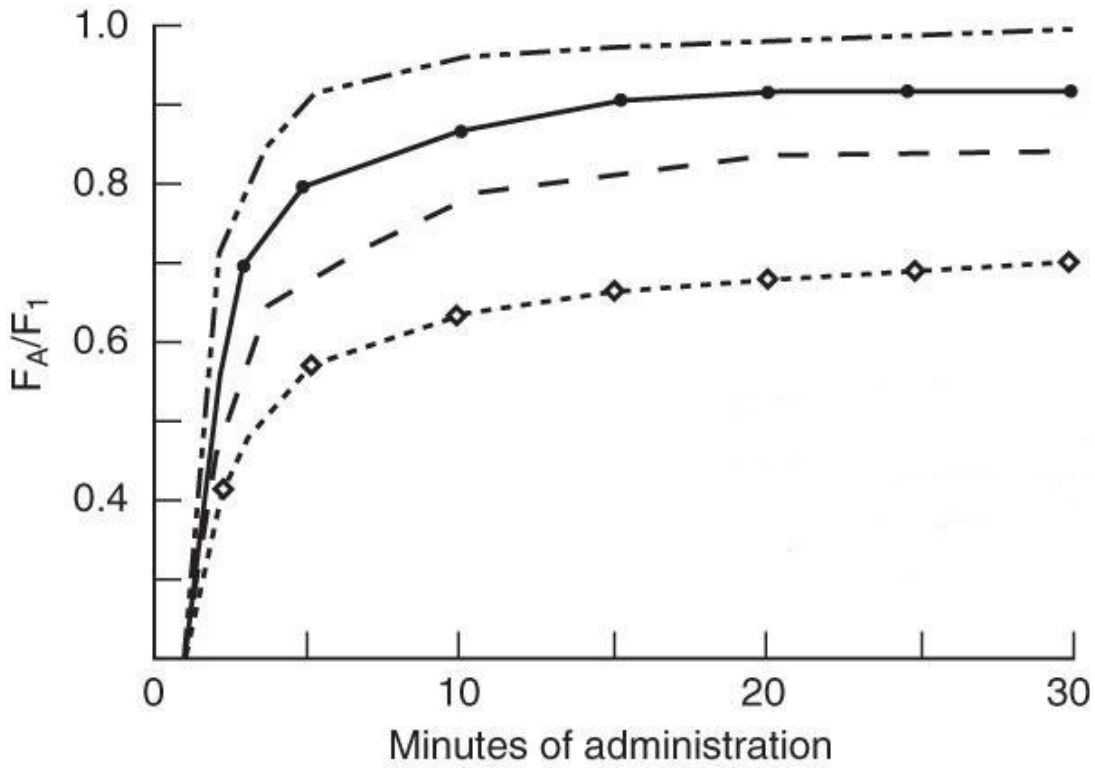
<u>Nerve origin</u>		<u>Twitch</u>
Place answer here	Femoral	Adductor twitch
Place answer here	Obturator	Quadriceps twitch
Place answer here	Tibial nerve	Dorsiflexion
Place answer here	Peroneal nerve	Plantar flexion

Hotspot Sample Questions

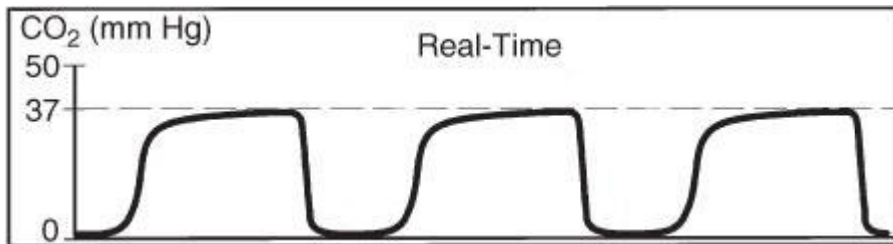
1. In the figure below, click on the nerve that may be compressed during mediastinoscopy.



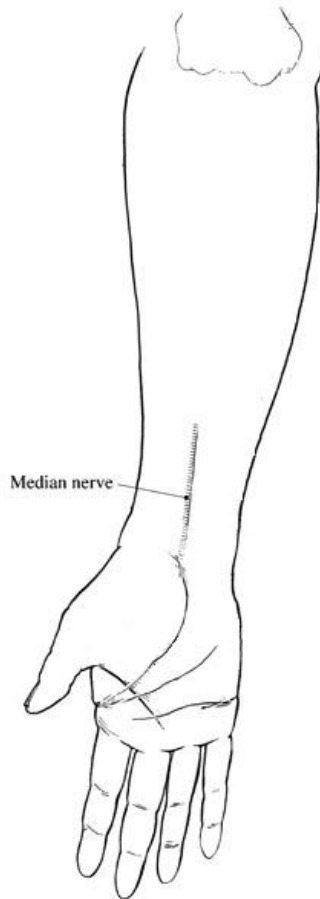
2. The graph below depicts F_A/F_1 of isoflurane, sevoflurane, desflurane, and nitrous oxide. Click on the line that is characteristic of desflurane.



