

Physiotherapy

- Short wave diathermy is contraindicated in which condition:
 - prostatitis
 - bronchitis
 - sinusitis
 - tuberculosis**D**
- Metal implants can be used with which modality:
 - short wave
 - microwave
 - interferential
 - ultrasound**C**
- Systemic Lupus Erythematosus should not be heated with
 - UV
 - TENS
 - cryotherapy
 - low volt**A**
- Dupuytren's contracture is best treated with
 - low volt
 - high volt
 - ultrasound
 - TENS**C**
- Heat has which of the following effects:
 - increases capillary hydrostatic pressure
 - decreases capillary hydrostatic pressure
 - increases vasodilation
 - decreases phagocytosis**C**
- Interferential can be used with?
 - implants
 - thrombosis
 - pregnancy
 - malignancy**A**
- Which massage uses stroking:
 - effleurage
 - petrissage
 - tapotement
 - friction**A**
- Adhesive capsulitis should not be treated with:
 - massage
 - joint mobilization
 - exercise pressure
 - immobilization**D**
- What exercises are good for female incontinence:
 - Kegel exercises
 - Buerger Allen's
 - Williams
 - McKenzie**A**
- Which modality is contraindicated for hypermobile joints?
 - intermittent fraction
 - taping
 - racing
 - rest**A**
- Inverted traction would be contraindicated with
 - hypertension
 - DJD
 - chronic disc bulge
 - chronic back sprain**A**
- When performing cryokinetics what is done first:
 - numb the area
 - heat the area
 - exercise the area
 - rest the area**A**
- What is the order of the Huntington reaction:
 - cold, burning, aching, numbness
 - periodic vasodilation of vessels from the cold
 - burning, cold, aching, numbness
 - cold, aching, burning, numbness**A**
- Tissue elasticity is increased with;
 - heat
 - cold
 - ice
 - electrical current**A**
- Why is a towel used with short-wave diathermy?
 - to avoid burning patient
 - to avoid shock
 - to conduct current
 - to reduce thermal effect**A**
- The best modality for a patient who sprained his ankle three days ago is
 - contrast bath
 - infrared
 - UV
 - microwave**A**
- In which condition are whirlpool baths contraindicated:
 - burns
 - sprains
 - arterial insufficiency
 - hypertension**D**
- For which condition is a silz bath contraindicated:
 - dysmenorrhea
 - hemorrhoids
 - anhidrosis
 - prostatitis**C**
- The best modality for Raynauds is
 - near UV
 - superficial heat
 - cryotherapy
 - ultrasound**B**
- Minimal erythematous dosage produces:
 - slight pigmentation
 - no redness
 - extreme redness
 - first degree burn**A**
- Orificial UV has what kind of effect:
 - bactericidal
 - mechanical
 - electrokinetic
 - pain control**A**
- What effect does short-wave diathermy have:
 - thermal
 - mechanical
 - electrokinetic
 - hypothermal**A**
- Which modality uses high frequency current:
 - high volt galvanic
 - ultrasound
 - Interferential
 - TENS**B**
- What chemical is used for fungal infections:
 - CuSO₄
 - KI
 - MgSO₄
 - sodium salicylate**A**
- What would be an indication or condition where ultrasound would be used:
 - herpes zoster
 - fracture
 - diabetes mellitus
 - Raynauds**A**
- Ultrasound which is used to drive in fluids is called
 - phonophoresis
 - iontophoresis
 - electrophoresis
 - cataphoresis**A**
- Contraindications to traction include
 - DJD
 - hypomotility
 - fibrosis
 - spinal cord compression**D**
- Which is the best modality for polar effects:
 - high volt galvanic
 - low volt galvanic
 - TENS
 - interferential**B**

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29. Interrupted galvanic causes
 A. sharp intermittent contractions
 B. strong, single contractions
 C. no contractions
 D. used for iontophoresis
****B****
30. Which modality goes up gradually and then drops:
 A. faradic
 B. galvanic
 D. inferferential
 D. surge
****D****
31. What is the effect on tissue at the negative pole:
 A. vasoconstriction
 B. softens tissue
 C. used for acute conditions
 D. attracts acids
****B****
32. The smaller electrode is
 A. more active
 B. less active
 C. indifferent
 D. dispersive
****A****
33. The monopolar pad in galvanic is for:
 A. large muscles
 B. large area
 C. single muscles
 D. small area
****B****
34. Which of the following is a contraindication to ultrasound:
 A. anesthesia
 B. decreased ROM
 C. sprain
 D. strain
****A****
35. Subacute conditions are treated with ultrasound for:
 A. 4-6 minutes
 B. 10-20 minutes
 C. 20-30 minutes
 D. 30-40 minutes
****A****
36. Which is the best modality to use with a diabetic amputee:
 A. TENS
 B. diathermy
 C. ultrasound
 D. UV
****A****
37. What is the most common conventional use of a TENS:
 A. scoliosis
 B. non invasive for pain
 C. muscle spasms
 D. atrophy
****B****
38. When are enkephalins produced:
 A. 80-120pps
 B. 1-10pps
 C. 20-40pps
 D. 40-80pps
****A****
39. If used for a prolonged period of time you can get skin irritation with which modality:
 A. TENS
 B. ice
 C. UV
 D. I.R.
****A****
40. What modality should be used for contact dermatitis with red, swollen, weeping blisters:
 A. UV
 B. cryotherapy
 C. hydrocollator pack
 D. TENS
****B****
41. A coaxial cable is used with
 A. interferential
 B. diathermy
 C. low volt
 D. ultrasound
****B****
42. Which is a physiological effect of shortwave diathermy:
 A. polar effect
 B. increased vasodilation
 C. hypothermal
 D. electrokinetic
****B****
43. Electromotive force is measured In
 A. wattage
 B. amperage
 C. volts
 D. ohms
****C****
44. How do you stretch the infraspinatus muscle:
 A. external rotation
 B. internal rotation
 C. abduction
 D. adduction
****B****
45. To totally abduct the shoulder, the shoulder must first
 A. flex
 B. externally rotate
 C. extend
 D. internally rotate
****B****
46. Which exercise causes the greatest increase in heart rate:
 A. active isometric
 B. active isotonic
 C. passive
 D. active with assistance
****B****
47. The best way to improve coordination is:
 A. many complex movements
 B. one simple movement
 C. no movement
 D. limited movement
****A****
48. In a patient with osteoarthritis and limited range of motion, what is contraindicated:
 A. soft cervical collar
 B. fraction
 C. exercise
 D. heat
****A****
49. Wall walking and pendular exercises are for the
 A. knee
 B. knee
 C. hip
 D. foot
****A****
50. If the patient has a decrease in the lumbar lordosis, what exercise should you prescribe:
 A. anterior pelvic tilt
 B. posterior pelvic tilt
 C. hip rotation
 D. hip flexion
****A****
51. With anterior pelvic tilt, what other exercises must be done:
 A. strengthen abdominals
 B. strengthen gluteals
 C. stretch hamstrings
 D. all of the above
****D****
52. In a patient with subacute low back pain and disc problems aggravated by movement, what modality is best for the pain and muscle spasm:
 A. low volt galvanism
 B. high volt galvanism
 C. TENS
 D. diathermy
****B****
53. Which modality is best for muscle spasm:
 A. tetanizing current
 B. surge current
 C. intermittent current
 D. paraffin bath
****A****
54. Strengthening the vastus medialis muscle helps the knee because it:
 A. decreases the Q angle
 B. decreases the lateral displacement of the patella
 C. increases the mobility of the patella
 D. decreases tibial torsion
****B****
- *****
1. Electro-stimulation of the supraorbital nerve to support reflex would test the integrity the nerve:
 A. trigeminal
 B. oculomotor
 C. facial
 D. hypoglossal
****A****

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2. A 6-year-old male presents 2 months after a surgical repair of a hip fracture with a nail. Which modality is contraindicated in treatment of the pain, muscle spasm, and decreased ROM:
 A. infrared
 B. pulsed ultrasound
 C. hydrocollator pack
 D. shortwave diathermy
 D
3. A patient presents with a long history of cervical degenerative arthritis with foramina encroachment. The treatment of choice is:
 A. cryotherapy
 B. resistance exercise
 C. muscle stimulation
 D. cervical traction
 E. continuous ultrasound
 D
4. A positive Phalens test is contraindicated for which therapy:
 A. ultrasound over the volar ligament
 B. strengthening of the wrist extensor
 C. immobilization of the wrist
 D. strengthening of the wrist flexors
 D
5. A significantly decreased contraction in response to electrical stimulation of a mildly atrophied muscle when compared with the contraction on the opposite side indicates:
 A. a lower motor neuron lesion
 B. hyper-irritability of the contralateral muscle
 C. hyper-irritability of the atrophied muscle
 D. a normal finding
 A
6. One megahertz over the sound frequency can be used to diagnose:
 A. fractures
 B. gallstones
 C. sprains
 D. tumors
 A
7. A grade 3 strength of muscles is one in which transverse joints predisposes the affected area to develop:
 A. laxity
 B. osteochondrosis
 C. hypermobility
 D. contraction
 C
8. The electrical stimulation of a nerve which sustains complete neuropraxia two weeks previously will elicit which response;
 A. normal reaction
 B. total RD
 C. partial RD
 D. absolute RD
 D
9. Which therapy is contraindicated in examination of a person with a positive Trendelenburg test:
 A. strengthening of the hip abductors
 B. electrical muscle stimulation to the gluteus medius
 C. stretching the hip adductors
 D. strengthening the hip adductors
 D
10. Exam reveals acute subdeltoid bursitis. Which therapy is contraindicated:
 A. interferential
 B. SW diathermy
 C. cold pack
 D. high volt direct current
 E. TENS
 B
11. The component of electrical stimulation which has the greatest effect in determining the accommodation of stimulated muscle:
 A. pulsed repetition rate
 B. pulsed duration
 C. pulsed rise time
 D. amplitude
 B
12. What determines the rate at which a nerve fiber fires:
 A. pulsed width
 B. pulsed repetition
 C. amplitude of the current
 D. pulsed and rise time
 B
13. A unit of electrical resistance is:
 A. faradic
 B. Ohm
 C. hertz
 D. Coulomb
 B
14. What occurs during the test for galvanic current polarity:
 A. hydrogen bubbles form at the positive pole
 B. blue litmus paper turns red at the positive pole
 C. red litmus paper turns blue at the positive pole
 D. oxygen bubbles form at the negative pole
 E. no bubbles form at the positive pole
 C
15. The mechanism which causes high frequency alternating current to create mechanical ultrasonic vibration is known as:
 A. interpolar
 B. polar
 C. electromagnetic
 D. piezoelectric
 D
16. The mode of transfer that occurs with ultrasound is:
 A. conduction
 B. conversion
 C. radiation
 D. convection
 B
17. Which modality uses conduction as a means of heat transfers:
 A. hydrocollator
 B. infrared
 C. hydrotherapy
 D. short wave diathermy
 A
18. The transfer of heat from a fluid moving over a body surface is known as:
 A. circumduction
 B. conduction
 C. convection
 D. conversion
 E. radiation
 C
19. Chlorine iontophoresis has which effect:
 A. anti-fungal
 B. analgesic
 C. decongestant
 D. suppurative
 C
20. Which modality possesses the strongest polar effects:
 A. sine wave
 B. low volt indirect current
 C. high volt direct current
 D. ultrasound
 C
21. Infrared is most effective at degrees of angulation from source to patient:
 A. 30
 B. 45
 C. 60
 D. 90
 D
22. Which is a systemic effect of heat:
 A. decreased alkalinity of blood
 B. decreased circulation
 C. Increased blood pressure
 D. increased mucous formation
 E. decreased respiration
 D
23. Which heat modality is a maximum penetrating dose of less than 10 mm.:
 A. infrared
 B. ultrasound
 C. microwave diathermy
 D. shortwave diathermy
 A
24. Which is not a physiological effect of localized heating:
 A. increased phagocytosis
 B. sedation of nerve endings
 C. capillary dilation
 D. increased blood pressure
 E. relief of muscular spasms
 D
25. Which is not an effect of continuous moderate traction therapy:
 A. increasing muscle tone
 B. immobilizing fractures
 C. relieving compression effects
 D. relieving muscular spasms
 A
26. The major effect of diathermy is:
 A. vasodilation of the blood vessels
 B. depolarization of spastic muscles
 C. expansion of tissue spaces
 D. micro-massage of tissues
 E. chemical change in the tissues
 A
27. First degree erythema is characterized by:
 A. slight reddening
 B. desquamation
 C. blistering
 D. intense reddening
 A

