



MARYLAND STATE BOARD OF CHIROPRACTIC EXAMINERS
4201 Patterson Avenue, Suite 301
Baltimore, MD 21215

CHIROPRACTIC ASSISTANT (CA) BOARD EXAMINATION

Includes these statements on the first screen of each examination.

You may not receive any assistance from other individuals in taking this exam, and you may not allow other individuals to see the computer screen that presents the exam questions.

Pursuant to Md. Code Ann. Health Occ §3-313(1), the Board may not only deny the application of an Applicant, but also may take disciplinary action against a licensee that obtained a license or registration through cheating. Those actions may include revocation of said licensure.

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CHIROPRACTIC ASSISTANT BOARD EXAMINATION

PART 1 JURISPRUDENCE EXAM

30 QUESTIONS:

1. **Chiropractic Assistants (CAs) may perform massage therapy on a patient:**
 - a. never
 - b. only if they are also licensed as a Licensed Massage Therapist
 - c. only if directed by the Supervising Chiropractor
 - d. none of the above

2. **A CA may sign patient treatment records on behalf of a chiropractor when directed to do so by the doctor.**
 - a. True
 - b. False

3. **A supervising chiropractor must be present in the clinic at all times and be immediately available in the treatment area when a Chiropractic Assistant Trainee is working with patients.**
 - a. True
 - b. False

4. **If the supervising chiropractor has not yet arrived and a patient is scheduled for treatment, the Chiropractic Assistant Trainee should:**
 - a. start the scheduled treatment
 - b. do nothing until the Supervising Chiropractor arrives
 - c. only conduct treatment using hot or cold packs
 - d. a and c

5. **A CA may assist in low level laser therapy:**
 - a. never
 - b. when the laser is a non-ablative/non-cutting/non-burning device
 - c. when the supervising chiropractor is providing direct supervision
 - d. b and c

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6. **Your supervising chiropractor has just directed you to perform a task that is clearly in violation of the Board regulations; you should:**
 - a. perform the task as directed
 - b. perform the task as directed if refusal will cause you to be fired
 - c. Refuse and advise the doctor that you cannot perform the task under law and regulations & report it to the board if the doctor persists in ordering you to do it.
 - d. none of the above

7. **A CA applicant must be at least 18 years old and a high school graduate.**
 - a. True
 - b. False

8. **To qualify as a registered CA, you must complete a total of _____ hours of in-service, on the job training of which the first _____ hours must be spent observing procedures.**
 - a. 100 & 50
 - b. 200 & 60
 - c. 650 & 70
 - d. 520 & 20

9. **CAs must renew their registrations every _____ years.**
 - a. 5
 - b. 2
 - c. 3
 - d. 10

10. **CAs must have at least _____ hours of Continuing Education to qualify for renewing their registrations.**
 - a. 5
 - b. 10
 - c. 15
 - d. 20

11. **CAs may take which of the following continuing education courses?**



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- a. only courses approved by the Board of Chiropractic Examiners
- b. only courses approved by a chiropractic college
- c. only courses approved by the MD chiropractic association
- d. only courses approved by a former instructor

12. A CA may take the height and weight of a patient without the direct supervision of a supervising chiropractor.

- a. True
- b. False

13. Demonstrating exercise to patients requires _____ of a supervising chiropractor:

- a. direct supervision
- b. indirect supervision
- c. no supervision
- d. moderate supervision

14. Hot and cold packs may only be applied under direct supervision

- a. True
- b. False

15. A CA license must be:

- a. encased in clear plastic
- b. copied and the copy posted on the wall where the CA practices
- c. conspicuously posted on the wall where the CA practices
- d. framed in black plastic or wood

16. A person may practice as a CA without a Board issued registration:

- a. never
- b. only if the person holds another license as a nurse or therapist
- c. only if directed by a supervising chiropractor
- d. only if a waiver fee has been paid to the Board of Examiners

17. A CA may diagnose patient symptoms:

- a. when directed to do so by the doctor



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- b. after 5 years in practice as a CA
 - c. never
 - d. only on Thursdays
- 18. A CA must maintain a current mailing address or be subject to a _____.**
- a. \$1500 penalty
 - b. \$200 penalty
 - c. automatic suspension of registration
 - d. immediate arrest and imprisonment
- 19. A CA applicant must take a total of _____ hours of jurisprudence with the CA training program prior to application for registration.**
- a. 10
 - b. 3
 - c. 6
 - d. 5
- 20. A CA applicant must successfully complete all classroom hours and in-service training within _____ of the CA Program and application.**
- a. 2 months
 - b. 4 months
 - c. 1 year
 - d. 2 years
- 21. By regulation, the CPR level required for CAs is:**
- a. novice level
 - b. healthcare provider level
 - c. intermediate level
 - d. none of the above – CPR is not required for CAs
- 22. You are a Registered Chiropractic Assistant. Your supervising chiropractor must leave the office for a home emergency. He tells you to**

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keep working with patients until he returns in 45 minutes. Under the regulations, the doctor:

- a. may not be gone for more than 30 minutes
- b. may leave the building and allow you to keep working on existing patients, as long as there are standing orders for care and a method of contacting the doctor
- c. may leave the building for as long as needed because an emergency occurred
- d. none of the above

23. Dr. Jones, your supervising chiropractor, must leave the office. Dr Smith, his partner, is also a supervising chiropractor. Dr. Jones wants you to keep working with patients. Under the regulations:

- a. Dr. Jones may leave the building for only 30 minutes
- b. Dr. Jones may not leave the building under any circumstances
- c. Dr. Jones may leave the building if he puts Dr. Smith in charge of you as the CA under his direction as the supervising chiropractor.
- d. none of the above

24. You are a registered chiropractic assistant. It is 9 a.m. and you are behind the front desk. Dr Jones, your supervising chiropractor calls in and tells you he will not be in until 10 a.m. If patients are scheduled for 9:15 a.m., you may do which of the following at Dr Jones's request?

