

Pain Medicine Examination
Sample Questions
January 2010

The following 45 questions are samples of questions that have appeared on previous Pain Medicine examinations. The distribution of content areas of these sample questions is not representative of the actual exam. Answers are provided at the end of this document.

1. A 55-year-old man has severe pain on gentle touching of the arm. Six months ago, the median nerve was damaged during creation of an arteriovenous fistula for dialysis. Which of the following terms best describes this phenomenon?
 - (A) Allodynia
 - (B) Hyperalgesia
 - (C) Hyperpathia
 - (D) Hypersensitivity
 - (E) Hypesthesia

2. Which of the following receptors mediates the windup phenomenon?
 - (A) 5-HT_{1D}
 - (B) Mu-opioid
 - (C) Nicotinic
 - (D) *N*-methyl-D-aspartic acid (NMDA)
 - (E) Vanilloid

3. An 8-year-old girl is scheduled for a caudal injection for treatment of pain after a ureteral reimplantation. Which of the following ligaments will be traversed by the needle immediately prior to entering the caudal canal?
 - (A) Interspinous
 - (B) Multifidus
 - (C) Sacroanal
 - (D) Sacrococcygeal
 - (E) Sacrospinous

4. A 25-year-old janitor has severe back pain and is unable to stand up straight after he fell at work. On physical examination, he has positive pain behavior but no neurologic deficits. A surveillance video from the insurance company shows he continues to play baseball with friends. Which of the following is the most likely diagnosis?
 - (A) Conversion disorder
 - (B) Factitious disorder
 - (C) Hypochondriasis
 - (D) Malingering
 - (E) Somatization disorder with psychological factors

5. Which of the following conditions is most likely to result from prolonged use of high doses of meperidine to treat pain in a patient with renal failure?
- (A) Hyperthermia
 - (B) Peripheral neuropathy
 - (C) Progressive pruritus
 - (D) Seizures
 - (E) Tolerance to constipation
6. Compared with an epidural dose of morphine, a single epidural dose of fentanyl produces which of the following?
- (A) Higher incidence of respiratory depression
 - (B) Less segmental spread of analgesia
 - (C) Longer duration of action
 - (D) More intense pruritus
 - (E) Slower onset of analgesia
7. A 70-kg, 60-year-old man with hypertension and chronic renal failure is unresponsive and apneic. Two days ago, he began administration of patient-controlled analgesia (PCA) with morphine at a continuous rate of 1 mg/hr with a dose of 2 mg and a lockout interval of 10 minutes. The dose of morphine totaled 60 mg over 48 hours. Which of the following is the most likely cause of the patient's condition?
- (A) Accumulation of morphine-6-glucuronide
 - (B) Accumulation of unmetabolized morphine
 - (C) Brainstem ischemia caused by hypotension
 - (D) Mechanical failure of the PCA device
 - (E) Progressive uremia
8. A 38-year-old woman with breast cancer is switched from oral morphine 90 mg every eight hours to morphine 1 mg daily via percutaneous intrathecal catheter because of excessive sedation. Thirty-six hours later, she has confusion, diaphoresis, and tachycardia. Which of the following is the most likely cause of her symptoms?
- (A) Increased intracranial pressure
 - (B) Meningitis
 - (C) Metabolic abnormalities
 - (D) Opioid withdrawal
 - (E) Sepsis
9. A 47-year-old man requires analgesia in the ICU after sustaining fractures of both femurs in a motor vehicle collision. He has developed hepatorenal syndrome. Which of the following drugs is most appropriate for pain control?
- (A) Buprenorphine
 - (B) Codeine
 - (C) Fentanyl
 - (D) Meperidine
 - (E) Morphine