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28. Which modality does not produce heat in body tissue:
 A. ultrasound
 B. short wave diathermy
 C. microwave diathermy
 D. interferential current
 D
29. Paraffin is best for the treatment of:
 A. foot ulcers
 B. arthritis in the hands
 C. lumbar strain
 D. temporary paralysis
 B
30. Which is not effective treatment for trigger points:
 A. sustained pressure
 B. ultrasound
 C. electrical stimulation
 D. ice massage
 E. infrared
 D
31. Which is not a contraindication to infrared therapy:
 A. acute pyrexia
 B. active gangrene
 C. simple fracture
 D. active TB
 C
32. Contrast baths are indicated for:
 A. thermal anesthesia
 B. arterial insufficiency
 C. advanced arteriosclerosis
 D. stress fracture
 B
33. Which is contraindicated for the treatment of multiple sclerosis:
 A. massage
 B. galvanism
 C. cold
 D. heat
 D
34. Infrared is contraindicated in:
 A. Osgood Schlatter
 B. Raynauds disease
 C. arteriosclerosis obliterans
 D. tendonitis, obliterans
 C
35. Perirectal abscesses are best treated
 A. sifz baths
 B. moist baths
 C. massage
 D. infrared
 A
36. The purpose of transitional movement during ultrasound application is to:
 A. increase depth of penetration
 B. provide superficial massage
 C. prevent periosteal irritation
 D. promote conduction
 C
37. The butterfly electrode is used to treat:
 A. sinusitis
 B. diabetes
 C. phlebitis
 D. fractures
 E. bursitis
 A
38. The physiological effect of pulsed ultrasound is increased:
 A. vasodilation
 B. vasoconstriction
 C. fibrositic density
 D. orthostatic density
 B
39. Which is a contraindication for the use of ultrasound:
 A. bursitis
 B. anesthesia
 C. tennis elbow
 D. osteoarthritis
 E. scar tissue
 B
40. Ultrasound is contraindicated for:
 A. herpes zoster
 B. spondylitis
 C. Raynauds disease
 D. uveitis
 D
41. Shortwave diathermy is contraindicated for a/an:
 A. tubercular joint
 B. ofilis media
 C. advanced osteoporosis
 D. large varicosities
 E. all of the above
 E
42. The modality of choice for pneumonitis:
 A. shortwave diathermy
 B. ultrasound
 C. negative galvanism
 D. positive galvanism
 E. sine wave
 A
43. During the application of underwater ultrasound the transducers are maintained at a distance of inches from the part being treated:
 A. 1/2-1
 B. 3-4
 C. 5-6
 D. 6-8
 A
44. Which condition is contraindicated for shortwave diathermy treatment:
 A. neuralgia
 B. meralgia
 C. sinusitis
 D. phlebitis
 D
45. The best conducting medium for ultrasound is:
 A. mineral oil
 B. dioxotrophic gel
 C. air
 D. water
 D
46. When receiving an ice massage sensation is received in which sequence:
 A. burning, aching, numbness, cold
 B. numbness, aching, burning, cold
 C. aching, cold, burning, numbness
 D. cold, burning, aching, numbness
 D
47. Cryotherapy is contraindicated for:
 A. neoplastic disease
 B. chronic Rheumatoid arthritis
 C. peripheral vascular disease
 D. myositis ossificans
 C
48. The treatment of choice for the pain accompanying acute grade one ankle sprain:
 A. short diathermy
 B. continuous US
 C. immobilization
 D. spray and stretch
 C
49. The modality of choice for a 40 year-old male with a 2 hour post traumatic cervical hyperflexion/hyperextension injury which has produced muscle spasm, loss of range of motion and complicated by a suture for a laceration:
 A. cryotherapy
 B. continuous ultrasound
 C. hot and cold contrast
 D. low volt galvanism
 E. intermittent traction
 A
50. The treatment of choice for acute inflammation of the trochanteric bursa is:
 A. active massage
 B. negative galvanism
 C. infrared
 D. Ice packs
 D
51. The woods lamp assists in the diagnosis of:
 A. Lupus erythematosus
 B. fungal infections
 C. hyperkalemia
 D. dermatosis pigmentosum
 B
52. A contraindication of whole body UV is:
 A. psoriasis
 B. patent taking Vitamin D
 C. patient taking tetracycline
 D. extreme generalized osteoporosis
 C
53. A minimal erythmal dose determined by the patch test is equivalent to _ grade erythema:
 A. 1
 B. 2
 C. 3
 D. 4
 A
54. The primary therapeutic effect of orificial UV is:
 A. bactericidal
 B. diagnostic
 C. anti-arthritis
 D. pigment
 A
55. Which Is not an effect of interferential current:
 A. superficial heating
 B. skeletal muscle contraction
 C. pain reduction
 D. smooth muscle relaxant
 A

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56. Denervated muscle is most effectively stimulated by which current:
 A. sine wave
 B. altered heat
 C. low voltage direct
 D. high voltage monophasic
 E. interferential
 C
57. Which sine wave setting is used to decrease muscle spasms
 A. tetanizing
 B. pulsing
 C. reciprocation
 D. automatic surging
 E. surging
 A
58. A 60 year-old female fell on her knee 6 months ago and presently has pain. Knee examination is unremarkable. EMG findings reveal decreased electrical activity during resisted knee extension. Which therapy is indicated:
 A. infrared
 B. pulsed ultrasound
 C. continuous ultrasound
 D. electrical muscle stimulation
 D
59. High voltage galvanism is contraindicated for:
 A. epicondylitis
 B. herpes zoster
 C. Raynauds disease
 D. cardiac arrhythmia
 D
60. High voltage galvanism is not used for:
 A. iontophoresis
 B. tissue repair
 C. spasticity reduction
 D. electro-anesthesia
 E. circulation enhancement
 A
61. What is the dosage for low volt galvanism:
 A. 1 milliamperes per square inch of electrode
 B. 2 watts per square inch of electrode
 C. patient tolerance
 D. 1 watts per square inch of electrode
 A
62. A 33-year-old woman with cystitis experiencing suprapubic immediate pain at the end of urination. The best treatment is:
 A. short wave diathermy over the kidneys
 B. ultrasound over sacrum and suprapubic area
 C. microwave diathermy over suprapubic area
 D. interferential current over pubic area and lower abdomen
 C
63. In the treatment of post surgical pain with a battery powered TENS unit the electrode should be placed:
 A. as close to the incision as possible
 B. contralateral to the incision
 C. distal to the incision
 D. on the Incision
 B
64. Which modes of high voltage pulse direct current is indicated as adjunctive therapy is indicated to increase ROM:
 A. continuous
 B. surging
 C. reciprocating
 D. pulsing
 B
65. Which type of feedback is best for the treatment of essential hypertension:
 A. galvanic skin
 B. electroencephalogram
 C. temperature
 D. electromyogram
 A
66. TENS therapy is least effective in the treatment of ____ pain:
 A. malignancy
 B. fracture
 C. psychogenic
 D. myofacial
 A
67. To enhance the effectiveness of high voltage galvanism when treating chronic paraspinal muscle spasms ____ is used:
 A. sandbag for electrode stabilization
 B. hydrocollator pack
 C. ice pack
 D. velcro elastic strap
 E. electric heating pad
 B
68. Which method of Interferential is contraindicated for acute ankle edema:
 A. vacuum electrode pads
 B. eadogenous electrode pads
 C. self-adhesive pads
 D. plate electrode pads
 A
70. Interferential current is used for which effect:
 A. edema reduction
 B. lymphatic flow
 C. muscle re-education
 D. analgesia
 A
71. Which is inappropriate in the use of high voltage galvanic:
 A. can be used in combination with ultrasound
 B. can be used on trigger points with appropriate action
 C. can be used with metal implants or a pacemaker
 D. can be used for endorphin production and pain control
 C
72. Hyperstimulation analgesia affects which neurological fibers:
 A. C fibers
 B. large A
 C. type I
 D. lower motor neuron
 B
72. When 2 pads of unequal size are used in the application of direct current what describes the activity of the smaller pad:
 A. less active
 B. more active
 C. neutral
 D. disburive
 B
73. A Lenox hill derotation brace is used to stabilize a knee with a weak:
 A. medial meniscus
 B. medial collateral
 C. posterior cruciate
 D. anterior cruciate
 D
74. Which is a contraindication to spinal traction:
 A. paravertebral muscle spasm
 B. spinal adhesions
 C. infectious arthrosis
 D. recurrent subluxation
 E. scoliosis
 C
75. What is a contraindication for using inversion therapy:
 A. hypertension
 B. constipation
 C. discogenic spondylosis
 D. nodules in the hands
 A
76. Massage to reduce edema should be done:
 A. toward the muscle fibers
 B. along fascial planes
 C. across the muscle fibers
 D. along venous drainage
 E. following arterial circulation
 D
77. An elastic support to heal patella malalignment syndrome should provide pressure in which direction:
 A. lateral to medial
 B. medial to lateral
 C. superior to inferior
 D. Inferior to superior
 A
78. Intermittent lumbar traction is indicated in which patient:
 A. 45 year old female weighing 250 lbs with facet syndrome and increased sacral base angle
 B. 30 year old man with acute lumbar disc protrusion causing antalgia, foot drop, positive Valsalva and Soto-Hall
 C. 35 year old female with monthly low back pain and anterior costal column pseudoarthrosis
 D. 65 year old female with low back spasm and angular dorsal kyphosis
 B
79. What is an effect of high frequency therapy:
 A. edema reduction
 B. analgesic
 C. postural change
 D. hypo-myotonia
 B
80. What is not a therapeutic effect of massage:
 A. relief of pain
 B. capsular swelling
 C. Increased muscle strength
 D. increased venous return
 E. mobilization of contracted tissue
 C

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81. The function of a dynamic splint is to:
 A. prevent joint movement
 B. reduce incoordination
 C. minimize muscle balance
 D. maximize exercise capabilities
 D
82. Which massage is mainly used for postural drainage of lung field
 A. effleurage
 B. petrissage
 C. friction
 D. tapotement
 D
83. _____ is not an effect of spinal bracing:
 A. increase segmental motion above and below the area braced
 B. increased intra-discal pressure
 C. decreased abdominal muscle activity
 D. decreased lower extremity venous return
 D
84. The warm down phase of aerobic exercise is important to prevent
 A. heat stroke
 B. heat exhaustion
 C. heart attack
 D. sprain
 B
85. After strenuous exercise the content of muscle is reduced and the concentration in the blood rises:
 A. glycogen; lactic acid
 B. protein; ketones
 C. oxygen; glucose
 D. fat; glycogen
 A
86. What types of exercises causes the greatest increase in heart rate:
 A. active isotonic
 B. active Isometric
 C. active assistive
 D. passive
 A
87. To maintain the maximum benefit, aerobic exercise should be done a minimum of _____ times per week.
 A. 2
 B. 3
 C. 4
 D. 5
 B
88. What is the primary physiological effect of passive exercise:
 A. increased arterial flow
 B. increased respiration
 C. disburse joint adhesions
 D. improve nerve tone
 C
89. What muscle should be given priority when initiating a stretch program for compensatory foot pronation:
 A. hamstrings
 B. quadriceps
 C. ankle plantar flexors
 D. ankle dorsiflexors
 C
90. Which is the knee exercise of choice for patellar femoral pain and vastus medius weakness:
 A. full range isotonic extension
 B. isometric extension at 90° of flexion
 C. Isometric extension only to the last 30°
 D. full range isometric flexion
 B
91. William's flexion exercises are used to rehabilitate the:
 A. cervical
 B. thoracic
 C. lumbar hip
 C
92. Posterior pelvic tilt performed actively while supine will the lumbar lordosis and strengthen the _____ muscles.
 A. increase abdominal
 B. increased erector spinae
 C. decreased abdominal
 D. decreased erector spinae
 C
- *****
1. A muscle that can move a segment through its range of motion against gravity and hold the segment at the end of its range of motion against resistance is graded:
 A. 1 trace
 B. 2 poor
 C. 3 fair
 D. 4 good
 E. 5 normal
 E
2. Is not a secondary physiological effect of short wave diathermy:
 A. increased metabolism
 B. sedation
 C. attenuation of micro organisms
 D. polarity
 E. hyperemia
 D
3. A patient with an acute muscle spasm or acute disc lesion should not be treated with:
 A. high volt galvanism
 B. interferential
 C. cryotherapy
 D. dry heating pad
 D
4. The best therapy for subdeltoid bursitis is:
 A. shoulder ladder exercises
 B. rest
 C. ice packs
 D. hot packs
 E. active range of motion exercises
 B
5. To treat , low voltage therapy which produces muscle contraction is most useful:
 A. skin lesions
 B. disuse atrophy
 C. spasticity
 D. hypertonicity
 E. fractures
 B
6. When there is no reaction of degeneration, how many weeks will it take to recover from a peripheral nerve lesion:
 A. 4-8
 B. 8-20
 C. 20-40
 D. 40-60
 A
7. During ice massage therapy, the patient will experience the following sequence of sensations:
 A. coolness, burning, numbness, aching pain
 B. coolness, burning, aching pain, numbness
 C. coolness, aching pain, numbness, burning
 D. coolness, aching pain, burning, numbness
 E. burning, aching pain, coolness, numbness
 B
8. The modality associated with deep heat penetration is:
 A. ultraviolet
 B. infrared
 C. hydrocollator packs
 D. microwave diathermy
 E. high voltage galvanism
 D
9. Continuous sinusoidal current decreases:
 A. muscle spasm
 B. sensitivity to pain
 C. metabolic flow
 D. elasticity of ligaments
 A
10. Electrical stimulation of 4 hertz can cause the production of which of the following:
 A. prostaglandins
 B. bradykinin
 C. endogenous opiates
 D. dihydroxytryptamine
 E. serotonin
 C
11. Research using dorsal column stimulation as a means of pain control led to the development of which modality:
 A. ultrasound
 B. galvanism
 C. short wave diathermy
 D. TENS
 E. sinusoidal current
 D
12. When you apply a direct current to a partially denervated muscle which response can be expected:
 A. tetanizing contraction
 B. rapid break contraction
 C. slow vermicular contraction
 D. diminished contraction
 C
13. An acute disc protrusion with pain due to muscle spasm can benefit most from which modality:
 A. microwave diathermy
 B. hot moist pads
 C. high volt galvanism
 D. ultrasound
 E. shortwave diathermy
 C