- a. non-strenuous traction therapy
- b. setting up a patient on the table in preparation for an x-ray
- c. check the patients in at the front desk
- d. Both A & C

25. You are a registered chiropractic assistant. It is 9 a.m. and you are seated behind the front desk. Dr. Avery, your supervising chiropractor calls in late and won't be in until 10 a.m. Dr. Avery has left standing orders for all of his patients as part of their treatment plan. If patients start arriving, you may do which of the following at Dr. Avery's request:

- a. non-strenuous traction therapy
- b. low voltage electrical stimulation



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- c. taking routine patient information and height and weight
 - d. All of the above
- 26. Mrs. Johnson brings in her 15 year-old daughter for adjustment. You are told by her that she must leave the office for about 30 minutes to pick up her son at daycare. Your response should be:**
- a. O.K. – but be back in 30 minutes
 - b. Sorry – but a parent or guardian must be present during treatment
 - c. OK – provided you sign a release for treatment for your daughter
 - d. None of the above
- 27. Mr. Florence, comes in for treatment. He also brings his 15 year old son for his treatment. It is permissible to file all paperwork for both patients in Mr. Florence’s file instead of setting up a separate file for the minor son.**
- a. True
 - b. False
- 28. Maryland law requires that adult patient records must be kept:**
- a. 10 years
 - b. 5 years
 - c. 8 years
 - d. forever
- 29. Which of the following would be approved methods for destroying old patient records:**
- a. throwing them in the dumpster
 - b. shredding them in a mechanical shredder
 - c. tearing them in half and putting them in the trash
 - d. all of the above
- 30. You are taking telephone appointments. Ms. Davis calls for an appointment and advises you that she has active AIDS/HIV. You should:**
- a. advise her to seek medical attention
 - b. advise her that your practice cannot treat her

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- c. refer her to a practice that treats active AIDS patients
 - d. set the appointment and discreetly notify your doctor of the issue
- 31. You receive your CA Registration and develop a severe addiction to beer which affects your ability to practice. Which of the following should you do?**
- a. Voluntarily report the issue to your doctor and the board under its rehabilitation program
 - b. Try and reduce the volume of alcohol consumed
 - c. Report the matter to Alcoholics Anonymous
 - d. Nothing – it is impossible for beer drinkers to be alcoholics
- 32. If a patient has very limited ability to speak English, and you are taking their appointment for treatment, the best action is:**
- a. do not take them as a patient – it is impossible to treat them
 - b. patiently ask them if they have a friend or family member who might help translate for them
 - c. advise them to call a chiropractor who speaks their language
 - d. all of the above are good courses of action to take
- 33. You see a fellow CA smoking marijuana in his car during his lunch break. When he returns from lunch, he smells of marijuana, his eyes are glassy and he is giddy. Your best course of action is:**
- a. talk directly to the CA and advise him to stop smoking marijuana
 - b. give the CA a chance and ignore the situation
 - c. report the matter immediately to your supervising chiropractor and to the Board
 - d. do nothing until you have further evidence of marijuana use
- 34. You work with two other CAs, Jan and Joe. A patient arrives who speaks very poor English and is difficult to understand. After Joe escorts the patient to the treatment room, he starts joking about the patient's accent**

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- with Jan. You overhear their laughter and joking. Which of the following should you do.
- do nothing – the matter is outside the scope of CA practice
 - do nothing – it is a private joke and no harm is done to the patient
 - report it to the supervising chiropractor – it is unprofessional behavior
 - try and join in the joke – it will be best for office morale
- 35. You work as a CA for Dr. X. He is very friendly with you and often tells sex jokes. The jokes are funny but you feel a little uncomfortable with the jokes. Which of the following best describes the situation:**
- it is inappropriate behavior
 - it is unprofessional behavior
 - it is not inappropriate or unprofessional – it is only a joke and the Doctor has not engaged in any physical touching
 - a and b
- 36. There is no fee to take the CA Examination.**
- True
 - False
- 37. A Supervising Chiropractor receives a certificate from the board attesting to his/her supervising status.**
- True
 - False
- 38. To qualify for registration as a CA, the applicant must be at least:**
- 18 years old
 - 21 years old
 - 10 years old
 - none of the above
- 39. A CA applicant must complete a minimum of _____ hours of in-service training with a supervising chiropractor.**
- 400
 - 500

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- c. 520
 - d. 600
- 40. CAs are required to satisfactorily complete at least _____ hours of continuing education every_____.**
- a. 10, 2 years
 - b. 8, 1 year
 - c. 5, 2 years
 - d. none of the above
- 41. You are directed to give a patient a whirlpool treatment. Under the regulations, this may only be done under direct supervision of a supervising chiropractor.**
- a. True
 - b. False
- 42. You are directed to remove a leg brace from a patient. Under the regulations, this may only be done under direct supervision of a Supervising Chiropractor.**
- a. True
 - b. False
- 43. You are directed to help assist a patient in disrobing prior to physical therapy. Under the regulations, this may only be done under the direct supervision of a supervising chiropractor.**
- a. True
 - b. False
- 44. You are directed to conduct mild therapeutic massage to the lower back of a patient. Under the regulations, this may only be done if conducted under the direct supervision of a supervising chiropractor**
- a. True
 - b. False

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- 45. Dr. Y hires Betty as a CA. He tells Betty: “Don’t worry about training, experience or getting registered by the Board – just follow my orders and the board will never know.” If Betty is caught practicing without a registration, she may be:**
- subject to a \$5,000 fine
 - subject to up to a year in prison
 - a and b
 - none of the above
- 46. Under Board regulations, a person may NOT practice as a CA in Maryland unless registered by the board as a CA.**
- True
 - False
- 47. Dr. X hires Tom as a CA. There are 3 other CAs and 2 other Chiropractors working at the practice. All but Tom have their original license and registrations prominently displayed on the office wall. Tom has a photocopy of his registration on the wall. When asked about his original registration, Tom tells you to mind your own business. You should:**
- mind your own business
 - do nothing – a photocopy of the registration is fine
 - report the matter immediately to the supervising chiropractor
 - none of the above
- 48. CA, Amelia, has an idea. She advises Dr. Z, that the practice could make good profits by adjusting dogs and cats. What should Dr. Z’ response be?**
- “Good idea – there are substantial profits possible.”
 - “Bad idea – chiropractors and CAs may not work on non-humans.”
 - “Good idea – as long as we do not file insurance claims”
 - “Bad idea – there is no real profit in adjusting domestic animals.”
- 49. CA, Ben, helps patient, Freda, onto the x-ray table. Ben then gently positions Freda so that the Supervising Chiropractor can take an accurate x-ray of Freda’s lower back.**