10. A 70-year-old man with early Parkinson's disease is being treated with intravenous patient-controlled analgesia (PCA) with morphine following total knee arthroplasty. His pain is well controlled, but he has nausea. Which of the following is the most appropriate antiemetic for this patient?
- (A) Droperidol
 - (B) Metoclopramide
 - (C) Ondansetron
 - (D) Prochlorperazine
 - (E) Promethazine
11. A 32-year-old woman is referred to a pain clinic to receive analgesic therapy for chronic, intractable low back pain. She has a 15-year history of major depressive disorder, in remission, for which she receives phenelzine. Which of the following medications is most likely to cause serotonin syndrome in this patient?
- (A) Gabapentin
 - (B) Lidocaine
 - (C) Morphine
 - (D) Naproxen
 - (E) Tramadol
12. A 40-year-old patient has difficulty falling asleep at night due to chronic myofascial pain. Which of the following is most appropriate for the treatment of this patient?
- (A) Amitriptyline (Elavil)
 - (B) Combination of butalbital, caffeine, aspirin (Fiorinal)
 - (C) Combination of oxycodone and acetaminophen (Percocet)
 - (D) Fluoxetine (Prozac)
 - (E) Triazolam (Halcion)
13. A 76-year-old woman has intense paroxysms of unilateral electric-shocklike pain in the face that is usually triggered by brushing her teeth or washing her face. Which of the following is the best initial management?
- (A) Administration of baclofen
 - (B) Administration of carbamazepine
 - (C) Microvascular decompression of the trigeminal nerve root
 - (D) Radiofrequency lesioning of the gasserian ganglion
 - (E) Trigeminal nerve block
14. A 35-year-old woman who has had fibromyalgia for the past 10 years is undergoing evaluation with a new physician. She has been taking alprazolam daily to decrease muscle tension, emotional distress, and anxiety, but her prescription ran out four days ago. She is anxious, irritable, and tremulous. Examination shows tachycardia and diaphoresis. Which of the following is the most appropriate pharmacotherapy for this patient?
- (A) Buspirone
 - (B) Diazepam
 - (C) Flumazenil
 - (D) Paroxetine
 - (E) Propranolol

15. A 62-year-old woman with chronic pain is referred to a pain specialist for consultation. The patient has been taking an undetermined amount of oxycodone for the past four months and the referring physician is concerned that the patient is addicted to pain medications. When the pain specialist goes to see the patient in the hospital room, her adult son is in the room. Which of the following is the most appropriate action by the physician in terms of conducting a patient interview?
- (A) Ask the patient whether she would like the son to stay during the interview
 - (B) Ask the son to leave the room and proceed with the interview
 - (C) Return later when the patient is alone
 - (D) Tell the son that he can stay in the room as long as he does not interfere with the interview
16. The ilioinguinal nerve lies
- (A) adjacent to the anterosuperior iliac spine
 - (B) inferior to the inguinal ligament
 - (C) medial to the femoral artery
 - (D) superficial to the external oblique muscle
 - (E) within the inguinal ring
17. A 29-year-old man has had low back pain since falling from a ladder at work and sustaining a coccygeal fracture four months ago. His pain is constant and most severe with sitting. The pain is most likely to be blocked by local anesthetic injection at which of the following sites?
- (A) Anococcygeal ligament
 - (B) Ganglion impar
 - (C) Pudendal nerves
 - (D) S4-5 nerve root
 - (E) Superior hypogastric plexus
18. A 27-year-old woman comes to the pain clinic because of pain in the shoulder and suprascapular region one month after undergoing modified radical neck dissection for papillary carcinoma of the thyroid. Examination shows decreased sensation to light touch over the superior aspect of the right trapezius and scapular winging with resisted shoulder abduction. Which of the following nerves was most likely transected during the procedure?
- (A) Axillary
 - (B) Dorsal scapular
 - (C) Long thoracic
 - (D) Spinal accessory
 - (E) Thoracodorsal
19. A patient has palpitations, flushing, and headache after undergoing gingival injection of a local anesthetic. Which of the following is the most likely cause of this reaction?
- (A) Epinephrine in the local anesthetic
 - (B) Local anesthetic allergy
 - (C) Methylparaben reaction
 - (D) Para-aminobenzoic acid allergy
 - (E) Vasovagal reaction