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14. A contraindication to shortwave diathermy is:
 A. ankylosing spondylitis
 B. myofascitis
 C. acute osteomyelitis
 D. traumatic arthritis
 C
15. The best angle of pull for cervical traction with the neck in flexion is:
 A. 4-6°
 B. 11-15°
 C. 20-30°
 D. 35-45°
 E. 50-60°
 C
16. When the patient complains of a sharp burning or aching feeling when using direct contact ultrasound is due to:
 A. skin overdose
 B. cavitation
 C. periosteal shear wave
 D. improper conduction medium
 C
17. Neuromuscular skeletal underwater exercises are usually performed in a:
 A. Hubbard tank
 B. sitz bath
 C. contrast bath
 D. sulfur bath
 E. deprivation tank
 A
18. The modality capable of directly heating the hip joint is:
 A. paraffin bath
 B. ultrasound
 C. luminous infrared
 D. hot moist packs
 E. galvanism
 D
19. The best description of interferential current is:
 A. maximum frequency
 B. medium frequency
 C. low frequency
 D. high frequency
 E. galvanic
 B
20. In which of the following are passive exercises contraindicated:
 A. rheumatoid arthritis
 B. fibrous ankylosis
 C. Acute tuberculosis
 D. chronic sprain
 E. contraction
 C
21. Which therapy is most therapeutic with patients who have calcium deficiencies:
 A. infrared
 B. diathermy
 C. low volt
 D. ultrasound
 E. ultraviolet
 E
22. To elevate tissue temperature with a high frequency electric field you would employ which modality:
 A. ultrasound
 B. infrared
 C. galvanism
 D. diathermy
 E. ultraviolet
 D
23. Erythema ab igne is caused by overexposure to:
 A. ultraviolet
 B. microwave
 C. faradic
 D. ultrasound
 E. infrared
 E
24. Shortwave diathermy is indicated in which of the following:
 A. acute ligamentous sprain of the ankle
 B. desensitized areas of the upper extremity
 C. the chest in a patient with pneumonia
 D. vascular impaired areas of the lower extremity
 C
25. The following is not a therapy in a case of spondylolisthesis:
 A. hot packs
 B. shortwave diathermy
 C. limb flexion exercises
 D. exercises to strengthen the hamstrings
 E. exercises to strengthen the iliopsoas
 E
26. To treat adhesions the modality of choice is:
 a. ultrasound
 B. ultraviolet
 C. microwave diathermy
 D. infrared
 E. shortwave diathermy
 A
27. The best modality to treat the residual edema in a subacute wrist sprain is:
 A. infrared
 B. paraffin baths
 C. contrast baths
 D. ice massage
 E. ultraviolet
 C
28. The modality of choice for chronic adhesive capsulitis is:
 A. ultrasound
 B. infrared
 C. ultraviolet
 D. low volt galvanism
 E. condensor pad diathermy
 A
29. Muscle contraction produced electrically by low voltage stimulation is very helpful in the treatment of:
 A. contusions
 B. arthritis
 C. phlebitis
 D. myofascitis
 E. gout
 D
30. Passive movement is used for which of the following:
 A. to enhance muscle strength
 B. to decrease muscle strength
 C. to maintain joint range of motion
 D. to improve circulation
 C
31. Median nerve paralysis causes a problem with which of the following:
 A. forearm extension
 B. thumb extension
 C. little finger abduction
 D. thumb opposition
 E. arm abduction
 D
32. When using galvanic current, which effect will be found at the positive pole:
 A. vasodilation
 B. stimulation
 C. softening of scars
 D. alkaline reaction
 e. relief of pain
 E
33. With what are tungsten and carbon filaments associated:
 A. galvanism
 B. diathermy
 C. ultrasound
 D. microwave
 B
34. A contraindication to ultrasound is:
 A. herpes zoster
 B. acute rheumatoid arthritis
 C. osteoarthritis
 D. tendonitis
 E. muscle spasm
 B
35. Tetanic currents are produced by:
 A. shortwave diathermy
 B. microwave
 C. faradic
 D. smooth galvanic
 C
36. Which therapy is Indicted for ligamentous sprain:
 A. isokinetic
 B. active resistive
 C. isometric
 D. passive
 B
37. Hot moist packs are contraindicated in:
 A. chronic sprain
 B. sinusitis
 C. chronic tendonitis
 D. diabetic ulceration
 D
38. What is the correct temperature of a sitz bath in the treatment of hemorrhoids:
 A. 80-93
 B. 93-97
 C. 98-104
 D. 105-115
 E. 115-120
 C
39. The best treatment for pain caused by herpes zoster is:
 A. infrared
 B. ultrasound
 C. massage
 D. cold packs
 E. shortwave diathermy
 B

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40. Atony of the colon is best treated with:
A. ultrasound
B. sine wave
C. negative galvanism
D. positive galvanism
E. ultraviolet
B
41. What type of exercise is described: resistance is maximal throughout the entire range of motion:
A. isometric
B. isotonic
C. isokinetic
D. isolation
E. eccentric
C
42. Underwater exercise is not indicated for which condition:
A. Bells palsy
B. poliomyelitis
C. polyneuritis
D. paraplegia
A
43. How long after an injury does adhesion formation begin:
A. 24 hours
B. 5 days
C. 2 weeks
D. 1 month
A
44. Electrokinetic effects are produced by which of the following:
A. shortwave diathermy
B. microwave diathermy
C. ultraviolet
D. faradic current
E. uninterrupted galvanic current
E
45. Whirlpool treatment is not contraindicated in patient with:
A. burns
B. diabetic neuropathies
C. fever
D. hydrophobia
A
46. To insure the therapeutic effect of an ultrasound in a water bath you would:
A. increase the wattage
B. decrease the wattage
C. leave the wattage the same
D. heat the water
47. What is responsible for the deep heat produced by shortwave diathermy:
A. conduction
B. radiation
C. relative refractory period
D. tissue resistance
E. polarity effect
D
48. Why is luminous infrared better than hot moist packs when you want to relax a muscle spasm:
A. greater depth of penetration
B. can be applied directly to the skin
C. less chance of burning patient
D. can be applied over patients clothing
D
49. Which is true of bath water temperature:
A. warm baths tend to decrease heart rate and length of diastole
B. warm baths tend to increase muscle tone
C. cold baths increase the rate of nerve impulses
D. cold baths cause peripheral vasodilation
cold baths of short duration increase muscle tone and energy
E
50. The wood's lamp is helpful in the diagnosis of all of the following except:
A. lupus erythematosus
B. ringworm
C. skin rash of syphilis
D. pre-cancerous skin lesion
E. fungus
D
51. Rapid gain in muscle strength can be accomplished in disuse atrophy by utilizing resistive raining:
A. isometric
B. repetition
C. speed
D. isotonic
B
52. In which range of scoliosis does one generally employ a Milwaukee brace:
A. 13-20°
B. 20-40°
C. 50-60°
D. 60-80°
B
53. In the primary treatment of an acute severe hyperflexion-hyperextension injury, in addition to ice which modality is used:
A. Intermittent traction
B. continuous ultrasound
C. cervical immobilization
D. faradic current
E. negative galvanism
C
54. When treating a patient with low back strain, the modality chosen should be given careful consideration when the patient:
A. is pregnant
B. has osteoarthritis
C. has facet syndrome
D. has spondylolisthesis
E. has diverticulitis
A
55. Interferential current is the superimposition of with resulting interference:
A. 2 faradic currents
B. 1 direct current and one alternating current
C. one high frequency current and one low frequency current
D. two direct currents
E. two sinusoidal currents
E
56. In which of the following are whirlpool treatments contraindicated:
1. peripheral nerve injuries
2. chronic arthritis
3. acute open fracture
4. advanced circulatory disturbance
A. 1
B. 1,2
C. 3, 4
D. 2,3,4
E. 1,2,3,4
C
57. What produces the thermal effect of ultrasound:
A. alteration of pH
B. rectified selective diffusion
C. conversion of kinetic energy into heat
D. pressure gradations from dynamic pressure variations
E. conversion of electrical energy into mechanical energy
E
58. The best temperature for paraffin is:
A. 98°
B. 105°
C. 125°
D. 140°
E. 145°
C
59. Cryokinetics are thought to be especially effective for the treatment of:
A. dislocations
B. phlebitis
C. fractures
D. acute strains
E. high fevers
D
60. Cold quartz official ultraviolet irradiation is indicated to treat:
A. vaginal herpes simplex
B. venereal warts
C. Trichomonas vaginalis
D. Candida albicans
D
61. The best modality to force a muscle into relaxation is:
A. pulsating sinusoidal current
B. faradic current
C. tetanizing sinusoidal current
D. sine wave current
C
62. To rehabilitate a meniscal knee injury which exercise should be employed first:
A. quadriceps extension with a weight boot
B. deep knee bends
C. straight leg raising
D. half squats
E. isometric quadriceps sitting
E
63. The greatest increase in heart rate is produced by which exercise:
A. active isotonic
B. active isometric
C. passive
D. active assisted
A

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64. In a patient with lumbar disc pathology, it is important to eliminate or limit as part of their occupational activity:
- lifting
 - walking
 - squatting
 - standing
- ***A***
65. What is the temperature of the water in which hot moist packs are stored:
- 98
 - 104
 - 125
 - 165
 - 210
- ***D***
66. Ultrasound is indicated for:
- dyshidrosis
 - thrombosis
 - phlebitis
 - neuroma
 - arteriosclerosis
- ***D***
67. Which modality can reduce serum glucose levels, is bacteriocidal and produces erythema:
- diathermy
 - whirlpool
 - ultrasound
 - infrared
 - ultraviolet
- ***E***
68. Paraffin baths are best used to treat:
- arthritis in the hands
 - muscle spasms in the legs
 - lumbar strain
 - temporary paralysis
 - foot ulcerations
- ***A***
69. The treatment of choice for PID is:
- infrared
 - ultrasound
 - galvanic
 - diathermy
 - ultraviolet
- ***D***
70. Which is not a characteristic of high voltage galvanism:
- it uses 2 4000 Hz current
 - it utilizes spiked current
 - it involves 500 V electricity
 - it exhibits polarity
 - it requires the use of a large indifferent pad
- ***A***
71. What is the best treatment for a 13 year old female who complains of pain on the front of the left patella and has a history of falling on her knee 6 months previously. On examination there are no gross abnormalities of the tibiofemoral joint. EMG shows a subclinical deficit in the vastus medialis muscle. The best treatment would be:
- iontophoresis
 - faradic stimulation
 - direct ultrasound
 - TENS
- ***B***
72. To provide stability to a knee that has undergone unsuccessful repair of the anterior and posterior cruciate ligaments and medial collateral ligament, the best appliance would be which of the following:
- Lertox Hill brace
 - Bauer Black support
 - Shultz Osgood Schlatter brace
 - McDavid Argyll brace
 - thermal sleeve support
- ***A***
73. The most important reason to use a brace in scoliosis is to:
- inhibit greater progression of the curve
 - return the curvature to normal
 - retard the growth process causing greater muscular tonicity
 - improve self image
 - reduce patient discomfort and improve cosmetics
- ***A***
74. The Kromayer lamp is used with:
- diathermy
 - ultrasound
 - microwave
 - ultraviolet
- ***D***
75. What theory is behind the control of pain using high frequency 100-200 hertz TENS:
- Specificity theory
 - Summation theory
 - Faraday's theory
 - Gate-control theory
 - Electrical theory
- ***D***
76. Ultraviolet is indicated for:
- systemic lupus
 - rickets
 - hyperthyroidism
 - renal insufficiency
- ***B***
77. What is the primary effect of galvanic current:
- photochemical
 - electromechanical
 - kinetic
 - electrochemical
 - electrothermal
- ***D***
78. Which modality transmits heat by conduction:
- hot moist packs
 - infrared
 - diathermy
 - ultrasound
 - microwave
- ***A***
79. The best treatment for spasm of a ureter due to a calculus or trauma is:
- ultraviolet
 - diathermy
 - cryotherapy
 - infrared
 - positive galvanism
- ***E***
80. Facial neuralgia is best treated with which modality:
- galvanism
 - ultraviolet
 - diathermy
 - tapotement
 - hot packs
- ***A***
81. The best treatment for lymphedema which follows a mastectomy is:
- moist hot packs
 - massage
 - microwave diathermy
 - cryotherapy
 - shortwave diathermy
- ***B***
82. In an acute moderate cervical hyperflexion injury with no instability noted on a lateral cervical flexion x-ray, which orthopedic support is indicated:
- hard cervical collar
 - halo cervical brace
 - soft cervical collar
 - poster cervical brace
- ***C***
83. The Louisiana wrap is most appropriate for:
- ligament damage to the knee
 - tenosynovitis of the wrist
 - ankle sprain
 - uncomplicated shoulder dislocation
 - carpal fracture
- ***C***
84. On an x-ray study you note a compression fracture of the body of L-1. Which orthotic should be applied:
- Taylor hyperextension brace
 - body cast
 - lumbosacral corset
 - chair back brace
 - Williams flexion brace
- ***D***
85. Transformation of one form of heat energy into another results in the transmission of heat due to:
- conversion
 - radiation
 - convection
 - reflection
 - conduction
- ***A***
86. What is the activity of the small pad when two pads of unequal size are used in the application of direct current:
- less active
 - neutral
 - more active
 - disbursive
- ***C***