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- a. Ben has acted properly within the scope of CA practice.
 - b. Ben has acted improperly outside the scope of CA practice.
- 50. CA, Sally, arrives at the office at 8:30 a.m. New patients start arriving at 9:00 a.m. Her supervising chiropractor calls and advises that she will be 1 hour late because of heavy traffic on the beltway. Which of the following is TRUE?**
- a. Sally may sign patients in
 - b. Sally may take basic vitals such as height and weight
 - c. a and/or b
 - d. none of the above
- 51. Taking height and weight of a patient can only be done under the direct supervision of the supervising chiropractor.**
- a. True
 - b. False
- 52. Patient gait practice and ambulation can only be done under the direct supervision of the supervising chiropractor.**
- a. True
 - b. False
- 53. Assisting in the dressing and undressing of patients can only be done under the direct supervision of the supervising chiropractor.**
- a. True
 - b. False
- 54. Demonstration of follow-up exercises may NEVER be conducted by a registered CA.**
- a. True
 - b. False
- 55. The Board investigator subpoenas your treatment notes and patient files for a specific patient. Under the Board's regulations, these patient notes and files ____ considered an official office record.**

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- a. are
 - b. are not
- 56. Patient billing records ____ have to be released to the board on request.**
- a. do
 - b. do not
- 57. The treatment records of a 3-year old minor patient must be kept by the office until the patient is at least _____ years old.**
- a. 18
 - b. 12
 - c. 7
 - d. 21
- 58. A 13 year-old minor patient is presented for treatment by his mother. The mother asks you if she can leave the child for his adjustment and come back in 30 minutes. Your response should be:**
- a. Yes
 - b. No
 - c. Maybe
 - d. None of the above
- 59. While doing height and weight on a patient, the patient asks your opinion about a lump on her right elbow. You should:**
- a. Tell her you cannot answer and that she should ask the doctor
 - b. Use your knowledge to best answer the question
 - c. Consult the Merck Manual and answer her question
 - d. Tell her to see her family doctor
- 60. Dr. Jones asks you to use a G-5 device on patient X. You should:**
- a. do as directed
 - b. remind Dr. Jones that G-5 is massage and you cannot do it
 - c. first seek permission of the patient
 - d. obtain written direction from Dr. Jones

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- 61. Can you instruct a patient on Pilates exercises if you have never been trained or instructed on how to do it?**
- yes
 - no
 - yes, if the Supervising Chiropractor directs it
 - no, unless the patient agrees to it
- 62. When someone in the office fails to conduct themselves in a way that foreseeably avoids injury to the patient or their property, they may be considered clinically negligent.**
- True
 - False
- 63. If a patient accidentally gets burned by the electrical stimulation, the next appropriate step is to _____.**
- do nothing
 - call 911
 - tell the doctor
 - apply anesthetic
 - none of these
- 64. The Board requires CA Applicants to complete how many hours of observation prior to commencing their hands-on training?**
- 10
 - 20
 - 30
 - 40
- 65. A registered CA, who decides they do not wish to work in the field for the foreseeable future, has the ability to place their license on “Inactive Status”?**
- True
 - False
- 66. Once a licensed CA places his/her license on Inactive Status which of the following is true until they re-activate their license?**
- They can not perform any of the duties permitted of a licensed CA.

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- b. They are not required to attend 10 hours of continuing education every 2 years.
 - c. They do not need a valid CPR card.
 - d. All of the above.
- 67. Both chiropractors and chiropractic assistants are healthcare providers.**
- a. True
 - b. False
- 68. Chiropractic assistants may dispense non-narcotic drugs at the direction of the supervising chiropractor.**
- a. True
 - b. False
- 69. A registered chiropractic assistant with 5 years or more experience may supervise the duties of a chiropractic assistant trainee.**
- a. True
 - b. False
- 70. If your supervising chiropractor appears red-eyed, wobbly and smells of alcohol while treating patients, you should:**
- a. buy him/her breath mints
 - b. advise him/her to sober up
 - c. immediately report the incident to the Board
 - d. none of the above
- 71. You may use low level laser therapy on a patient _____.**
- a. if you are certified in laser
 - b. if directed by your supervising chiropractor
 - c. never
 - d. whenever requested in writing by the patient
- 72. A C.A. may work for a fill-in chiropractor who is not certified as a supervising chiropractor.**
- a. True
 - b. False

73. A C.A. may do adjustments:

- a. when directed by the doctor
- b. never
- c. when they are minor adjustments
- d. when they are adjustments to lower extremities

74. You are working at the front desk. The father of a 19 year-old female patient calls and asks for detailed information from the patient's record. You should:

- a. immediately give him all requested information
- b. refuse on the basis of law and regulations protecting patient privacy
- c. give no verbal information – mail him a full copy of the patient record
- d. give only verbal information from the initial examination diagnosis

75. A CA may finish up minor adjustments started by a supervising chiropractor:

- a. if the supervising chiropractor directs it
- b. if the supervising chiropractor directs it in writing
- c. never
- d. if the CA has worked doing minor adjustments for at least 5 years

76. If a Board Investigator calls for information, you should:

- a. respond to the request in a timely manner
- b. refuse to provide information
- c. be vague and avoid responding factually
- d. not answer the phone

77. The Maryland State Board of Chiropractic Examiners has no jurisdiction over massage therapists.

- a. True
- b. False

78. The Maryland State Board of Chiropractic Examiners also regulates licensed physical therapists.



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- a. True
- b. False

79. A Registered CA with X-Ray Privileges is permitted to:

- a. develop x-ray film
- b. adjust patients on the x-ray platform or table
- c. read the x-ray
- d. A & B

Part 2 CLINICAL EXAM

100 QUESTIONS

- 1. If a patient brings in an ointment/liquid chemical prescription from an MD to use with iontophoresis/phonophoresis who can do the therapy?**
 - a. Supervising Chiropractor only.
 - b. Supervising Chiropractor or Registered CA.
 - c. Supervising Chiropractor, Registered CA or CA Applicant.
 - d. That therapy can not be performed in a chiropractic office.