20. A 31-year-old man undergoes a right thoracotomy and bleb resection with combined general and thoracic epidural (T4-5) catheter anesthesia. Following the procedure, pain is controlled with an infusion of 0.1% bupivacaine and fentanyl 5 µg/mL at 6 mL/hr via the epidural catheter. Twenty hours later, the patient has severe pain at the incision site. Blood pressure is 170/100 mmHg and heart rate is 97 bpm. The most appropriate management at this time is to
- (A) administer a bolus of 1.5% lidocaine 4 mL through the epidural catheter
 - (B) administer 15 mg of ketorolac intravenously every six hours
 - (C) begin intravenous patient-controlled analgesia with morphine
 - (D) increase the concentration of bupivacaine to 0.2%
 - (E) increase the epidural infusion rate of the bupivacaine-fentanyl solution to 8 mL/hr
21. A lumbar sympathetic block is appropriate treatment for each of the following conditions of the lower extremity EXCEPT
- (A) Buerger's disease
 - (B) complex regional pain syndrome type I
 - (C) frostbite
 - (D) meralgia paresthetica
 - (E) phantom limb pain
22. A 42-year-old man has excellent relief of pain five days after undergoing a lumbar epidural injection of methylprednisolone 80 mg diluted to a volume of 10 mL with normal saline. Which of the following is the most common adverse effect of this treatment?
- (A) Arachnoiditis
 - (B) Chemical meningitis
 - (C) Headache
 - (D) Hyperglycemia
23. A 44-year-old woman has right hip pain that is reproduced by right leg abduction, external rotation, and palpation of the greater trochanter. Flexion and extension of the hip are not painful. The most appropriate interventional therapy for this patient is injection at which of the following sites?
- (A) Hip joint
 - (B) Ischial bursa
 - (C) Piriformis muscle
 - (D) Trochanteric bursa
24. A 30-year-old woman experiences painless shortness of breath 30 minutes after undergoing a stellate ganglion block with 10 mL of 2% lidocaine for treatment of complex regional pain syndrome type I involving the right arm. She had sustained a fracture of the right forearm five months ago. Which of the following is the most likely cause of this symptom?
- (A) Anaphylactic reaction to lidocaine
 - (B) Hematoma
 - (C) Neurogenic pulmonary edema
 - (D) Phrenic nerve block
 - (E) Recurrent laryngeal nerve block

25. Blockade of the superficial cervical plexus is performed at which location?
- (A) At the midposterior border of the sternocleidomastoid muscle
 - (B) In the interscalene groove
 - (C) Over Chassaignac tubercle
 - (D) Over the mastoid process
 - (E) Over the transverse process of C2
26. One percent plain lidocaine 30 mL injected at which of the following sites results in the highest level of systemic absorption?
- (A) Brachial plexus
 - (B) Caudal
 - (C) Epidural
 - (D) Intercostal
 - (E) Subcutaneous
27. During stellate ganglion block, a patient becomes restless, tachypneic, and disoriented immediately after receiving the test dose of local anesthetic. Which of the following is the most likely cause of these symptoms?
- (A) Intravenous injection
 - (B) Phrenic nerve paralysis
 - (C) Pneumothorax
 - (D) Subarachnoid block
 - (E) Vertebral artery injection
28. When using C-arm fluoroscopy to perform a therapeutic procedure, which of the following is the most effective method of preventing unnecessary radiation exposure to the patient?
- (A) Decreasing the tube distance to the patient
 - (B) Increasing patient-to-image intensifier distance
 - (C) Shielding the patient with a lead coverup
 - (D) Using strict collimation of the beam
 - (E) Using the shortest beam-on time possible
29. Which of the following is the most likely adverse effect of neurolytic celiac plexus block using 30 mL of 10% phenol in glycerin?
- (A) Decreased gastrointestinal motility
 - (B) Leg weakness
 - (C) Orthostatic hypotension
 - (D) Seizure
 - (E) Urinary retention