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87. Ultraviolet treatment is contraindicated for diabetes mellitus because it:
- A. may exacerbate the condition
 - B. may cause itching
 - C. will effect insulin balance
 - D. will aggravate neuropathies
- ***A***
88. The modality that dehydrates tissue, stops bleeding and attracts oxygen is:
- A. positive galvanic
 - B. negative galvanic
 - C. faradic current
 - D. sinusoidal current
 - E. microwave diathermy
- ***A***
89. A physiological effect of cryotherapy is:
- A. decreased acute pain and muscle spasm
 - B. increased capillary permeability
 - C. decreased muscle stiffness
 - D. increased bleeding time due to trauma
 - E. increased nerve irritability and conduction
- ***A***
90. The preferred treatment for lung congestion is:
- A. infrared
 - B. ultrasound
 - C. diathermy
 - D. hot moist packs
 - E. ultraviolet
- ***C***
91. What is the strength of the solution used in iontophoresis:
- A. .25
 - B. .50
 - C. 1-2
 - D. 3-4
 - E. 5-6
- ***C***
92. Deep kneading in massage is known
- A. effleurage
 - B. petrissage
 - C. tapotement
 - D. stroking
 - E. percussion
- ***B***
93. A young female with low back pain, hyperlordosis and weak abdominal muscles should be instructed not to do exercises:
- A. pelvic tilt
 - B. partial sit-up
 - C. knee to chest stretches
 - D. lumbar extension
- ***D***
94. Vibration to assist in postural drainage should be applied after percussion and during:
- A. quiet inspiration
 - B. quiet expiration
 - C. forced expiration
 - D. forced inspiration
- ***C***
95. To immobilize or support anatomical structures, static orthotics generally involve a ___ point system:
- A. 1
 - B. 2
 - C. 3
 - D. 4
 - E. 6
- ***C***
96. To treat using minimal erythema dose which modality is employed:
- A. ultraviolet
 - B. diathermy
 - C. cryotherapy
 - D. infrared
 - E. hydrotherapy
- ***A***
97. can be used for diagnosis:
- A. ultraviolet
 - B. microwave
 - C. traction
 - D. shortwave diathermy
 - E. near infrared
- ***A***
98. The most effective weight for lumbar traction is:
- A. 10-40
 - B. 40-50
 - C. 60-120
 - D. 120-140
- ***C***
99. When used in the treatment of scoliosis, the Milwaukee brace is an example of which type of orthosis:
- A. 3 point fixation
 - B. distraction
 - C. fluid compression
 - D. sleeve
 - E. skeletal fixation
- ***B***

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The answers for the following questions can be found on page 26

1. What is the physical difference, not the clinical difference, between short wave diathermy and micro-wave diathermy;
 - a. type of energy used
 - b. duration applied
 - c. mode of action
 - d. number of megacycles
 - e. number of watts/cm²
2. Ultrasound, shortwave diathermy and microwave diathermy use the following electrical energy (in order of units mentioned):
 - a. 21 megacycles, 2450 megacycles, 1 megacycle
 - b. 1 megacycle, 27 megacycles, 2450 megacycles
 - c. 70 megacycles, 2450 megacycles, 345 megacycles
 - d. 2450 megacycles, 27 megacycles, 1 megacycle
 - e. 1 megacycle, 10 megacycles, 100 megacycles
3. The substance found in hot moist pads which absorbs heat from water, and retains this heat for up to half an hour, is;
 - a. magnesium sulfate
 - b. copper sulfate
 - c. heavy water (H₂O)
 - d. aluminum oxide
 - e. silica gel
4. Low frequency denotes;
 - a. 50,000 frequencies/sec.
 - b. above 30,000 frequencies/
 - c. above 10,000 frequencies/Sec.
 - d. below 10,000 frequencies/sec.
 - e. between 10,000-30,000 frequencies/sec.
5. Which two physiotherapy units work by introducing an electrical current into the body;
 - a. ultrasound and galvanism
 - b. diathermy and ultrasound
 - c. galvanism and sinusoidal
 - d. diathermy AND sinusoidal
 - e. infrared and ultrasound
6. The exchange of heat between a surface and a fluid moving past the surface is called;
 - a. conversion
 - b. conduction
 - c. convection
 - d. radiation
 - e. condensation
7. Identify the treatment that would make a muscle weak or force it into relaxation:
 - a. microwave diathermy
 - b. tetanizing sinusoidal current
 - c. traction
 - d. infrared
 - e. pulsating sinusoidal current:
8. When applying ultrasound to any extremity, such as the foot, the part must be immersed in water because:
 - a. water is a better transfer media
 - b. when applied over an uneven surface, ultrasound may be absorbed more easily by the body prominences and overheat them: water prevents this overheating.
 - c. water will allow ultrasound to penetrate more deeply into the tissues
 - d. water acts as a method of relaxing the foot muscles allowing the ultrasound to be more effective
 - e. the foot should not be immersed in water; ultrasound to the foot should be performed like ultrasound to the trunk or gluteals
9. What is the effect of "making or breaking" a galvanic current:
 - a. muscle will contract
 - b. a blister is formed
 - c. hyperemia develops
 - d. blanching is present
 - e. no effect
10. When applying cervical traction:
 - a. use over 80 pounds of traction
 - b. pull mostly with the chin strap
 - c. pull mostly with the occipital strap
 - d. one must always strap down the legs
 - e. never adjust in traction
11. Which of the following substances would be used with negative iontophoresis:
 - a. potassium
 - b. iodine
 - c. copper
 - d. sodium
 - e. zinc
12. Which of the following is the media used for transfer of galvanic or sinusoidal currents?
 - a. cream or lotion
 - b. air
 - c. special electrical gel such as for electromyography
 - d. water
 - e. solution of magnesium sulfate
13. Which of the following choices offers the best rule of thumb for exposure with close contact to a surface in localized heating?
 - a. 115 F for 45 minutes
 - b. 55 C for 45 minutes
 - c. 125 F for 30 minutes
 - d. 30 C for 30 minutes
 - e. 45 C for 30 minutes
14. The most commonly useful range of ultrasound is:
 - a. 5.0-10.0 watts/cm
 - b. 0.5-2.0 watts/cm
 - c. 0.1-0.5 watts/cm
 - d. over 10.0 volts/ca.
 - e. 0.5-1.5 volts/cm.
15. Which body tissue absorbs ultrasound most readily:
 - a. skin
 - b. bone
 - c. muscle
 - d. fat
 - e. glandular
16. Diathermy works primarily by causing:
 - a. vasodilation of blood vessels
 - b. micromassage
 - c. depolarization of spastic muscles
 - d. expansion of tissue surfaces and planes
 - e. chemically changing tissue it passes through
17. Which is a common form of heat therapy:
 - a. diathermy
 - b. + galvanism
 - c. sinusoidal current
 - d. petrissage
 - e. ultraviolet
18. What is the functional response of the human body to positive galvanism-the positive pole?
 - a. causes hyperemia
 - b. increases oxygen content
 - c. causes bleeding
 - d. causes sedation
 - e. softens scar tissue
19. Ultrasound may penetrate tissues as far as;
 - a. 1/2 inch
 - b. 10 mm
 - c. 1-10 mm
 - d. 2 inches
 - e. 3/4-1 inch
20. Galvanism has its most direct effect upon what part of man's anatomy:
 - a. muscle
 - b. bone
 - c. nerve
 - d. fat
 - e. blood vessel
21. Microwave energy is similar to the electromagnetic waves of;
 - a. radio
 - b. radar
 - c. hertzian wave
 - d. television
 - e. gamma rays
22. Which of the following pairs are not similar?
 - a. galvanism and sinusoidal current
 - b. short-wave diathermy and microwave diathermy
 - c. infrared and ultraviolet
 - d. hot packs and cold packs
 - e. ultrasound and active exercise
23. The velocity of peripheral nerve conduction is decreased m/sec/degree centigrade of cooling:
 - a. 10.0
 - b. 5.5
 - c. 2.4
 - d. 0.5
24. In cryotherapy, the decreased tendency for edema formation and lymph production is from:
 - a. vasoconstriction
 - b. vasodilation
 - c. vasolibility
 - d. vasospasm
25. When heat is applied to a nerve, the conductivity of the nerve is:
 - a. abolished
 - b. decreased
 - c. increased
 - d. not affected
 - e. dampened

Physiotherapy

26. A calcium-phosphorus deficiency would respond best to
- diathermy
 - infrared therapy
 - low voltage
 - ultrasound
 - ultraviolet therapy
27. Which of the following is not a physiologic effect of local heating?
- increase local metabolic rate
 - arteriolar dilatation
 - decreased phagocytosis
 - increased capillary blood flow
 - increase in capillary hydrostatic pressure
28. Which of the following is the correct order in which man will react to cryotherapy?
- loss of motor power, pain, gross pressure, cold, light touch
 - loss of light touch and cold, motor power, pain and gross pressure
 - loss of pain, light touch, motor power, gross pressure, cold
 - loss of light touch, cold, pain, gross pressure, motor power
 - loss of light touch, gross pressure, motor power, cold, pain
29. In near infrared, it is estimated that the maximal effect on arterial circulation is not attained in less than
- 10 minutes
 - 5 minutes
 - 35 minutes
 - 20 minutes
 - 45 minutes
30. How is heat developed in paraffin baths transmitted:
- conduction
 - convection
 - radiation
 - convergence
 - accumulation
31. What are periodic bursts of vasodilation that occur when a member is immersed in a mixture of ice and water called:
- Helling's reaction
 - Becterev's reaction
 - Lewis reaction
 - Wilson's reaction
 - Hunting's reaction
32. Which is not a contraindication for diathermy:
- bursitis
 - non-draining abscess
 - a condition where there is a tendency to hemorrhage
 - pregnancy
 - peptic ulcer
33. Which of the following is a contraindication to ultrasound?
- osteoarthritis
 - tennis elbow
 - anesthesia
 - fibrositis
 - sinusitis
34. Almost any acute condition requires all but one of the following:
- rest for the part
 - cold applications
 - diathermy
 - restriction of motion
 - follow-up care
35. Active exercise is contraindicated in
- chronic bursitis
 - a chronic muscle strain
 - cases of possible hemorrhage
 - recovery stage of myocardial infarct
 - pregnancy
36. Massage is contraindicated over;
- hypertrophied heart
 - peptic ulcer
 - muscle strain
 - colon in constipated cases
 - distended, but not inflamed veins
37. One of the most important contraindications to lumbar traction is:
- size of the patient; if too large
 - hyperlordosis of the lumbar spine
 - chronic muscle spasm
 - osteoporosis, especially of the ribs
 - hypomobility of the lumbar spine
38. Which of the following physiotherapy machines might be best used for carbuncles, bounds and infected ulcers?
- ultraviolet radiation
 - ultrasound
 - diathermy
 - galvanism
 - infrared
39. Traction is contraindicated in which of the following conditions?
- hypertension
 - degenerative joint disease of the spine
 - spinal headaches
 - muscle spasm
 - hyperlordosis of the lumbar spine
40. The use of which modality is best suited for relieving lung congestion:
- hot moist packs
 - ultrasound
 - infrared
 - diathermy
 - any form of dry heat
41. In which of the following conditions would localized heating be contraindicated:
- Quinke's disease
 - Hirschprung's disease
 - Lesch-Nyhan Syndrome
 - Von Economo's disease
 - Von Recklinghausen's disease
42. Which of the following would be a detrimental effect of local heating:
- neutrophilic infiltration
 - increased phagocytic activity
 - convective dissipation
 - noninflammatory edema formation
 - increased pulmonary output
43. Which of the following is the method by which the blood vascular system dissipates heat?
- conduction
 - conversion
 - radiation
 - condensation
 - convection
44. Which of the following is not a contraindication for
- hypertension
 - evidence of cord pressure
 - to stimulate the proprioceptive mechanism
 - malignancy
 - pregnancy
45. Indications for local cooling include all but which of the following
- extravasation of blood and lymph
 - reduced pain
 - reduced spasticity
 - reduced viability
46. Cervical traction is not indicated in.
- arthritic conditions
 - cervical disc injuries
 - heart disease
 - migraine headaches
 - whiplash
47. Radiculitis might best be treated with:
- diathermy
 - + galvanism
 - hot moist packs
 - galvanism
 - passive exercise
48. One of the most effective methods for treating fractures combines both heat and massage: which modality would do the best job?
- infrared
 - whirlpool bath
 - diathermy
 - traction
 - petrissage
49. Ethyl chloride is:
- used internally
 - used to control pain
 - used to stop infection
 - used to stop bleeding
 - always used on an open wound
50. In acute conditions involving sprains and strains, only one of the following should be used:
- iontophoresis
 - infrared
 - ultrasound
 - diathermy
 - cold packs
51. When treating a sciatic or any neuralgia with galvanism:
- the positive electrode is placed anywhere over the nerve
 - the negative electrode is over the nerve origin
 - the positive electrode is over the nerve origin
 - it does not matter which electrode is over the nerve
 - the positive electrode will help stimulate the nerve fibers