- 2. The healing process begins with:**
 - a. Inflammation
 - b. Coagulation
 - c. Phagocytosis
 - d. Repair phase

- 3. The amount of stimulus required to trigger the pain response is termed pain threshold.**
 - a. True
 - b. False

- 4. Pain produced by irritation of the brachial plexus due to nerve entrapment of its roots will be felt in the arm or hand instead of the armpit. This mislocalization is closely related to a phenomenon called:**
 - a. Phantom limb pain
 - b. Referred pain
 - c. Chronic pain
 - d. Epicritic pain

- 5. _____ is the coding system used to identify the type and nature of care provided to the patient.**
 - a. CPT
 - b. ICD
 - c. OSHA
 - d. PMC

- 6. Which of the following modalities has the greatest likelihood of frostbite?**
 - a. Ice Immersion
 - b. Reusable cold packs
 - c. Ice massage

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- d. Ice bag
- 7. Which of the following is a contraindication to the use of a paraffin bath?**
- No range of motion
 - Chronic conditions
 - Pain
 - Skin conditions
- 8. Which of the following devices uses convection as the method of heat transfer?**
- Ice bag
 - Whirlpool
 - Moist heat packs
 - Therapeutic ultrasound
- 9. Which of the following modalities has the greatest depth of penetration into the tissues?**
- Moist heat pack
 - Hot whirlpool
 - Infrared lamp
 - Ice bag
- 10. Which of the following is not a local effect of heat application?**
- Increased rate of cell metabolism
 - Increased blood flow
 - Increased muscle tone
 - Decreased muscle spasm
- 11. Which of the following is not an indication for the use of US?**
- Ischemic conditions
 - Pain reduction
 - Trigger points
 - Joint contractures
- 12. The least amount of reflection of ultrasonic energy occurs between:**
- Water and soft tissue
 - Soft tissue and fat
 - Soft tissue and bone
 - Soft tissue and air

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13. When treating the quadriceps tendon with US, what output frequency should be used?
- 1 MHz
 - 2 MHz
 - 3 MHz
 - It does not matter.
14. Standard (clinical) therapeutic ultrasound generators can be employed to assist in the healing of fractures.
- True
 - False
15. Which of the following substances transmits the highest percentage of ultrasonic energy relative to water?
- White petroleum gel
 - Eucerin cream
 - Ultrasound transmission gel
 - Hydrocortisone powder (1%) in US gel
16. All of the following are excitable tissues except:
- Muscle fiber
 - Meniscal cartilage
 - Sensory nerves
 - Secretory cells
17. Iontophoresis is a technique that introduces medication into the tissues through the use of electric current. For this method to work, the medication must:
- Have its outer valence shell filled
 - Have a net ionic charge
 - Be electrically neutral
 - All are correct
18. Which of the following conditions is a contraindication to the use of electrical stimulation?
- Post-traumatic pain
 - Postsurgical pain
 - Chronic pain
 - Pain of unknown origin
19. The depth that laser energy penetrates into the body is related to:

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- a. Total watts
 - b. Duty cycle
 - c. Wavelength
 - d. Total joules
20. The following is a contraindication/precaution for the use of Low-Level Laser Therapy (LLLТ):
- a. Application to retina of the eye
 - b. Some tattoo inks due to increased photosensitivity
 - c. Certain medications including tetracycline, antihistamines, oral contraceptives and anti-depressants
 - d. All of the above
21. The science of ____ is concerned with the structure of the human body.
- a. physiology
 - b. biology
 - c. anatomy
 - d. embalming
22. Which one of the following is an ORGAN?
- a. skin
 - b. kidney
 - c. a and b
 - d. endocrine system
23. The _____system is responsible for the absorption of fats, drainage of tissue fluids, and elimination of waste products.
- a. urinary
 - b. digestive
 - c. endocrine
 - d. respiratory
24. There are _____cranial bones in the adult skull.
- a. 8
 - b. 22
 - c. 12
 - d. 4

25. Which of the following is a normal function of the human skeleton?
- a. mineral storage
 - b. protection of underlying tissue
 - c. a and b
 - d. none of the above
26. _____ are the type of bone cells that break down bone structure during bone building and bone healing processes.
- a. osteocytes
 - b. osteoblasts
 - c. osteoclasts
 - d. bone lining cells
27. The tissue that covers body surfaces, cavities and ducts is:
- a. muscle
 - b. epithelial
 - c. connective
 - d. nervous
28. The type of cartilage found in intervertebral discs is _____.
- a. elastic cartilage
 - b. fibrocartilage
 - c. costal cartilage
 - d. hyaline cartilage
29. The movement of the sole of the foot outward or laterally is called:
- a. inversion
 - b. eversion
 - c. retraction
 - d. elevation
30. The thenar and hypothenar muscles are located...
- a. in the hand
 - b. in the foot

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- c. in the forearm
 - d. in the thigh
- 31. The sciatic nerve is the largest nerve in the human body.**
- a. True
 - b. False
- 32. The _____ serve(s) as a blood reservoir and also house(s) lymphocytes that are critical to body immunity.**
- a. spleen
 - b. lymph nodes
 - c. heart
 - d. esophagus
- 33. The main muscles of hip extension are the gluteals.**
- a. True
 - b. False
- 34. Excess body heat can be lost most rapidly through:**
- a. convection
 - b. conversion
 - c. evaporation
 - d. radiation
- 35. There are _____ vertebra in the lumbar spine of a human skeleton.**
- a. 7
 - b. 5
 - c. 12
 - d. 18
- 36. The Sacrum is a bone located in the _____.**
- a. cranium
 - b. pelvis
 - c. leg
 - d. sternum

- 37. Scoliosis involves a lateral curvature of the spine with vertebral rotation.**
- a. True
 - b. False
- 38. Injuries to the intervertebral disks are common in the thoracic spine.**
- a. True
 - b. False
- 39. Plantar warts are caused by _____.**
- a. fungi
 - b. radiation
 - c. insect bites
 - d. **viruses**
- 40. Active AIDS/HIV can be readily transmitted via blood-to-blood contact.**
- a. True
 - b. False
- 41. All patients who have AIDS/HIV contracted the virus through blood transfusions.**
- a. True
 - b. False
- 42. Which of the following is CORRECT regarding an acute injury?**
- a. no clear causative mechanism
 - b. characterized by rapid onset from a traumatic event
 - c. vague symptoms
 - d. all of the above
- 43. The _____ and spinal cord compose the central nervous system.**
- a. heart
 - b. brain
 - c. spleen
 - d. lungs

44. The first cervical vertebra is referred to as the_____.
- Zeus
 - Hercules
 - Atlas
 - Diogenes
45. There are 27 pairs of spinal nerves.
- True
 - False
46. A common fracture in adolescent athletes is often referred to as a _____.
- adolescent break
 - greenstick fracture
 - compound fracture
 - teen fracture
47. The most common coupling medium(s) for ultrasound is/are _____.
- air
 - water
 - gel
 - B & C
48. This modality produces arteriole vasoconstriction.
- moist heat
 - cryotherapy
 - ultrasound
 - tapotement
49. _____ is an ultrasound technique used to treat an irregular surface that cannot be submerged in water by using a thin air-free plastic bag.
- coupling cushion

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- b. barrier method
- c. submersion
- d. none of the above

50. _____ is the electromotive force that pushes current.