30. A 56-year-old man who has pancreatic carcinoma and midepigastic abdominal pain is referred for celiac plexus block. The needles are placed, and their position is confirmed with CT scan. After injection of the first 2 mL of a 0.25% bupivacaine solution containing 1:200,000 epinephrine, the patient's heart rate transiently increases from 68 bpm to 120 bpm. Which of the following is the most appropriate next step?
- (A) Administer midazolam 1 mg intravenously
 - (B) Continue injection of 0.25% bupivacaine with 1:200,000 epinephrine in 3- to 5-mL increments
 - (C) Remove the needles and cancel the procedure
 - (D) Reposition the needles and repeat the injection of 2 mL of 0.25% bupivacaine with 1:200,000 epinephrine
 - (E) Wait until the heart rate returns to baseline before continuing the injection of 0.25% bupivacaine without epinephrine



31. A 47-year-old woman has had low back pain for the past six weeks that has not responded to treatment with rest, oral analgesics, and physical therapy. MRI of the lumbosacral spine is shown. The image shown reveals which of the following?
- (A) Central herniated disk, L4-L5, without compromise of the neural foramina
 - (B) Central herniated disk, L5-S1, without compromise of the neural foramina
 - (C) Left-sided herniated disk, L4-L5, with compromise of the neural foramen
 - (D) Left-sided herniated disk, L5-S1, with compromise of the neural foramen
 - (E) Normal findings
32. A 60-year-old woman with a chronic S1 radiculopathy has mild bilateral weakness of leg flexion, plantar and dorsiflexion at the ankle, and toe extension. An MRI four months ago showed a small paracentral herniated disk at the L4-5 level. Which of the following is the most appropriate first step in management?
- (A) Bilateral selective nerve root injection at the S1 neural foramina
 - (B) Epidural corticosteroid injection at the L5-S1 level
 - (C) Repeat MRI
 - (D) Trial of back extension exercises
 - (E) Trial spinal cord stimulation



33. A 35-year-old man is referred for evaluation of a six-month history of increasingly severe low back pain that began insidiously without any identifiable trauma. The pain is deep and aching over the low back. He has no pain in his extremities. A discrete lesion is shown on the accompanying MRI within the inferior endplate of the L4 vertebral body. Which of the following is the most appropriate next step?
- (A) Obtain a bone scan of the lumbosacral spine
 - (B) Obtain a complete blood count
 - (C) Obtain a CT scan of the lumbosacral spine
 - (D) Obtain an MRI of the lumbosacral spine with gadolinium contrast enhancement
 - (E) Proceed with initial treatment without further diagnostic evaluation
34. Which of the following is associated with pain arising from the sacroiliac joint?
- (A) Paresthesia of the lateral thigh
 - (B) Positive Patrick's (FABER) test
 - (C) Sexual dysfunction
 - (D) Weakness of plantar flexion of the great toe

35. A 14-year-old girl has intermittent bitemporal and occipital headaches that are worse when she is at school. She has undergone counseling at school for depression and anxiety. Which of the following is the most likely diagnosis?
- (A) Cluster headache
 - (B) Malingering
 - (C) Migraine headache
 - (D) Temporal arteritis
 - (E) Tension-type headache
36. A 60-year-old woman comes to the pain clinic because of a two-month history of fever as well as severe, persistent pain over the left side of the jaw and over the left ear. She also has loss of appetite with associated fatigue. Physical examination shows tenderness over the area above her left ear with mild swelling. Erythrocyte sedimentation rate is greater than 48 mm/hr. Which of the following is the most likely diagnosis?
- (A) Atypical complex regional pain syndrome
 - (B) Postherpetic neuralgia
 - (C) Temporal arteritis
 - (D) Temporomandibular joint dysfunction
 - (E) Trigeminal neuralgia
37. A 24-year-old woman has had severe unilateral headaches since menarche. The headaches are preceded by flashing spots before her eyes, are accompanied by nausea with occasional vomiting, and last six to eight hours. The patient reports that she was recently promoted at her job and that her mother and maternal aunt had similar headaches when they were younger. She has been taking oral contraceptives. Although she appears anxious, physical examination is normal. Appropriate management for this patient should include each of the following EXCEPT
- (A) administration of acetaminophen with codeine
 - (B) administration of sumatriptan
 - (C) avoidance of caffeine-containing beverages
 - (D) change of her oral contraceptive
 - (E) maintenance of a strict sleeping schedule
38. A 38-year-old man has had a persistent headache in the frontal and occipital areas bilaterally since undergoing diagnostic lumbar puncture one week ago. The pain is worse when he sits or stands and is relieved when he lies down. The patient is HIV positive and has candidal and cytomegaloviral infections. His CD4+ lymphocyte count is 150/mm³. Which of the following is the most appropriate management of his headache?
- (A) Caudal blood patch with donor blood
 - (B) Caudal blood patch with the patient's blood
 - (C) Lumbar blood patch with donor blood
 - (D) Lumbar blood patch with the patient's blood
 - (E) Lumbar saline infusion