3. Below is a normal capnogram. Click on the portion of the graph where rebreathing would be seen, if it were present.



4. In the figure below, click on the area of the arm where peripheral nerve stimulator electrodes should be placed to demonstrate thumb twitch via the adductor pollicis muscle.\



5. In the lead II electrocardiogram tracing below, click on the area which would indicate that the patient has had a myocardial infarction in the past.



Correct Answers

Multiple Correct Response (MCR) Sample Questions

- | | | | | | |
|----|---------|----|---------|-----|---------|
| 1. | A, C | 5. | B, C, F | 9. | B, D, F |
| 2. | A, D | 6. | A, D | 10. | A, D, E |
| 3. | A, D | 7. | B, D, E | 11. | B, D, F |
| 4. | B, C, D | 8. | A, B, C | | |

Calculation Sample Questions

- | | | | | | |
|----|----|----|-----|-----|----|
| 1. | 27 | 5. | 20 | 9. | 27 |
| 2. | 3 | 6. | 120 | 10. | 72 |
| 3. | 20 | 7. | 90 | | |
| 4. | 3 | 8. | 93 | | |

Drag and Drop Sample Questions (next page)

Drag and Drop Sample Questions

1. Match the intrinsic muscle of the larynx with its action on the vocal cords.

<u>Action on vocal cords</u>	<u>Muscle</u>
Cricothyroid	Elongates
Lateral cricoarytenoid	Adducts
Thyroarytenoid	Relaxes
Posterior cricoarytenoid	Abducts

2. Match each blood gas partition coefficient with its corresponding inhalation agent.

<u>Inhalation agent</u>	<u>Blood gas partition coefficient</u>
1.46	Isoflurane
0.42	Desflurane
0.65	Sevoflurane
2.5	Halothane

3. Match the appropriate laboratory test to the each coagulation-related event.

<u>Event</u>		<u>Laboratory test</u>
Bleeding time	Non-steroidal anti-inflammatory use	
Prothrombin time	Coumadin administration	
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<input type="button" value="Reset"/>		

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<u>Medication</u>		<u>Classification</u>
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Gastric prokinetic	Metoclopramide	
Proton pump inhibitor	Omeprazole	
Histamine-2 antagonist	Ranitidine	