- a. power
- b. electrical charge
- c. voltage
- d. tesla coupling

51. Pulse rate refers to the number of times per second that a certain electric flow or pulse is repeated.

- a. True
- b. False

52. Low frequency currents can either be direct or alternating.

- a. True
- b. False

53. Anatomy is the study of body structure.

- a. True
- b. False

54. A tissue is a group of _____ with similar functions.

- a. cells
- b. molecules
- c. atoms
- d. none of the above

55. The liver, gallbladder, and stomach are part of the _____.

- a. endocrine system
- b. digestive system
- c. nervous system
- d. skeletal system

56. Homeostasis is defined as:

- a. the production of cells by energy
- b. the maintenance of relative constant environment of the body
- c. the amplification of deviation from normal range
- d. the combination of growth, repair and energy release.

57. The term that means “AWAY FROM THE MIDLINE OF THE BODY” is:

- a. medial
- b. proximal
- c. lateral
- d. distal

58. The thoracic cavity is separated from the abdominal cavity by the:

- a. sternum
- b. heart
- c. diaphragm
- d. splenal curriculum

59. Another term for “fingers” is _____.

- a. phalanges
- b. tarsals
- c. carpals
- d. manuals

60. The amount of time it takes for an electrical stimulation current to go from 0 to peak amplitude is known as _____.

- a. duty cycle time
- b. ramp time
- c. current time
- d. frequency time

61. Which of the following is NOT a term used to describe electricity?

- a. charge
- b. current

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- c. voltage
- d. excitability

- 62. Pregnancy should be considered a contraindication to electrical stimulation.**
- a. True
 - b. False
- 63. Which of the following are contraindications to electrical stimulation?**
- a. application over a cancerous lesion
 - b. application over an area of thrombophlebitis
 - c. application over an implanted pacemaker
 - d. all of the above
- 64. Triphasic is a basic current waveform used with electrical stimulation.**
- a. True
 - b. False
- 65. The practitioner may use a two pronged plug adapter to connect an electrical stimulation device with a three prong plug to a wall outlet.**
- a. True
 - b. False
- 66. _____ law states that the delivered energy is related to the amount of resistance encountered.**
- a. Burke's law
 - b. Ohm's law
 - c. Newton's law
 - d. Columbo's law
- 67. _____ is the absence of pain or noxious stimulation.**
- a. anesthesia
 - b. analgesia
 - c. hypocretia
 - d. hydrolymphina

- 68. Pain that lasts longer than 3 months and leads to a long term loss of function is best known as _____ pain.**
- a. acute
 - b. chronic
 - c. referred
 - d. general
- 69. Increased tissue temperature and erythema are the result of the vasodilation of _____.**
- a. muscle tissue
 - b. blood vessels
 - c. lymph nodes
 - d. nervous tissue
- 70. Both radiation and convection are considered physical mechanisms of heat exchange.**
- a. True
 - b. False
- 71. The transformation of a liquid into a gas is known as evaporation.**
- a. True
 - b. False
- 72. Hot packs, heat wraps, and warm whirlpool are examples of _____ therapeutic heat.**
- a. superficial
 - b. conversional
 - c. transitional
 - d. conductoral
- 73. Heat loss or gain through direct contact between materials with different temperatures is called _____.**
- a. radiation
 - b. evaporation

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- c. conversion
- d. conduction

74. _____ would be the best therapy for acute inflammation and edema.
- a. heat
 - b. cold
75. Hot packs are one of most common ways to deliver superficial moist heat to patients.
- a. True
 - b. False
76. “Cryo” literally means cold.
- a. True
 - b. False
77. A sensory deficit patient should be monitored the same as any other patient during heat treatments.
- a. True
 - b. False
78. The local application of superficial heat may decrease inflammatory response when treating an acute injury.
- a. True
 - b. False
79. When using ice massage, the acronym “CBAN” refers to “*cold, burning, aching, and numbness.*”
- a. True
 - b. False
80. Knowing the potential adverse effects of a thermal agent is an important consideration when treating a patient.
- a. True

b. False

81. With therapeutic ultrasound, the actual sound wave cannot be heard by the patient or the CA.

- a. True
- b. False

82. Therapeutic ultrasound is almost always applied at these 2 frequencies:

- a. 1 MHz or 2 MHz
- b. 1 MHz or 3 MHz
- c. 1 MHz or 4 MHz
- d. 2 MHz or 3 MHz

83. In treating a superficial injury with ultrasound, the best parameter selection is _____MHz:

- a. 1
- b. 2
- c. 3
- d. 4

84. Heat generated within tissues as a result of therapeutic ultrasound is caused by radioactive materials found in the ultrasound transmitter.

- a. True
- b. False

85. Which of the following terms refers to pulling or drawing apart bones or spinal segments?

- a. compression
- b. inversion
- c. deletion
- d. traction

86. Which of the following is a common goal of traction?

- a. reduction of radicular signs and symptoms
- b. reduction of spinal disc protrusions

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- c. decreasing lateral spinal curvatures
 - d. all of the above
- 87. The weight necessary to overcome frictional forces of the lower body is _____ of the patient's body weight.**
- a. $\frac{1}{4}$
 - b. $\frac{1}{2}$
 - c. $\frac{3}{4}$
 - d. none of the above
- 88. Paraffin units have a preset temperature range of 125 – 130 degrees Fahrenheit to allow the paraffin to be applied directly to the skin.**
- a. True
 - b. False
- 89. Which of the following can cause burns to a patient if used improperly or carelessly?**
- a. hot packs
 - b. electrical stimulation
 - c. diathermy units
 - d. all of the above
- 90. Shortwave, microwave and ultrasonic diathermy are all classified as high frequency currents.**
- a. True
 - b. False
- 91. Shortwave diathermy may be applied simultaneously with other forms of electrotherapy.**
- a. True
 - b. False
- 92. Therapeutic ultrasound should NOT be used over the eye of a patient.**
- a. True
 - b. False