39. A 25-year-old man has pain and paresthesias in the thigh two weeks after being involved in a head-on motor vehicle accident. Current examination shows decreased sensation in the thigh; there is no loss of muscle strength. Which of the following nerves is most likely injured?
- (A) Genitofemoral
 - (B) Ilioinguinal
 - (C) Lateral femoral cutaneous
 - (D) Obturator
 - (E) Saphenous
40. A 28-year-old man has had constant pain in a bandlike pattern at the waistline since sustaining an incomplete transection of the spinal cord at T12 five months ago. Which of the following is the most likely explanation?
- (A) Central neuropathic
 - (B) Mechanical instability
 - (C) Primary myofascial pain
 - (D) Psychosomatic pain
 - (E) Referred visceral pain
41. Which of the following regions is most commonly affected in patients who have acute herpes zoster infection?
- (A) Cervical
 - (B) Lumbar
 - (C) Sacral
 - (D) Thoracic
 - (E) Trigeminal
42. A 35-year-old man who has a 10-year history of HIV infection and intravenous drug use has recent onset of burning pain and dysesthesias in both feet. Nerve conduction studies show a primary sensory symmetric peripheral neuropathy. Administration of which of the following medications is the most appropriate initial step in management?
- (A) Dexamethasone
 - (B) Etanercept
 - (C) Methadone
 - (D) Pregabalin
 - (E) Tramadol
43. A 43-year-old woman is being treated for painful neuropathy in both feet. She is HIV positive, which was caused by a blood transfusion two years ago. Her disease indices are stable, and she is taking appropriate antiviral agents. Acetaminophen/codeine preparations initially helped relieve her symptoms so she could continue to work as a security guard. Which of the following is the most appropriate management of the foot pain?
- (A) Discontinue codeine
 - (B) Initiate antiepileptic therapy
 - (C) Perform serial lumbar sympathetic nerve blocks
 - (D) Perform transcutaneous electrical nerve stimulation
 - (E) Prescribe orthotics

44. A 65-year-old man has had aching in the legs and burning and tingling in the upper and lower extremities for the past two weeks. He has been taking isoniazid for four months for treatment of latent tuberculosis. Which of the following agents is most appropriate for initial treatment of this patient's symptoms?
- (A) Amitriptyline
 - (B) Clonidine
 - (C) Gabapentin
 - (D) Pyridoxine (vitamin B₆)
 - (E) Thiamine
45. A 55-year-old woman comes to the pain clinic for a follow-up examination two months after sustaining a fracture of the left wrist. Initial treatment consisted of cast immobilization for six weeks. Since removal of the cast, there has been swelling, sensitivity to touch, erythema, and burning pain. Physical therapy exacerbates the symptoms. A trial of nortriptyline therapy has provided no relief of the pain. Which of the following is the most appropriate next step in management?
- (A) Initiate massage therapy
 - (B) Initiate opioid therapy
 - (C) Perform peripheral nerve block
 - (D) Perform stellate ganglion block
 - (E) No further management is necessary

ANSWERS

1	A	16	A	31	C
2	D	17	D	32	C
3	D	18	C	33	E
4	D	19	A	34	B
5	D	20	A	35	E
6	B	21	D	36	C
7	A	22	D	37	A
8	D	23	D	38	D
9	C	24	D	39	C
10	C	25	A	40	A
11	E	26	D	41	D
12	A	27	E	42	D
13	B	28	E	43	B
14	B	29	C	44	D
15	A	30	D	45	D