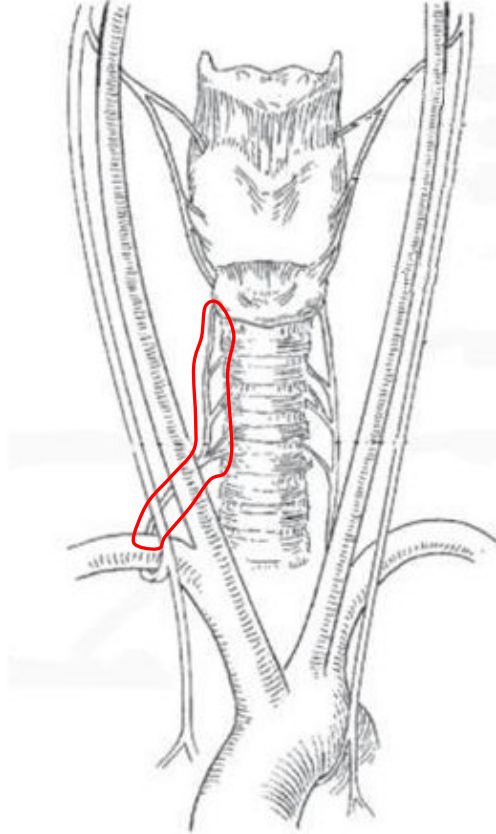
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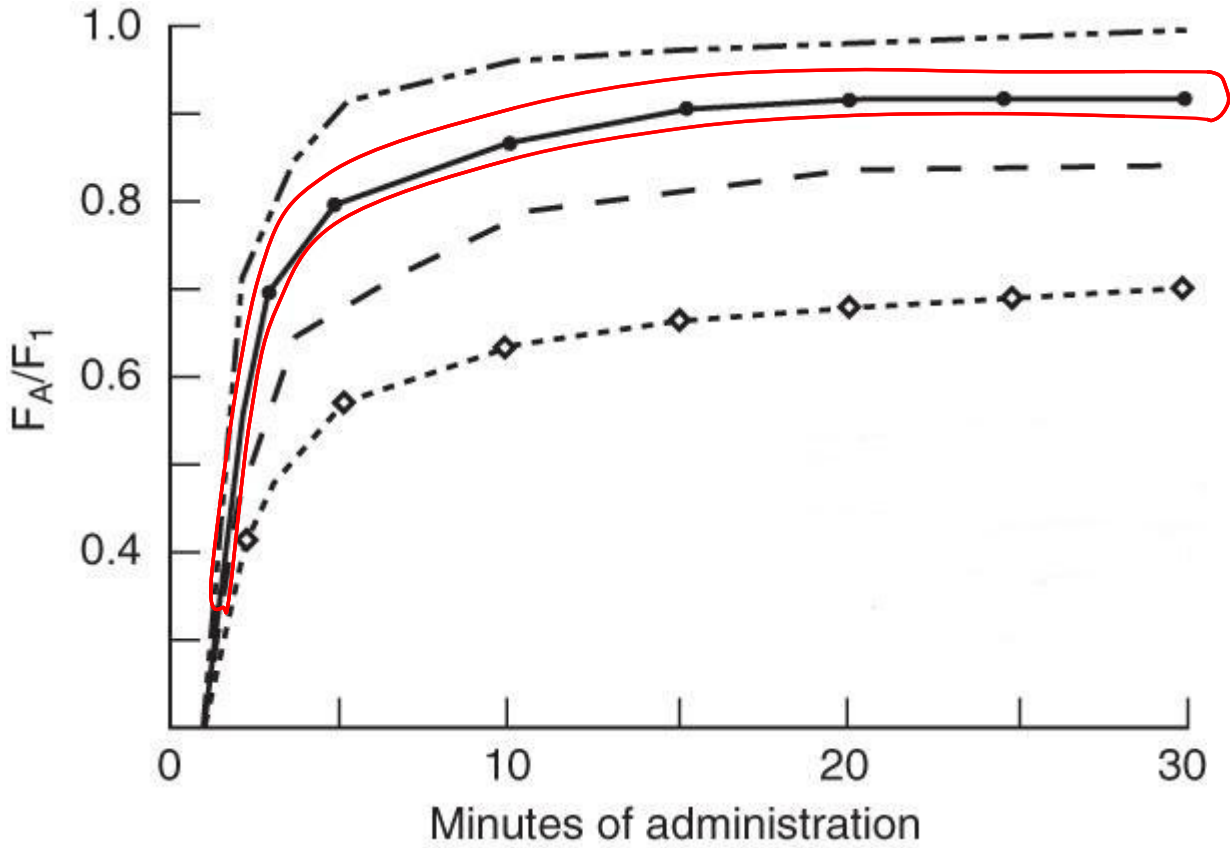
<u>Nerve origin</u>		<u>Twitch</u>
Quadriceps twitch	Femoral	
Adductor twitch	Obturator	
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Dorsiflexion	Peroneal nerve	

Hotspot Sample Questions

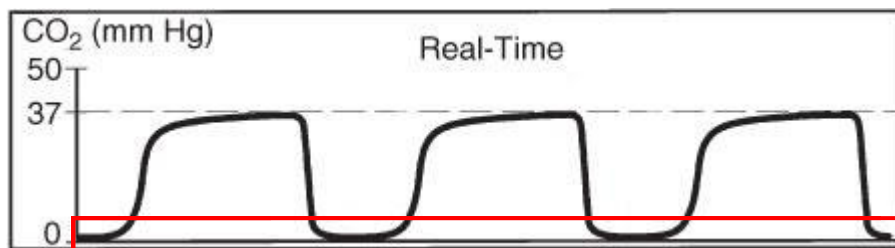
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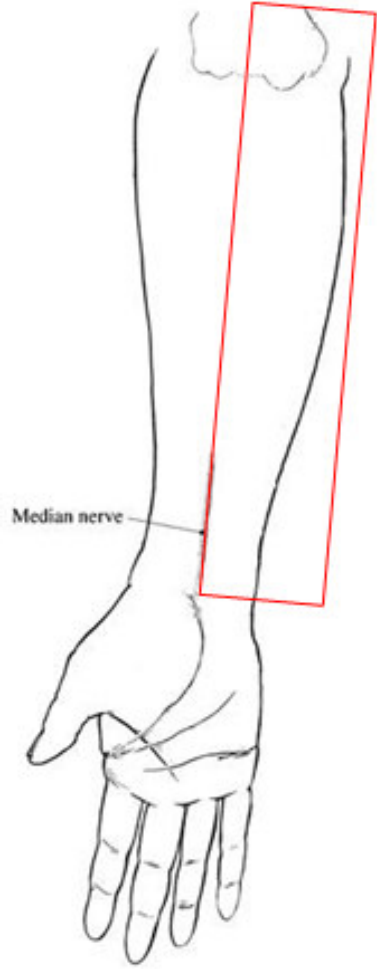
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