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52. Low back traction is best applied over a range of:
- 10-40 pounds
 - 60-120 pounds
 - 120-240 pounds
 - 40-50 pounds
 - over 200 pounds
53. Cervical traction should be applied within a range of:
- 20-50 Lbs.
 - 0-20 Lbs.
 - 70-80 Lbs.
 - over 60 Lbs.
 - 40-120 Lbs.
54. Heat applied to a nerve will
- produce muscle contractions in muscle innervated by the nerve
 - increase conductivity
 - not effect the nerve in any way
 - cause momentary loss of conductivity
 - decrease conductivity
55. Which of the following statements concerning braces is true:
- a brace may be kept on as long as it is comfortable
 - braces should only be used in accident cases
 - keep a brace only no longer than necessary to prevent muscle weakness and atrophy
 - a brace should limit all motions of a part
 - a brace is seldom helpful in severe ligamentous damage
56. Which disease state is not benefited by electrical stimulations:
- stroke
 - multiple sclerosis
 - cord damage
 - parkinsonism
 - poliomyelitis
57. Which of he following would least likely be used for treatment of a stroke:
- infrared
 - sinusoidal current
 - ultrasound
 - passive exercises
 - active exercises
58. The use of passive exercise is beneficial in all but which of the following:
- bursitis
 - myofascitis
 - paralysis from CNS lesion
 - acute exacerbation of rheumatoid arthritis
 - chronic recurrent stiffness of osteoarthritis
59. One goes from cold to hot in the treatment of:
- sprains to strains
 - acute disorders to chronic disorders
 - muscle spasm to muscle atonia
 - muscle pulls to shoulder separations
 - abscess formation to prevent formation of scar tissue
60. Massage should always be done:
- without regard to patient tolerance
 - toward the heart if on the extremity
 - under any circumstances
 - with increasing pressure
 - only once
61. Metal implants are a contraindication in which of the following treatments:
- diathermy
 - galvanism
 - sinusoidal currents
 - light therapy
 - ultrasound
62. Fungal infections react best to which modality:
- diathermy (microwave)
 - diathermy (short wave)
 - infrared
 - ultraviolet
 - polarizing effects
63. The range of motion for the elbow in flexion / extension is
- 10 flexion 100 extension
 - 180 flexion 30 extension
 - 104 flexion 15 extension
 - 10 flexion 180 extension
 - 20 flexion 90 extension
64. Which of the following is not one of the six basic determinants of locomotion?
- pelvic rotation and lateral tilting
 - lateral displacement of the pelvis
 - knee ankle interaction
 - knee flexion and hip flexion
 - an increase in the accommodation curves
65. How many tiles during a complete step cycle does the knee reach its maximal extension?
- 1
 - 2
 - 3
 - never
 - none of the above
66. In normal walking, approximately does the pelvis rotate?
- 2
 - 12
 - 8
 - 1
 - 20
67. Where is the center of gravity in an adult?
- just anterior to the second molar
 - just posterior to the seventh dorsal vertebra
 - just anterior to the fourth lumbar vertebra
 - just posterior to the second sacral tubercle
 - just anterior to the second sacral vertebra
68. There are four categories of braces. Which of the following is not one of those categorized?
- supportive
 - corrective
 - protective
 - limitive
 - dynamic
69. A motor unit disease includes those conditions affecting all but which of the following:
- anterior horn cell
 - anterior horn cell axon
 - posterior horn cell
 - the myoneural junction
 - muscle fibers
70. Conditions which regress to complete or nearly complete recovery are considered to be transient Which of the following is in this category?
- amyotrophic lateral sclerosis
 - myasthenia gravis
 - muscular dystrophy
 - acute anterior poliomyelitis
71. A chiropractor would treat amyotrophic lateral sclerosis in which of the following ways?
- ultrasound
 - manipulation
 - trigger points
 - advising therapeutic exercise
 - all of the above
72. What is believed to be the cause of muscular dystrophy?
- a sex linked recessive gene
 - a sex linked dominant gene
 - brain damage
 - traumatic change to the myoneural junction
 - the end result of a chronic infectious disease affecting striated muscle
73. What is the major cause of lumbar scoliosis
- tight abdominal muscles
 - high heels
 - obesity
 - disc damage
 - thoracic gibbus
74. A person having a straight lumbar spine would be helped by
- higher heels
 - arch supports
 - earth shoes
 - sandals
75. A patient with a pronounced lumbar scoliosis would be helped by:
- arch supports
 - higher heels
 - earth shoes
 - Milwaukee brace
 - extension exercises
76. In successful extremity manipulation, which of the following is the better procedure:
- evaluate the spine, adjust if necessary, adjust the extremity, balance the musculature
 - adjust the extremity only
 - adjust the extremity and balance the musculature
 - adjust only the spine and balance the musculature
 - adjust the extremity and adjust the spine at a later date
77. A patient with osteoporosis might be helped by treatment with
- Kinney sacks
 - ultrasound
 - ultraviolet
 - hydrocollator
 - silical gel packs

Physiotherapy

78. What is the approximate range of cervical rotation?
 a. 45-90
 b. 10-45
 c. 80-110
 d. 30-70
 e. 20-40
79. The range of extension and flexion of the cervical column (in order) is:
 a. 45-55
 b. 10-180
 c. 0-90
 d. 90-40
 e. 20-90
80. The degree of lateral bending of the trunk is:
 a. 35
 b. 60
 c. 10
 d. 20
 e. 90
81. The normal range of motion in the knee joint is:
 a. 35-45
 b. 0-90
 c. 10-90
 d. 5-25
 e. 90-30
82. The range of rotation of the trunk is:
 a. 45
 b. 10
 c. 90
 d. 70
 e. 80
83. The normal range of motion in the knee joint is:
 a. 45-180
 b. 10-240
 c. 30-90
 d. 10-go
 e. 180-210
84. In inversion, the normal ankle will have a range of motion of approximately:
 a. 70
 b. 80
 c. 30
 d. 40
 e. 10
85. In eversion, the normal range of motion in the ankle would be approximately:
 a. 5
 b. 15
 c. 300
 d. 40
 e. 25
86. Which of the following is not a method of spinal traction:
 a. oathion
 b. anatomotor
 c. Tong table
 d. spinalator
 e. Nichias table
87. In treating chronic osteoarthritis of the hip, the ultrasound intensity should be _watts:
 a. 1
 b. 5
 c. 1
 d. 2
 e. 5
88. The preferred therapy for chronic adhesive bursitis is
 a. positive galvanism with zinc sulphate
 b. negative galvanism with potassium iodide
 c. diathermy
 d. sine wave
 e. ultrasound
89. Diathermy would be generally contraindicated in
 a. acute cervical sprain
 b. viral pneumonitis
 c. gluteal myofibrosis
 d. spastic colitis
 e. chronic sinusitis
90. The most effective method of removing calcium deposits from a joint bursa is:
 a. infrared heat
 b. moist heat
 c. ultrasound
 d. rest
 e. diathermy
91. t prevent muscle atrophy and maintain muscle tone, which of the following units of physiotherapy would be most effective:
 a. hot moist packs
 b. contrast baths
 c. sinusoidal current
 d. diathermy
 e. ultrasound
92. In case of prostatitis, hemorrhoids and dys-menorrhoea which type of hydrotherapy would be best:
 a. contrast bath
 b. tepid bath
 c. hot sitz bath
 d. cold dressings
 e. cold sitz bath
93. In rheumatoid spondylitis, the objective of the therapeutic exercise program is to:
 a. maintain mobility
 b. maintain spine in an erect position
 c. maintain power in the para-articular musculature
 d. increase osteoclastic production
 e. prevent fractures
94. The use of an intermittent electrical current is found in:
 a. sinusoidal
 b. positive galvanism
 c. negative galvanism
 d. ultrasound
 e. microwave diathermy
95. The best combination in near infrared bulbs is one with a clear glass lens, built in aluminized reflector and a wattage of:
 a. 3,000
 b. 250
 c. 700
 d. 500
 c. 1000
96. Cold quartz lamps make use of to produce ultra violet energy.
 a. carbon
 b. mercury
 c. tile
 d. gold
 e. ceramic
97. X-ray burns are best treated using:
 a. diathermy
 b. ultrasound
 c. cold quartz
 d. low voltage
 e. hot quartz
98. Low doses of ultrasound will affect the vascular system by:
 a. relaxing the vasoconstrictors
 b. raising blood pressure
 c. relaxing parasympathetics
 d. will have no effect
- e. lowering blood temperature
99. The most popular type infrared lamp in use today makes use of:
 a. near infrared
 b. far infrared
 c. quartz
 d. histamine
 e. dermassage
100. Dermatophytosis is treated with ion transfer therapy using:
 a. histamine
 b. sodium chloride
 c. copper sulfate
 d. mustard
 e. tar
101. Erythema that produces a blister from ultraviolet therapy is a:
 a. first degree erythema
 b. second degree erythema
 c. third degree erythema
 d. fourth degree erythema
 e. not erythematous
102. The treatment of choice for impetigo is:
 a. ultraviolet
 b. diapulse
 c. low voltage
 d. ultrasound
 e. ion transfer
103. Galvanic current is:
 a. short wave
 b. direct current
 c. alternating current
 d. long wave
 e. mechanical
104. Critical electrodes are used in physiotherapy to:
 a. heat blood vessels
 b. apply ultrasound
 c. remove hair
 d. treat body cavities
 e. transfer ionic material
105. The paraffin bath is used to:
 a. maintain heat
 b. maintain cold
 c. transmit ultrasound
 d. soften scar tissue
 e. relieve itching

Physiotherapy

105. The following therapy is not electrotherapy:
- short wave diathermy
 - galvanism
 - microwave therapy
 - sinusoidal current
 - whirlpool bath
107. The crystal in the ultrasonic head is:
- quartz
 - zinc
 - copper
 - tile
 - iron
108. In treating tennis elbow with ultrasound, you would treat:
- only the elbow
 - only the nerve roots
 - both areas
 - with copper sulfate
 - no: treat this condition
109. In the use of diathermy we also treat the:
- ear
 - kidney
 - adrenal gland
 - thyroid gland
 - nerve roots
110. Over an abrasion in a patient's skin, the galvanic current will:
- diminish
 - spread out
 - remain the same
 - increase in strength
 - become faradic current
111. Clinically, a small dosage of ultrasound is:
- 1 to 1.5 watts
 - .3 to 1 watt
 - 3 to 4 watts
 - 2 to 6 watts
 - .5 to 1.5 watts per square centimeter
112. Microwaves produce electric energy about:
- 27 megacycles
 - 1 megacycle
 - 2450 megacycles
 - 70 megacycles
 - 67,345 megacycles
113. The current best adapted to ion transfer is:
- a smooth current
 - a strong current
 - a weak current
 - a fast current
 - a faradic current
114. Ultrasound should not be applied to the:
- uterus
 - arm
 - amputated limb
 - chest
 - scar
115. Ultrasound therapy is contraindicated in:
- tennis elbow
 - bursitis
 - anesthesia
 - osteoarthritis
 - sinusitis
116. The butterfly electrode is used to treat:
- sinusitis
 - bursitis
 - diabetes
 - fractures
 - vascular conditions
117. Prolonged application of cold will:
- hasten healing
 - retard healing
 - have no effect
 - increase vascular tissue
 - cause scars
118. The coplanar technic is used in:
- ultrasonic therapy
 - ultraviolet
 - infrared therapy
 - sitz baths
 - diathermy
119. A hydrogalvanic bath usually employs a solution called:
- copper sulfate
 - histamine
 - peroxide
 - tecasol
 - saline
120. The electrode pads for galvanic therapy should be kept in:
- water
 - dry air
 - saline solution
 - peroxide
 - copper sulfate solution
121. In anemias, ultraviolet:
- increases red cell production
 - decreases red cell production
 - produces deformed cells
 - has no effect on red cells
 - ruptures the red cells
122. Hydrocollator steam packs contain:
- copper sulfate
 - histamine
 - silica gel
 - mineral oil
 - saline
123. In galvanic therapy, the positive pole does not:
- attract oxygen
 - harden scar tissue
 - stop bleeding
 - have a sedative effect
 - act as a vasodilator
124. Rapid sinusoidal current alternates at:
- 40 to 60 cycles per second
 - 5 to 9 cycles per second
 - 5 to 30 cycles per second
 - 50 to 100 cycles per second
 - 1 cycle per second
125. The introduction of a drug into deeper layers of the skin by galvanic current is:
- iontophoresis
 - cataphoresis
 - diathermy
 - fomation
 - sinusoidal therapy
126. The dosage rule for galvanism is:
- 2 watts per square inch of electrode
 - one milliampere per square inch of electrode
 - 2 watts per centimeter of electrode
 - 5 milliampere per square inch of electrode
 - patient's tolerance
127. Cervical traction is not indicated in:
- whiplash
 - cervical disc injuries
 - migraine headaches
 - heart disease
 - arthritic conditions
128. Quartz instruments should be cleaned with:
- peroxide
 - boiling water
 - nothing
 - cotton and alcohol
 - cold water
129. Ethyl chloride is useful in controlling pain of:
- torticollis
 - gall stones
 - ulcers
 - burns
 - impetigo
130. In spastic constipation, diathermy is used to:
- soften the stool
 - relax the spasm
 - warm the abdomen
 - act as a laxative
 - give water to the stool
131. Tungsten filament infrared lamps emit:
- blue light
 - orange light
 - red light
 - no light
 - purple light
132. The jolly test using galvanic current is positive for:
- etany
 - myasthenia gravis
 - tuberculosis
 - bursitis
 - cancer
133. Muscle contractions produced by low voltage can be useful in treating:
- myositis
 - diabetes
 - carcinoma
 - fractures
 - tuberculosis