- 93. Moist heat and cold modalities have wavelengths and frequencies that fall in the _____ portion of the electromagnetic spectrum.**
- ultraviolet
 - gamma ray
 - infrared
 - radioactive
- 94. The physiologic response to electrical current includes stimulating sensory nerves to help in treating pain.**
- True
 - False
- 95. Which of the following is NOT a phase of the healing process?**
- degeneration phase
 - remodeling phase
 - repair phase
 - inflammatory phase
- 96. Which of the following is a common, effective treatment in controlling edema?**
- stretching
 - compression
 - heat
 - vibration
- 97. Which of the following is CORRECT regarding the human endocrine system?**
- its main purpose is to aid the heart in blood flow
 - it directly assists in food digestion
 - it releases hormones that alter metabolic activities
 - it serves to aid the functions of the optic nerves
- 98. The term “articulation” refers to:**
- blood flow

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- b. nerve impulse
- c. joint
- d. bone growth

99. Which of the following is NOT part of the axial skeleton?

- a. femur
- b. sternum
- c. mandible
- d. sacrum

100. A ligament running along the side of the knee joint is:

- a. cruciate
- b. collateral
- c. patellar
- d. bursae

101. The central nervous system is comprised of_____.

- a. brain
- b. brain and spinal cord
- c. brain and peripheral nerve bundle
- d. brain and thalamus

102. The nerves located OUTSIDE of the brain and spinal cord comprise the _____ nervous system

- a. central
- b. general
- c. peripheral
- d. basal

103. The mediastinum is located in the_____.

- a. leg
- b. thoracic cavity
- c. larynx
- d. cranial cavity

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- 104. Which of the following is NOT normally found in urine?**
- glucose
 - uric acid
 - urea
 - creatinine
- 105. Which of the following is NOT a function of the nervous system?**
- sensory
 - integrative
 - nourishment
 - motor
- 106. Regulating body temperature is a function of the human skin.**
- True
 - False
- 107. The body's normal response to injury is a sequence of events known as:**
- heat exhaustion
 - granulation
 - keratinization
 - inflammation
- 108. The term _____ means "*towards the back or rear.*"**
- posterior
 - inferior
 - superficial
 - medial
- 109. The study of natural forces to enhance or assist healing is called_____.**
- psychiatry
 - psychology
 - physiological therapeutics
 - none of the above

110. Myology is the study of_____.
- a. muscles
 - b. nerves
 - c. bones
 - d. skin
111. Cardiology is the study of_____.
- a. nerve systems
 - b. the heart
 - c. the blood system
 - d. internal organs
112. A disrupted nervous system can have a negative effect on the immune system.
- a. True
 - b. False
113. In the anatomical position, the palms are facing anteriorly.
- a. True
 - b. False
114. The pancreas is part of the _____system.
- a. digestive
 - b. reproductive
 - c. nervous
 - d. circulatory
115. The back of the head is referred to as the _____area.
- a. femoral
 - b. occipital
 - c. celiac
 - d. axillary
116. A cut that divides the body into right and left halves is _____.
- a. sagittal

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- b. transverse
- c. medial
- d. frontal

117. The largest artery in the human body is the_____.

- a. superior vena cava
- b. inferior vena cava
- c. aorta
- d. none of these

118. There are _____bones in the human body.

- a. 100
- b. 206
- c. 312
- d. 477

119. The _____ system controls secretion of hormones.

- a. circulatory
- b. muscular
- c. respiratory
- d. endocrine

120. The spine is basically a _____structure

- a. rigid
- b. non-rigid

121. There are 14 thoracic vertebrae.

- a. True
- b. False

122. Smooth muscle operates under involuntary control.

- a. True
- b. False

123. There are _____ chambers in the human heart
- 2
 - 3
 - 4
 - 5
124. Overstretching, pulling or tearing a LIGAMENT of a joint is called _____.
- strain
 - sprain
 - spasm
 - spam
125. The _____ nerve is vital to vision.
- cranial
 - avuncular
 - optic
 - olfactory
126. A _____ is a rupture of human bone.
- strain
 - sprain
 - fracture
 - pull
127. This type of traction involves placing a patient on their side with a pillow roll underneath, allowing the spine to straighten.
- gravity
 - positional
 - manual
 - alternating
128. If a patient complains of a strong “itchy” sensation after vibration with a G-5 device, this is most likely due to:
- a rush of blood to the area

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- b. a localized infection
- c. superficial tissue damage
- d. overstimulation of cutaneous nerves

129. Sine waves of constant amplitude but of slightly different frequencies from 2 sources best describes interferential current.

- a. True
- b. False

130. The carrier frequency for Russian stimulation is _____ Hz.

- a. 2500
- b. 3000
- c. 3500
- d. 4000

131. Which frequency is best for treating acute lumbar disc syndrome?

- a. 1-15 Hz
- b. 80-120 Hz
- c. 35-40 Hz
- d. 1-150 Hz

132. Which frequency is best for treating chronic cervical spine pain?

- a. 1-15 Hz
- b. 80-120 Hz
- c. 1-150 Hz
- d. 35-40 Hz

133. Frequency of electrical current may be expressed in Hertz (Hz), pulses per second (pps) or cycles per second (cps).

- a. True
- b. False

134. Which electrical generator requires a dispersal pad?

- a. AC
- b. DC

- c. T.E.N.S.
- d. IFC

135. Which of the following would NOT be considered a general physiologic effect of electrical muscle stimulation?

- a. decreased blood flow
- b. reduced edema
- c. relaxed muscle spasm
- d. recruitment of muscle fibers

136. Heat is best transferred DEEP into the body by_____.

- a. conversion
- b. convection
- c. radiation
- d. conduction

137. Short wave diathermy is best used for_____.

- a. sub-acute and chronic conditions
- b. acute conditions
- c. inflammatory conditions
- d. transient conditions

138. Paraffin bath may be applied over an open wound or lesion.

- a. True
- b. False

139. The intensity of a UV lamp will _____the closer it is placed to the treatment area.

- a. increase
- b. decrease

140. The intensity of radiation is always greatest at right angles (90 degrees) to the treatment area.

- a. True
- b. False

141. Which of the following is a positively charged particle?

- a. neutron
- b. proton
- c. electron
- d. nucleus

142. An electron is a negatively charged particle.

- a. True
- b. False

143. Resistance is measured in _____.

- a. amperes
- b. watts
- c. ohms
- d. volts

144. Volts are a measurement of _____.

- a. intensity
- b. speed of current flow
- c. electromotive force
- d. distance

145. Which of these modalities carries the GREATEST RISK for burning a patient?

- a. Low volt current
- b. High volt DC current
- c. interferential current
- d. terminal current