Physiotherapy

134. In treating hemorrhoids with ultraviolet, we use the:
- body grid
 - head grid
 - negative electrode
 - official applicator
 - carbon gun
135. The usual treatment with diapulse takes:
- 5 minutes
 - 30 minutes
 - 1 hour
 - 10 minutes
 - 3 minutes
136. Projecting ultrasound into tissues and listening for its echo is:
- radiation
 - sonation
 - ionization
 - ultrasonoscopy
 - desquamation
137. Alkaline baths are used to remove:
- skin scales
 - bandages
 - scar tissue
 - burns
 - grease
138. In physiotherapy, the treatment of choice for otitis media is:
- ultraviolet
 - diapulse
 - ultrasound
 - diathermy
 - low voltage
139. A Wood's light (ultraviolet) is used to detect:
- burns
 - muscle weakness
 - fungi
 - atrophy
 - sound
140. The treatment of nerve roots in ultrasonic therapy is called:
- coplanar technic
 - radiation
 - ionization
 - radicular treatment
 - stationary treatment
141. The negative pad in 0.0. current therapy:
- softens tissue
 - hardens tissue
 - burns tissue
 - causes desquamation
 - produces a scar
142. Underwater exercises are useful in:
- backache
 - acute painful neuritis
 - burns tissue
 - erosive joint lesions
 - acute joint inflammation
143. Chronic osteomyelitis responds best to:
- ultrasound
 - diathermy
 - ultraviolet
 - low voltage
 - diapulse
144. Diathermy is indicated in treating severe contusions after:
- 24 hours
 - 2 hours
 - 3 days
 - a week
 - immediately
145. In ultrasonic therapy, a contact medium must be used:
- because the sound wave is dangerous
 - to prevent infection
 - because the sound waves cannot pass through air
 - to hold the transducer in place
 - to prevent burning
146. In treating painful bruises, the negative pad should be:
- over the lesion
 - the indifferent electrode
 - dry
 - on the abdomen
 - held in the hands
147. In treating boils and carbuncles with ion transfer, we use:
- saline
 - salicylic acid
 - copper sulfate
 - iodine
 - faradic current
148. In treating brachial neuritis, the positive pad should be:
- dry
 - over the wrist
 - over the elbow
 - over the clavicular area
 - any place
149. Ultraviolet is not indicated in diabetes because:
- may cause itching
 - may cause condition to spread
 - will always cause a burn
 - the skin is too dry
 - will affect the insulin balance
150. A sitz bath is best suited to treat:
- bruises
 - Raynaud's disease
 - a fracture
 - nodes
 - hemorrhoids
151. The following apparatus is not meant for traction therapy:
- Hill anatomotor
 - Tong table
 - Buchanan table
 - ultrasound
 - cervical harness
152. The frequency of short wave diathermy is about:
- 1 megacycle
 - 27 megacycles
 - 10 megacycles
 - 100 megacycles
 - 5 megacycles
153. In diathermy application, the region of treatment should be free of:
- cloth
 - wooden objects
 - dust
 - metal objects
 - toweling
154. The transforming of electrical energy to mechanical energy in ultrasonic therapy is called the:
- sonating affect
 - radiation
 - ion transfer
 - electrotherapy
 - piezoelectric effect
155. A current that gradually increases to a maximum value and then decreases is:
- galvanic current
 - tetanzizing current
 - surging current
 - sinusoidal current
 - pulsating current
155. In treating neuralgia with galvanic current:
- the positive electrode is over the nerve
 - the negative electrode is over the nerve
 - the dispersive electrode is over the nerve
 - saline must be used
 - three electrodes must be used
157. A denervated muscle will react to electricity with:
- a slow, worm-like contraction
 - a short brisk twitch
 - no reaction
 - atrophy
 - flaccidity
158. The unit of infrared wave length measurement is:
- dram
 - foot
 - C. wave
 - Angstrom unit
 - watt
159. Patient sensitivity to ultraviolet is usually determined by:
- a chart
 - heat
 - skin test area outlined by paper
 - electrical sensitivity
 - patients eye
160. A calcium-phosphorus deficiency would respond best to:
- ultraviolet therapy
 - infrared therapy
 - ultrasound
 - low voltage
 - diathermy
161. The treatment of choice in physiotherapy for singultus is:
- ultrasound
 - traction
 - rapid sinusoidal current
 - galvanism
 - diathermy

Physiotherapy

162. Colonic irrigation is indicated in:
a. tuberculosis
b. rectal infections
c. syphilis
d. hypertonic colons
e. diverticulitis (severe)
163. The treatment for acute conjunctivitis for the first 24 hours is:
a. cold packs
b. hot packs
c. dry heat
d. massage
e. leave it alone
164. At a frequency of 1000 kilocycles, the effectiveness of ultrasonic energy at a depth of four inches is only:
a. 80%
b. 25%
c.
d. 100%
e. never does
165. The Kroayer lamp belongs to what therapy:
a. infrared therapy
b. diathermy
c. ultrasonic therapy
d. heat
e. ultraviolet therapy
156. A drum electrode is used in:
a. ultrasonic therapy
b. diathermy
c. low voltage
d. ion transfer
e. infrared therapy
167. The chief physiological effect of microwave is:
a. heat
b. cold
c. massage
d. ion transfer
e. muscle stimulation
168. In iontophoresis, metals or bases are placed at the:
a. negative pole
b. positive pole
c. wrist
d. dispersive electrode
e. larger electrode
169. The treatment by physical methods applied to the spinal region is called:
a. spondylotherapy
b. heliotherapy
c. ion transfer
d. acceleration
e. percussion
170. When heat is applied to a nerve the conductivity of the nerve is:
a. dampened
b. abolished
c. increased
d. not affected
e. dried out
171. Spinal traction is indicated in:
a. Pott's disease
b. spinal carcinoma
c. osteomyelitis
d. disc cases
e. spinal fracture
172. The best therapy for furunculosis of the external meatus is:
a. ultraviolet
b. diapulse
c. ultrasound
d. cold
e. diathermy
173. Low back traction is best applied within a range of:
a. 15 to 28 pounds
b. 25 to 30 pounds
c. 60 to 180 pounds
d. 5 to 10 pounds
e. over 200 pounds
174. Ultrasonic therapy to the knee involves:
a. treating only the back of the knee
b. treating only the front of the knee
c. treating only the nerve roots
d. treating from several angles
e. treating only over the tender area
175. The stellate ganglion should not be sonated in patients with:
a. broken bones
b. burns
c. history of heart disease
d. severe senility
e. neuritis
176. Diapulse operates at a frequency of about:
a. 27.12 megacycles
b. 1 megacycle
c. 92 megacycles
d. 150 megacycles
e. 300 megacycles
177. The range of sound waves audible to the human ear is:
a. 6 to 10 decibels
b. 50 to 20,000 cycles per sec.
c. 8.7 to 1.1 kilocycles per sec.
d. 2000,000 to 500,000 c.p.s.
178. The most desirable range of cycles per second for therapeutic applications of ultrasound is:
a. 0.7 to 1.1 megacycles
b. 50 to 20,000 cycles
c. 0.5 to 3 kilocycles
d. 200,000 to 500,000 cycles
179. The range of depth of penetration of ultrasound in most tissues is:
a. 4 to 8 inches
b. 10 to 12 cm.
c. 4 to 8 cm.
d. unlimited depth
180. The name of the phenomenon by which mechanical vibrations are produced when electrical charges are applied to a crystal surface is:
a. Piezoelectric effect
b. Rheobase
c. Cavitation
d. Transduction
181. The waves of rarefaction and condensation in ultrasound are:
a. longitudinal
b. transverse
c. auscultatory
d. perpendicular
182. The head of the ultrasound unit is called the:
a. Rheobase
b. Piezograii
c. Conductrode
d. Transducer
183. Because ultrasound produces mechanical vibrations, what must be applied to the patient before use of ultrasound:
a. negative pole
b. heat
c. a coupling agent
d. a conductrode
184. PZT (load-Zirconate-Titanate) crystals are favored over quartz and salt crystals because they:
a. are less expensive
b. require less voltage
c. will not break if dropped
d. are resistant to heat
185. Pulsed ultrasound minimizes which of the four effects of ultrasound:
a. thermal
b. mechanical
c. chemical
d. biological
186. Irregular body surfaces are effectively treated with ultrasound by using:
a. piezoelectric effect
b. increased voltage
c. underwater technique
d. pulsed ultrasound
187. Experimental use of excessively high ultrasound dosages has produced an effect called:
a. Piezoelectric
b. cavitation
c. micromassage
d. transduction
188. The average intensity of ultrasound in watts per square centimeter used in practice is:
a. 10 to 20
b. 1 to 5
c. 0.7 to 1.1
d. 0.5 to 2.5
189. The widest field of usefulness of ultrasound therapy is in:
a. pregnancy
b. Ischemia
c. Arthritic conditions

Physiotherapy

190. The ultrasound applicator head should not be held in air for long periods while energized because it will:
- become hot
 - become grounded
 - polarize the crystals
 - shock the patient
191. In treating trigger points, using the sound head held steady, the machine should be switched to:
- red leads
 - low voltage
 - continual sound
 - pulsed sound
192. Electronic current flows from:
- plus to minus
 - plus to plus
 - minus to minus
 - minus to plus
193. A unit of quantity of electricity, which is the amount furnished by a current of one ampere in one second is:
- volt
 - ohm
 - coulomb
 - Faraday
- 191+. The unit of strength of electrical current, representing a current having a force of one volt and passing through a conductor with a resistance of one ohm is:
- faraday
 - ampere
 - coulomb
 - anion
195. The electromotive force that will produce a current of one ampere in a circuit which has a resistance of one ohm is one:
- faraday
 - volt
 - coulomb²
 - hertz
196. The unit of electrical resistance is:
- Faraday
 - coulomb
 - hertz
 - ohm²
197. The voltage necessary to force a current of 10 amps through a resistance of 20 ohms is:
- 200 volts
 - volt
 - 2 volts
 - 5 volts
198. The range of wavelength of ultraviolet rays is:
- 1 to 10 m
 - 1 to 10 cm
 - 1800 to 4000 angstroms
 - 0.7 to 1.1
199. The range of wavelength of infrared rays is:
- 1' to 10 m
 - 1 to 10 cm
 - 1800 to 4000 angstroms
 - 7,000 to 120,000 angstroms
200. When treating geriatrics with diathermy, one must be cautious because elderly people in general do not:
- sleep regularly
 - bathe regularly
 - maintain their Medicare
 - maintain their vitamin D intake
201. Pure distilled water is a: nt of
- conductor
 - semi-conductor
 - non-conductor
 - conductrode
202. Flaccid paralysis of muscles is characteristic of:
- upper water lesions
 - lower water neuron lesions
 - hyperactive deep reflexes
 - decussation failure
203. Reaction to degeneration usually occurs within what period of time after injury:
- 10 to 14 hours
 - 3 to 6 weeks
 - 10 to 14 days
 - immediately
204. The point of the muscle which normally is most excitable and represents the location of the greatest concentration of nerve endings is the:
- motor point
 - rheobase
 - conductrode
 - RD
205. The minimal strength of an electrical stimulus of indefinite duration that is able to cause excitation of a muscle or nerve is called:
- chronaxie
 - rheobase
 - conductrode
 - RD
206. The penetration of ultraviolet rays into the skin is limited to approximately:
- 4 to 8 cm
 - 0.7 to 1.1 cm
 - 2 in.
 - 1 mm
207. Patch tests are used to test for sensitivity before the use of:
- ultrasound
 - ultraviolet
 - diathermy
 - diapulse
208. The recommended conductive heating device is:
- electric heating pad
 - hot water bottle
 - wet hot packs
 - electric hot water bottle
209. One must always cover the area of the patient to be treated with towels or sponges to absorb perspiration when treating with:
- diathermy
 - ultrasound
 - ultraviolet
 - chronaxie
210. A modification of a potentiometer which controls resistance is a:
- rheobase
 - rheostat
 - conductrode
 - chronaxie
211. A form of A.C. which consists of two pulses immediately following each other, in different direction, one of high intensity and short duration and the other of low intensity and long duration is:
- galvanic current
 - faradic current
 - continuous current
 - phoresis
212. The important effect of cryotherapy is:
- increased metabolism
 - vasodilation
 - vasoconstriction
 - vasotribution
213. With extremely rapid cooling, there will be periodic bursts of:
- vasotribution
 - vasoconstriction
 - vasodilation
 - angiotension
214. To reduce extravasation of blood and fluid after trauma, one would apply:
- cold
 - heat
 - diathermy
 - ultrasound
215. The depth of penetration into the skin of infrared waves is approximately:
- 3 in.
 - 6 cm.
 - 8 mm.
 - 2 mm.
216. Various points in the course of a nerve, pressure upon which is painful in cases of neuralgia, are called:
- pseudomonas
 - Erb's points
 - Valloix's points
 - Trousseau's points
217. CCC - ACC - COC I representative of:
- Pfluger's law
 - Erb's law
 - Neumann's law
 - Ohm's law
218. In bipolar application of galvanic current, the two electrodes are:
- different sizes, close together
 - same size, close together
 - same size, same distance apart
 - different size, same distance apart

Physiotherapy

219. Infrared is an example of heat transmitted by:
- conduction
 - convection
 - radiation
 - absorption
220. The source of infrared which produces shorter waves which are more penetrating is:
- faradic
 - galvanic
 - non-luminous
 - luminous
221. An intense reaction with swelling, edema and definite blister formation is called:
- erythema
 - sub-crythema dose
 - first degree crythema dose ..
 - third degree crythema dose
222. One method of helping to prevent rickets is the use of:
- ultraviolet
 - ultrasound
 - cryotherapy
 - diathermy
223. Effleurage is a type of:
- electrophoresis
 - massage
 - direct current
 - cryotherapy
224. Ultraviolet is useful in treating:
- psoriasis
 - acute eczema
 - herpes simplex
 - Scleroderma Pigmentarum
225. In the use of direct current one of the effects at the anode is:
- alkaline reaction
 - hardening of tissue
 - softening of tissue
 - none of the above
226. An electrical current used for its heat producing effects is a:
- galvanic current
 - sinusoidal current
 - faradic current
 - static current
 - high frequency current
227. Indicate the contraindications for short-wave diathermy listed below:
- tenosynovitis
 - sprains
 - closed suppurative abscess
 - chronic bursitis
 - sinusitis
228. The standard unit of measuring wave length of the electromagnetic spectrum is:
- milliamperes
 - solar system
 - kilovolt
 - angstrom unit
 - decibel
229. Placing shortwave diathermy pad electrodes of equal size opposite and parallel is designated as:
- co-plano application
 - cuff application
 - longitudinal application
 - semi-cuff application
 - transverse application
230. The flow of an electrical force of shortwave diathermy through the insulating or dielectric medium is known as:
- conductive current
 - capacitative current
 - neither
 - both
231. In the human body, what tissues conduct shortwave diathermy currents most effectively:
- muscle
 - tendons
 - fasciae
 - fat
 - bone
232. One of the following is not a secondary physiological effect of shortwave diathermy:
- hyperemic
 - attenuation of bacteria
 - increased metabolism
 - polarity effects
 - sedation
233. One of the following is not considered a current of low frequency:
- interrupted galvanic
 - slow sinusoidal
 - faradic
 - microwave diathermy
234. One off the following aggravates the condition with shortwave diathermy:
- bursitis
 - hypertrophic arthritis
 - tenosynovitis
 - acute rheumatoid arthritis
 - adhesive capsulitis
235. Why is shortwave diathermy applied directly over the lesion, contraindicated in arteriosclerosis obliterans and thromboangitis obliterans:
- due to an area of ischemia producing a burn or gangrene
 - structures involved cannot be reached due to the depth within the tissues of the body
 - the thermal effects cause ionic changes due to their rapid oscillations
 - increased pigmentation
 - there is no increased blood flow through the part
236. Diathermy is indicated in treating severe contusions after:
- 24 hours
 - a week
 - 2 hours
 - 3 days
 - immediately
237. In microwave therapy, the director is placed from the part a distance of:
- 24 inches
 - 36 inches
 - 1 to 6 inches
 - 15 inches
 - 4 feet
238. The chief physiological effect of microwave
- heat
 - cold
 - massage
 - ion transfer
 - muscle stimulation
239. The art of massage includes a manual application of superficial stroking. Which of the following corresponds to this procedure:
- tapotement
 - effleurage
 - petrissage
 - none
 - all
240. One of the following is not an indication for cervical traction:
- to stretch muscles and ligaments
 - to widen disc spaces that have been narrowed by disc degeneration
 - malignant diseases, metastatic or local
 - to separate vertebral bodies
 - to stretch and separate epiphyseal joints
241. The standard unit of measuring wave length of the electromagnetic spectrum is:
- milliamperes
 - kilovolt
 - angstrom unit
 - solar system
 - decibel
242. Passive exercise is indicated in the following:
- fibrous ankylosis
 - contractures
 - muscular paresis
 - all of them
 - none of them
243. In the use of diapulse therapy, we also treat the:
- ear
 - kidney
 - adrenal gland
 - thyroid gland
 - nerve roots
244. One of the following is not a component of a diode tube:
- plate
 - filament
 - grid
 - filament prong
 - glass envelope
245. In catalelectrotonus, a direct current on a nerve produces:
- an increase of irritability at the negative pole
 - a decrease of irritability at the positive pole
 - an increase of irritability at the positive pole
 - a decrease of irritability at the negative pole

Physiotherapy

246. In partial reaction of degeneration of a nerve, one of the following is not correct:
- the nerve shows a decrease of both faradic and galvanic response
 - the nerve does not respond to either faradic or galvanic stimulation
 - the response is slow, but this is not as pronounced as in full RD
 - there may be longitudinal reaction and inversion of polar formula
 - there is a decrease of faradic excitability
247. The shifting of water content of the tissues through a membrane structure with an electrical charge is designated as:
- electroosmosis
 - cataphoresis
 - electrotonus
 - electrolysis
 - myasthenia reaction
248. Anion is an ion carrying a:
- positive charge
 - negative charge
 - neutral charge
 - dielectric charge
 - none of these
249. A constant current flowing in one direction is called:
- alternating current
 - direct current
 - faradic current
 - static current
 - high frequency current
250. One of the following reactions listed is not a polarity effect of positive galvanism:
- acid
 - vasoconstriction
 - stimulating
 - dehydrates tissue
 - attracts oxygen
251. When a direct current passes between two electrodes immersed in an electrolytic solution, the following occurs:
- positive ions will be attracted to the negative pole
 - negative ions will be attracted to the positive pole
 - neither
 - both
252. Dosage of application for the galvanic current must always be within comfortable toleration, but as an average the normal skin tolerates what amount of milli-amperes per square inch of ad electrode:
- 1/2 to 1
 - 3to4
 - 5 to 6
 - 7 to 8
 - 9 to 10
253. Application from the positive pole of the galvanic current for the following is correct except:
- copper is employed in the treatment of endocervicitis
 - zinc is the best antiseptic of the caustic ions
 - the free ions of copper and zinc produce an insoluble precipitate
 - the result is a local germicidal effect with zinc or copper
 - with zinc and copper, there is liquification of protein
254. The following effects of current electricity listed below are all correct except:
- all forms of current produce thermal and electromagnetic effects
 - chemical action is mainly produced by the direct current
 - changes in direction of flow in the alternating current interfere with the regular movement of ions upon which chemical actions are used
 - currents of very rapid alternations (high frequency currents) exert no chemical action at all
 - high frequency currents produce muscle stimulation in the form of contractions
255. In the treatment of uncomplicated chronic middle ear suppuration especially with large tympanic perforation, which of the following solutions are used in iontophoresis:
- 2% copper sulphate
 - 2% zinc sulphate
 - acentine
 - 1 calcium chloride
 - 2 sodium chloride
256. Static electricity utilizes the following averages:
- 5 MA
 - 50 MA
 - 75 MA
 - 25 MA
 - less than 1 MA
257. With application from the positive pole of the gal-vanic generator, the use of heavy metals such as copper and zinc differ from the action of medicinal ions by:
- instead of a soluble molecule which is absorbed by the tissue, the free ions of copper and zinc produce an insoluble protein
 - the opposite effect as explained in A
 - both
 - neither
258. The dosage rule for galvanism is:
- 2 watts per square inch of electrode
 - one milliampere per square inch of electrode
 - 2 watts per square centimeter of electrode
 - 5 milliampere per square inch of electrode
 - patient's tolerance
259. In ion transfer therapy, the following substance is used at the negative pole:
- potassium
 - mercury
 - sulphate
 - histamine
 - iodine
260. The deeper destruction of tissues by high frequency bitcroinal currents is:
- electrotomy
 - radiation
 - burning
 - electrodeiccation
 - electrocoagulation
261. Thyroid conditions treated with ion transfer therapy will receive:
- copper sulfate
 - sodium chloride
 - zinc sulfate
 - iodine
 - histamine
262. Bell's palsy responds best to ion transfer treatment when we use:
- copper sulfate
 - histamine
 - silver nitrate
 - saline
 - sodium chloride
263. Ultrasound upon tissue produces the following effects, except:
- produces a powerful and deep micromassage
 - causes exudates and precipitates to be absorbed and tissue deposits to be broken up
 - relieves edema
 - increases hypertonicity of muscle
 - produces a local analgesia causing relief of pain
264. Which is associated with ultrasound:
- photochemical
 - kinetic
 - piezo-chemical
 - piezo-electrical
 - dielectric conductivity
265. The word "cavitation" is most likely associated with which of the following:
- shortwave diathermy
 - sinusoidal
 - microwave
 - ultraviolet
 - ultrasound
266. Ultrasound therapy is associated with one of the following:
- capacitance
 - resistance
 - reactance
 - low frequency
 - rarefication and condensations
267. The average ultrasonic generator for general practice utilizes the following cycles per second:
- 2,000,000
 - 3,000,000
 - 10,000
 - 800,000
 - 10,000,000
268. Ultrasonic dosage is measured as follows:
- watts per square cm.
 - percentage of power
 - angstrom units
 - ultraviolet
 - hydrotherapy
269. A transducer head is associated with what unit of physiotherapy:
- shortwave diathermy
 - microwave diathermy
 - ultrasound
 - ultraviolet
 - hydrotherapy

Physiotherapy

270. Clinically, a small dosage of ultrasound is:
- 1 to 1.5 watts
 - .5 to 1 watt
 - 3 to 4 watts
 - 2 to 6 watts
 - .5 to 1.5 watts per centimeter
271. Projecting ultrasound into tissue and listening for its echo is:
- radiation
 - sonation
 - ionization
 - ultrasonoscopy
 - desquamation
272. Ultrasonic energy is:
- homogenously absorbed
 - not absorbed
 - radiated
 - slightly absorbed
 - not homogenously absorbed
273. With ultrasound in a water bath, we usually can:
- decrease wattage
 - increase wattage
 - heat the water
 - leave the wattage the same
 - use dermassage.
274. An ultrasonic applicator with a radiating area of six square centimeters and a total output of 15 watts has an average intensity of:
- 5 watts per square cm.
 - 2.5 watts per square
 - C. 10 watts per square cm.
 - 20 watts per square c.
 - 100 watts per square cm.
275. The mechanical effect of ultrasound is said to be one of:
- micromassage
 - heating
 - vibrating
 - radiation
 - absorbed energy
276. The best safeguard in the use of ultrasound is:
- itching
 - hypcromia
 - coldness
 - patient's complaint of pain
 - muscle reaction
277. The ultrasonic application in osteoarthritis of the hip joint involves the treatment of:
- one area
 - three areas
 - five areas
 - only the hip
 - only the nerve root
278. The transforming off electrical energy to mechanical energy in ultrasonic therapy is called the:
- sonating effect
 - radiation
 - ion transfer
 - electrotherapy
 - piezoelectric effect
279. At a frequency of 1000 kilocycles, the effectiveness of ultrasonic energy at a depth of four inches is onlya.
- 80
 - 25
 - c.
 - 100%
 - never does
280. One of the following is not a biological effect of ultraviolet:
- pigmentation
 - anti-rachitic
 - bactericidal
 - metabolic effect
 - liquifactive effect
281. The totality of the visible spectrum may be separated by prisms or suitable filters into different wave lengths representing different colors. The following are of the matching type. Select the item from Column II that is most appropriate to the item in Column I:
- | | |
|-----------|--------------------|
| a. yellow | a. 4000 to 4500 AU |
| b. green | b. 4500 to 4900 AU |
| c. red | c. 4900 to 5500 AU |
| d. violet | d. 5500 to 5900 AU |
| e. orange | e. 5900 to 6300 AU |
| f. blue | f.5300 to 7800 AU |
282. All except one listed below is questionable regarding ultraviolet therapy:
- blood sugar of the normal person is not influenced
 - influence thyroid activity
 - irradiation may double the fat content of the blood
 - ultraviolet rays exert a glycogen- storing effect
 - irradiation
283. The bactericidal effects of wave lengths of ultraviolet showed maximal effects in a zone midway between which of the following:
- 1000 to 2000 AU
 - 3000 to 4000 AU
 - 2000 to 3000 AU
 - 4000 to 5000 AU
 - 6000 to 7000 AU
284. Bactericidal effects on the tissues of the human body by ultraviolet are limited by the penetration of ultraviolet restricted to the uppermost layers of the skin. What is this depth:
- 2 mm
 - 3 mm
 - 4 mm
 - 5 mm
 - 6 mm
285. One of the following is considered a contraindication to ultravioletirradiation:
- infantile tetany
 - bronchial asthma
 - adenoma sebaecum
 - pityriasis rosea
 - active and progressive forms of pulmonary tuberculosis
286. A patient will receive optimum infrared rays if the source is at:
- a 65 degree angle to the irradiated surface
 - a 60 degree angle to the irradiated surface
 - right angles to the irradiated surface
 - a 120 degree angle to the irradiated surface
 - any angle to the irradiated surface
287. The following is not classified as ahigh frequency treatment method:
- shortwave diathermy
 - electrodesiccation
 - electrocoagulation
 - sinusoidal current
 - electrocautery
288. One of the following is incorrect:
- chronaxie of a healthy nerve is about 1/50 sec.
 - chronaxie of a degenerated muscle is about 1/50 sec.
 - it would be useless to apply a faradic stimulus with its time duration of 1/1000 sec. to excite a paralyzed muscle with a chronaxie of 1/50 sec.
 - a quick chronaxie of a healthy muscular mechanism requires a slow make and break to secure maximum effect.
289. Muscles in the stage of flaccid paralysis react as follows, except:
- responds only to a very slow rate of stimulation
 - rate of stimulation being 10-20 per minute
 - the contraction is sluggish and vermicular
 - rough stimulus, such as quick galvanic current is the current off choice
 - a slow smooth galvanic current produces a stimulus o long duration to which paralyzed muscles respond gently and painlessly
290. The most important field for physical therapy lies in the treatment of:
- acute disease
 - acute infection
 - contagious disease
 - chronic disease
 - acute traumatization
291. What is the unit of power o ultrasound;
- amperes
 - ohms
 - watts per square centimeter
 - watts per square millimeter
 - volts per square centimeter
292. Galvanic and sinusoidal currents are known respectively as:
- short wave frequencies
 - faradic and square wave
 - alternating and pulsed
 - alternating current and direct current
 - direct current and alternating current
293. The action of high frequency current upon quartz crystal is the following effect:
- rheobase
 - photothermal
 - piezo electric photochemical
 - electrochemical
296. In a water system pressure is to rate of flow as an electrical system voltage is to:
- current
 - wattage
 - power
 - ohms
 - amperage
295. An ohm may be defined as a measure of:
- electric current
 - electrical voltage
 - electrical resistance
 - capacitance
 - electrical conductants