146. Hot moist packs are an example of conduction.

- a. True
- b. False

147. Current is defined as the flow of _____.

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- a. electrons
- b. neutrons
- c. protons
- d. nuclei

148. Which of the following is NOT a method of cooling?

- a. convection
- b. ultrasound
- c. evaporation
- d. conduction

149. The FIRST phase of a soft tissue injury usually lasts _____.

- a. 5-6 days
- b. 0-72 hours
- c. 8-24 hours
- d. 1-2 weeks

150. When applying hot packs _____ layers of toweling should be used.

- a. 1-2
- b. 3-4
- c. 9-10
- d. 6-8

151. A nociceptor is another name for a sensory receptor for pain.

- a. True
- b. False

152. Which of the following is TRUE regarding T.E.N.S.

- a. it is used only to reduce edema
- b. it provides sensory stimulation only

153. T.E.N.S. is PRIMARILY used to help heal bone fractures.

- a. True
- b. False

154. Hubbard tanks should be cleaned and sterilized:

- a. monthly
- b. weekly
- c. after each patient use
- d. when requested by a patient

155. When using continuous ultrasound, the applicator head should be:

- a. turned off
- b. constantly moved over the treatment area
- c. left directly over the treatment area in a stationary position
- d. used with no coupling medium

156. The term PAIN THRESHOLD refers to the _____stimulus that will excite the sensation of pain.

- a. lowest
- b. highest
- c. average
- d. mean

157. Treatment for intermittent traction is normally between_____.

- a. 5- 10 minutes
- b. 10-15 minutes
- c. 15-30 minutes
- d. 30-70 minutes

158. The primary purpose of combining ultrasound and electrical muscle stimulation is for:

- a. better pain control
- b. decreased skin resistance and penetration
- c. increased fluid production
- d. muscle rehabilitation

159. In which of the following should electrical stimulation NOT be used?

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- a. over a pacemaker
- b. over a pregnant uterus
- c. over the cranium
- d. all of the above

160. High volt stimulation is best used for:

- a. pain control
- b. blood flow improvement
- c. edema reduction
- d. wound healing

161. Burns during electrotherapy are usually caused by:

- a. voltage
- b. amperage
- c. wattage
- d. baggage

162. Which of the following is an ABSOLUTE CONTRAINDICATION when using short wave diathermy?

- a. metal table
- b. arthritis
- c. bronchitis
- d. woolen underwear

163. Which of the following tissues would conduct electricity the best?

- a. bone
- b. skin
- c. muscle
- d. fat

164. A hematoma is a:

- a. blood clot
- b. bone spur
- c. ruptured disc
- d. subluxation

165. The founder of modern chiropractic is:

- a. Dr. Zhivago
- b. Dr. Seuss
- c. Dr. D. D. Palmer
- d. Dr. Doolittle

166. Chiropractic was discovered/founded in:

- a. 1895
- b. 2005
- c. 1997
- d. 1956

167. Cryotherapy decreases inflammation and slows metabolism.

- a. True
- b. False

168. Which type of exercise does NOT produce joint motion?

- a. isotonic
- b. isometric
- c. isokinetic
- d. isopropyl

169. The nervous system is covered by the _____ membrane.

- a. periosteal
- b. meningeal
- c. peritoneal
- d. fascial

170. The 2 major fluid transport systems of the body are:

- a. cardiovascular & lymphatic
- b. urinary & digestive
- c. endocrine & circulatory
- d. benzedrine & phenundrial

171. The partition dividing the heart into a left and right side is the _____.
- a. atrium
 - b. ventricle
 - c. septum
 - d. valve
172. The largest collection of lymphatic tissue is in the _____.
- a. heart
 - b. pancreas
 - c. liver
 - d. spleen
173. Red blood cells are called _____.
- a. platelets
 - b. erythrocytes
 - c. leukocytes
 - d. thrombocytes
174. The large muscle forming the bottom of the thoracic cavity is the **diaphragm.**
- a. True
 - b. False
175. Submandibular glands are salivary glands.
- a. True
 - b. False
176. Long, microscopic processes moving in a wave-like motion are called **cilia.**
- a. True
 - b. False
177. Small intestines are attached to posterior abdominal cavity by **mesentery tissue.**

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- a. True
- b. False

178. The part of the small intestine where most food absorption occurs is the:

- a. ileum
- b. duodenum
- c. cecum
- d. jejunum

179. Microscopic filtration plants that filter the blood and form urine are:

- a. hilum
- b. gall bladders
- c. nephrons
- d. medulla

180. Nerves that carry impulses from the skin to the central nervous system are:

- a. motor nerves
- b. basal nerves
- c. sensory nerves
- d. impulse nerves

181. The _____ conducts impulses away from the cell body of the nerve.

- a. axon
- b. nuclei
- c. dendrite
- d. cilia

182. Relay stations of the autonomic nervous system are:

- a. ganglia
- b. plexuses
- c. motor points
- d. spinal nerves

183. The transparent anterior portion of the outer coating of the eye is the:

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- a. choroid
- b. sclera
- c. cornea
- d. retina

184. The part of the eye which may be torn by trauma which causes a patient to complain of partial vision.

- a. cornea
- b. retina
- c. sclera
- d. choroid

185. The part of the eye which may become jaundiced (yellowed) due to liver disease.

- a. cornea
- b. retina
- c. sclera
- d. choroids

186. Vitreous fluid is found in the _____ of the eye.

- a. anterior cavity
- b. posterior cavity
- c. lacrimal apparatus
- d. cochlea

187. _____ is the hormone that regulates the body metabolism.

- a. insulin
- b. thyroxine
- c. epinephrine
- d. parathormone

188. _____ is the endocrine gland that produces stimulating hormones.

- a. pituitary
- b. periosteum

- c. synovial
- d. adrenals

189. Bile is created in the_____.

- a. gallbladder
- b. liver
- c. pancreas
- d. spleen

190. The involuntary wave-like contraction of smooth muscle of the digestive tract is called:

- a. peristalsis
- b. acid reflux
- c. regurgitation
- d. swallowing

191. The outermost strong fibrous layer of the meninges is the:

- a. dura mater
- b. arachnoid
- c. pia mater
- d. none of the above

192. Soft tissue acute inflammatory stage usually lasts:

- a. 0-72 hours
- b. 48 hours – 2 weeks
- c. 1-2 weeks
- d. 2-6 minutes

193. Sudden pain felt at a spot or point along a well localized line is:

- a. deep pain
- b. radiating pain
- c. superficial pain
- d. central pain

194. Naturally produced morphine-like substances made by the body are:

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- a. elephantiasis
- b. endorphins
- c. exotherocins
- d. edonodules

195. The mechanism that protects against muscle tearing is:

- a. painful splinting
- b. stretch reflex
- c. painful cramp
- d. muscles spasm

196. When treating a trigger point with electrical muscle stimulation, _____ polarity should be used.

- a. positive
- b. negative
- c. alternating
- d. medial

197. When using a hot moist pack, it takes _____ minutes before maximum heat will reach the patient.

- a. 5-10
- b. 20-30
- c. 45-60
- d. 60-90

198. Which of the following are contraindications to using hot moist packs?

- a. bleeding tendency
- b. pregnant uterus
- c. malignant tumor
- d. all of the above

199. Which of the following devices is used to diagnose/treat certain diseases such as *tinea pedis* (athlete's foot)?

- a. sun lamp
- b. cold quartz lamp

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- c. Wood's lamp
- d. Mercury vapor lamp

200. The _____ law states that if the distance between the light source and the patient is cut in half, the intensity of the source is quadrupled.

- a. law of averages
- b. inverse square law
- c. cosign law
- d. absorption flow law

201. _____ increases visceral circulation.

- a. short wave diathermy
- b. moist heat
- c. hot water
- d. infrared

202. _____ minutes is the normal amount of time to treat with short wave diathermy.

- a. 10
- b. 30
- c. 60
- d. 90

203. The power produced by an ultrasound unit is measured at the sound head in _____.

- a. volts
- b. amps
- c. watts
- d. pulses

204. The greatest effects of ultrasound occur at the interface between different tissue types.

- a. True
- b. False

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- 205. The ultrasound frequency best used to treat deep fibrotic conditions is _____ MHz.**
- 1
 - 3
 - 5
 - 7
- 206. When treating small superficial areas with ultrasound such as fingers, it is best to use _____ MHz.**
- 1
 - 3
 - 5
 - 7
- 207. Ultrasound treatments normally should not exceed _____ minutes per area.**
- 4-8
 - 10-15
 - 20-30
 - none of the above.....the patient will tell you when to stop
- 208. The maximum treatment time for ice massage is _____.**
- 20 minutes or numbness, whichever comes first
 - 50 minutes or numbness, whichever comes first
 - 5 minutes or numbness, whichever comes first
 - there is no maximum treatment time
- 209. The electromotive force that pushes current into the patient is:**
- current
 - amperage
 - pulse rate
 - voltage

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- 210. Sinusoidal current is a low voltage, low amperage, and low frequency alternating symmetrical current.**
- True
 - False
- 211. A continuous, direct, unidirectional, low voltage current is a _____ current.**
- galvanic
 - faradic
 - demonic
 - carcanian
- 212. When using high voltage therapy _____ pps setting should be used for acute pain modulation.**
- 1-10
 - 15-20
 - 70-120
 - 30-50
- 213. In treating edema, a high volt pulse setting of _____ should be used.**
- 10 pps or less
 - 20 pps or more
 - 70-200 pps
 - 200-350 pps
- 214. Low volt therapy may NOT be used on a patient with a pacemaker.**
- True
 - False
- 215. Low volt electrotherapy is defined as using less than _____ volts with an average current of 1-30 ma.**
- 5
 - 50
 - 150

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d. 300

216. Placing the electrodes farther apart in interferential therapy causes the depth of the penetration to_____.

- a. increase
- b. decrease

217. Using a 4-pole IFC technique to electronically control the therapy site is called _____.

- a. vectoring
- b. frequency modulation

218. To keep the patient from accommodating to the IFC current, the inferential technique to be used is:

- a. vectoring
- b. frequency sweep

219. The carrier frequency to be used in Russian Stimulation is 2500 Hz.

- a. True
- b. False

220. The treatment schedule for muscle strengthening with Russian Stimulation should be:

- a. 10 second contraction followed by 50 second rest; 7- 10 reps
- b. 20 second contraction followed by 20 second rest; 20-30 reps
- c. 30 second contraction followed by 2 minute rest; 3-4 reps
- d. 10 second contraction followed by 5 second rest; 2-3 reps

221. The maximum amount of weight that may be used in cervical traction is _____ pounds.

- a. 5
- b. 15
- c. 20
- d. 30

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- 222. A patient presents with peripheral artery disease. Which of the following is contraindicated?**
- ice packs
 - hot packs
 - continuous ultrasound
 - all of the above
- 223. Under S.O.A.P. notes format, under which abbreviated heading would a patient's range of motion be correctly listed?**
- S.
 - O.
 - A.
 - P.
- 224. A patient in a SUPINE position is lying_____.**
- on his back
 - on his side
 - on his stomach
 - in a fetal position
- 225. Electrical stimulation may be used on patients with pacemakers:**
- never
 - if the pacemaker is put on low charge
 - if the pacemaker is turned off
 - if the supervising chiropractor and patient requests it
- 226. The acronym: R.I.C.E. refers to the term *Resistance in Chronic Exams***
- True
 - False
- 227. The word subluxation means**
- a complete dislocation
 - a partial mislocation
 - an incomplete or partial dislocation
 - none of the above

228. The prefix “hyper-” means

- a. lacking
- b. hard, indurated
- c. below
- d. over, beyond, excessive
- e. none of these

229. The root “physi” means

- a. mechanical
- b. nature
- c. bold
- d. red
- e. muscle

230. The root “leuko” means

- a. white
- b. black
- c. red
- d. blue
- e. warm

231. The epiphysis and diaphysis are at opposite ends of long bones

- a. True
- b. False

232. The purpose of bursae is to

- a. reduce joint friction
- b. reduce pressure on the joint
- c. improve joint motion
- d. all of the above
- e. none of the above

233. Enlargement of the _____ is a common cause of urinary complications

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- a. ureters
- b. urethra
- c. nephron
- d. prostate gland
- e. none of the above

234. When adjunctive procedures are used, they should be used in such a way as to duplicate the body's innate healing response.

- a. True
- b. False