Physiotherapy

295. Electrical or galvanic current is best defined as:
- cyclic flow of electrons
 - unidirectional flow of electrons
 - bidirectional flow of electrons
 - current that travels evenly
 - current that goes the shortest distance between two points
297. The inverse square law states:
- the square of the law is less than its length
 - intensity increases with the square of the distance
 - the more you make the less you have
 - the opposite of the reverse square law
 - the sum of the squares equals the difference in the square roots
298. J.H. Van Hoff's Law states:
- the tolerance of skin to ultra violet is greater than mucous membrane
 - a nerve will be stimulated by cold
 - for every 20 degree rise in temperature oxidation is increased 2 times
 - the oxidation is reduced in direct proportion to the increase in temperature
 - a nerve which innervates a muscle also innervates the skin
299. The negative pole in galvanism is:
- cathode
 - ions
 - electrons
 - protons
 - anode
300. Which is in association with ultra sound:
- thermal
 - kinetic
 - photochemical
 - piezo electric effect
 - dielectric conductivity
301. Non-luminous infrared lamps in use today emit:
- protons
 - ultra violet
 - visible light
 - far infrared
 - near infrared
302. Faradic current causes greater contraction than an equal value of sinusoidal because:
- faradic current is galvanic in nature
 - faradic current is peaked where sinusoidal is not
 - faradic is alternating sinusoidal is not
 - faradic current has a greater affinity for muscle
 - faradic current was developed specially for muscle
303. Official ultra violet applicators are available in:
- only cold quartz form
 - only in hot quartz form
 - in either hot or cold quartz form
 - in intermittent hot quartz form
 - in continuous hot and cold quartz form
304. The galvanic pole that forms acids, attracts and liberates oxygen, corrodes metals, adheres and hardens tissue, is a vasoconstrictor, acts as a sedative to acute pain and ionizes metals is:
- the positive pole
 - the negative pole
 - virtual pole
 - indifferent pole
 - smaller pole
305. If passed through the body the path of an electric current travels:
- the path of least resistance
 - the fastest route
 - through the bones
 - through the muscles
 - the shortest distance
306. The factor preventing sine wave current from producing polar effects is the:
- reflex effects it produces
 - small amount of current used
 - alternate direction the current flows
 - change in amplitude of the current
 - fact it causes muscular contraction
307. A polarity effect of negative galvanic current is:
- attracts alkalis
 - vasoconstriction
 - liberates oxygen
 - hardens tissue
 - sedative
308. Diathermy would be of the least value in the treatment of:
- spastic colitis
 - acute lumbosacral sprain
 - fibrositis
 - sinusitis
 - lobar pneumonia
309. In the use of sine wave the least current needed is:
- the motor points are stimulated
 - the pads are of unequal size
 - all of these methods are equal to the pads on either side of the muscle
 - the current runs longitudinally through the muscle
310. Infrared rays are produced from one of the following:
- short wave diathermy
 - sine wave
 - electric heating pad
 - hot water bottle
 - solaria
311. One obvious advantage in the use of microwave diathermy is that:
- patients appreciate the rapid heating effect
 - the pads are soaked in warm water
 - no direct contact is made with the patient
 - Instrument can be calibrated exactly for each patient
 - a greater area is treated by microwave
312. A generally accepted form of ultra sound treatment involves treating:
- the whole spinal column generally
 - the site of injury only
 - the site and also the spinal nerve origins of the site
 - distal to the site of injury or pain
 - spinal nerve origins of the painful or injured site
313. The proper order of sensitivity of body tissues to ultra violet from most to least sensitive are as:
- connective, mucous membrane, skin
 - skin, mucous membrane, connective
 - connective tissue, skin, mucous membrane,
 - mucous membrane, connective, skin
 - mucous membrane, skin, connective
314. A predominance of germicidal rays are obtained from a or an:
- cold quartz
 - hot quartz
 - carbon arc
 - infrared lamp
 - deep therapy lamp
315. What is the recommended safe distance between the source of infrared and the patient area:
- 4 inches
 - 10 inches
 - 22 inches
 - 24 inches
 - 50 inches
316. Ordinarily the weight of sustained cervical traction with muscle spasm of the intrinsic variety is:
- 1-10 lbs.
 - 25 - 40 lbs.
 - 60 - 70 lbs.
 - 75 - 80 lbs.
 - 80 - 100 lbs.
317. Motorized intermittent traction is of least value in the treatment of:
- acute torticollis
 - cervical radiculitis
 - scalenus anticus syndrome
 - cervical spondylosis
 - cervical adhesive capsulitis
318. The wax bath is most useful in treating the following:
- foot ulcers
 - leg spasms
 - temporary paralysis
 - arthritis of the hands
 - lumbar strain
319. One of the following does not emit long wave infra red rays (1500-120,000 A)
- electric arc
 - heated bricks
 - steam heat
 - radiating hot water bottle
 - electric heating pads
320. Paraffin baths owe their effectiveness to:
- the fact they are non allergenic
 - their soothing effect on the skin
 - they lend themselves to easy application
 - the heat retaining qualities of warm paraffin
 - the pleasant feeling they impart to the patient

Physiotherapy

321. The most important use of the tetanizing faradic test and galvanic test is:
- testing for A waves
 - testing for reaction of degeneration
 - determining the state of hypertrophic changes in the muscle
 - passive exercise therapy
 - NOTA
322. The primary physical effect of sinusoidal current is:
- photochemical
 - physiochemical
 - sonar
 - thermal
 - kinetic
323. Before turning on any electrotherapeutic modality it is mandatory to:
- determine the power is turned on to the lowest point
 - be sure the patient is amenable to treatment
 - the patient understands what is about to happen
 - check the time to avoid over- treatment
 - advise the patient that the treatment might be uncomfortable
324. After a relatively brief treatment with pulsating galvanic current upon removal of the pads the area under each respective pad is observed to be:
- without color change
 - blanched in both areas
 - areas equally discolored
 - blanched under the negative pad, reddish under the positive pad
 - blanched under the positive pad, reddish under the negative pad
325. The heat production of diathermy results from:
- output set too high
 - electrical energy of the current
 - diathermy applicator contracting the patient's body
 - moisture buildup on the patient's body
 - resistance of tissue to the passage of electrical current
326. The action produced at the positive pole in the use of galvanic current would be that it:
- stimulating
 - softens scars
 - causes vasodilation
 - relieves pain and congestion
 - causes an alkaline reaction
327. Ultra sound mildly heats the tissue by:
- increasing circulation through the part treated
 - hyperemia at the area being treated
 - conversion of ultra sonic energy into internal friction
 - application of the sound head through a lotion which builds up heat
 - direct application of the warm sound head to the body
328. The main effects of local ultra violet irradiation are:
- heat and relaxation
 - exfoliation and swelling
 - stimulation of local circulation and nerve endings
 - burning and destruction of tissues
 - mental and psychological
329. In the tissues ultra sound produces:
- pain
 - light
 - destruction of muscles
 - areas of increased and decreased pressure
 - small electrical current
330. Muscle contractions produced by low voltage contractile current can be useful in treating:
- atrophy of disuse
 - hypertonicity
 - hypotonicity
 - fractures
 - skin lesions
331. The nerve supply to the gastrocnemius muscle is severed. A day or two later interrupted pulsating galvanic current is applied over the muscle. It will:
- give vermicular response
 - respond erratically
 - still contract briskly as reaction of degeneration has not yet become effective
 - be exaggerated in response
 - not respond as it is dead because it is without nerve supply
332. The muscle in which their nerve supply has under-gone complete reaction to degeneration will respond:
- feebly to galvanic current
 - feebly to faradic current
 - briskly to faradic current
 - briskly to sinusoidal and weak to faradic
 - feebly to sinusoidal and strong to faradic
333. The area of greatest response to surface applied stimuli for muscle testing is called:
- electro diagnosis
 - trigger points
 - neuromuscular point
 - nerve conduction point
 - motor point
334. A physiological effect of sine wave treatment is:
- hardening of tissues
 - bacteriostasis effect
 - increased visual acuity
 - neurological reflex effect, reflex effect
 - ionization of electrolysis
335. Acute inflammation of the trochanteric bursa may be advantageously treated with the use of:
- ice packs
 - active massage
 - negative galvanism
 - motorized intermittent traction
 - deep massage
336. In the management of the lumbar intervertebral disc syndrome the modality of choice in the acute stage would be:
- diathermy
 - negative galvanism
 - infrared
 - periodic sustained traction
 - intermittent motorized traction
337. In the management of disuse atrophy the modality of choice would be:
- ultra sound
 - diathermy
 - sine wave
 - positive galvanism
 - negative galvanism
338. In the use of pulsed diathermy we also treat the:
- ear
 - nerve roots
 - adrenal glands
 - kidney
 - thyroid gland
339. The motor point in most cases corresponds to the point:
- of exit from a muscle from its main nerve
 - in the brain where a motor nerve arises
 - where motor nerves arise
 - of entrance into a muscle of its main nerve supply
 - of exit from the spinal column of a motor nerve
340. The term myotatic reflex is associated with:
- galvanism
 - muscle
 - ultra sound
 - diathermy
 - bone
341. In the management of pneumonitis the modality of choice would be:
- negative galvanism
 - positive galvanism
 - sine wave
 - diathermy
 - ultra sound
342. Maintenance of balance is provided mainly by the activity of:
- hip extensors
 - knee extensors
 - sartorius and anterior tibial muscles
 - all the extensors of the lower extremity
 - all the flexors of the lower extremity
343. While exercising a muscle it is easier to maintain maximal tension by:
- concentric exercises
 - prolonged nerve stimulation
 - increasing the speed of contractions
 - isometric exercises
 - increasing the work load
344. Short wave diathermy may be advisable in one of the following conditions:
- bronchitis
 - pregnancy
 - menstruation
 - malignant growth
 - acute infectious arthritis

Physiotherapy

345. One of the following is a contra indication for microwave diathermy:
- bicipital syndrome
 - sciatic syndrome
 - shoulder-hand syndrome
 - scleroderma
 - ischemic tissue
346. Ultra sound is contra indicated in all but one of the following:
- the chest in advanced heart disease
 - over malignant neoplasms
 - over chest in hemoptysis
 - over spine in spondylosis
 - over pregnant uterus
347. Ultra sound is contra indicated in:
- tendonitis
 - herpes zoster
 - muscle spasm
 - osteoarthritis
 - acute rheumatoid arthritis
348. Ultra sound would be most effective in the treatment of:
- salpingitis
 - erysipelas
 - athletes foot
 - herpes zoster
 - osteoporosis
349. Which of the following is not a physiological effect of short wave diathermy:
- hyperemia
 - increased metabolism
 - sedation
 - polarity effects
 - attenuation of micro-organisms
350. Heating in an electro magnetic field:
- produces eddy currents in conductive substances
 - is called a current or capacity
 - heating by a conduction current
 - considered electric field heating
 - heating effects are conductive in non vascular type of tissue.
351. Erythema that produces a blister from ultra violet therapy is:
- sub erythema dose
 - first degree erythema
 - second degree erythema
 - third degree erythema
 - minimal erythema dose
352. One of the following is considered a contra indication to ultra violet irradiation:
- infantile tetany
 - bronchial asthma
 - rickets
 - acne vulgaris
 - active and progressive forms of pulmonary TB
353. Traction is not indicated in:
- discopathy
 - strain
 - arthritis
 - dislocation
 - sprain
354. Spinal traction is indicated in:
- spondylitis
 - spondylosis
 - Potts disease
 - spinal carcinoma
 - spinal osteomyelitis
355. Intermittent motorized traction would be contra indicated in cervical:
- osteoarthritis
 - myofibrosis
 - infectious myositis
 - disc degeneration
 - adhesive capsulitis
356. Acute inflammation with non-draining suppuration, tendency to possible hemorrhage, malignant tumors and thermal anesthesia are considered contra indications to use of:
- ice bag
 - low voltage
 - ultra violet
 - cold, wet application
 - thermo-therapy
357. Hypokinetic back pain occurs as a result of:
- acute sprain-strain type injury
 - disc herniation
 - degenerative disease of the spine
 - excessive exercising
 - disuse weakness
358. The Australian noted for work in poliomyelitis is:
- Lindlahr
 - Kenny
 - Semmelweis
 - Schussler
 - Lind
359. A patient will receive optimum infra red rays according to the cosine law if the source is at:
- a 45 degree angle to the irradiated surface
 - a 60 degree angle to the irradiated surface
 - a 120 degree angle to the irradiated surface
 - right angles to the irradiated surface
 - any angle to the irradiated surface
360. The therapeutic use of ultra violet may be indicated in:
- heart disease
 - diabetes mellitus
 - arteriosclerosis
 - hyperthyroidism
 - rickets
361. The predominant physiological effect of sine current is:
- its polar effect
 - it causes pain
 - it relieves pain
 - it heats the body
 - contraction of muscles
362. Physiological effect not produced by massage is:
- absorption of exudate
 - freeing of adhesions
 - induration
 - sedation
 - increased muscle tone
363. Ultra sound will:
- provide gas in tissues
 - intensify gas in tissues
 - vaporize gas in tissues
 - dissipate gas in tissues
 - liquefy gas in tissues
364. For each degree of Fahrenheit rise in body temperature the pulse rate will increase about:
- 2 beats
 - 4 beats
 - 8 beats
 - 10 beats
 - 14 beats
365. The time used to define the character of a stimulus required to excite nerve tissue is:
- tapotement
 - chiropraxis
 - irritability
 - chronaxie is twice the rheobase
 - adaptability
366. The physiological effects of sustained traction includes all of the following except:
- retracts the annulus fibrosus
 - relieves muscle contractures
 - physiologically increases circulatory dynamics
 - puts spastic muscles in physiological rest
 - relieves compressive effects of muscle spasm
367. Sinusoidal stimulation is especially indicated in:
- Bell's palsy
 - radiculitis
 - Parkinson's disease
 - bursitis
 - tenosynovitis
368. Evidence of advancing muscle degeneration is shown by:
- decrease in rheobase
 - increase in latent period
 - decrease in latent period
 - feeling of weakness
 - incorrect chronaxie readings
369. One of the following is not a contraindication to sine wave:
- over metal
 - through heart
 - chronic scars
 - abrasions
 - patients with pacemaker
370. Over an abrasion in a patient's skin the galvanic current:
- diminishes
 - becomes spread out
 - becomes faradic
 - increases in strength
 - remains in strength
371. Diathermy is contra indicated in all of the following except:
- pregnancy
 - malignancies
 - hemorrhage
 - acute inflammatory processes along with fever and suppuration
 - congestive respiratory conditions

Physiotherapy

372. All of the following are true concerning diathermy except:

- a. It is used as a panacea for painful conditions
- b. Contraindicated over metallic implants
- c. 20 minutes is minimum time for efficient treatment
- d. painful conditions usually require daily treatment
- e. use of an insulating material between applicator and patient is indicated

373. Shortwave diathermy is used under which of the following conditions:

- a. bursitis
- b. tenosynovitis
- c. adhesive capsulitis
- d. hypertrophic arthritis
- e. acute rheumatoid arthritis

374. Select the answer that best defines galvanic current:

- a. unidirectional current, low voltage and amperage
- b. alternating current, low voltage and amperage
- c. intermittent current, low voltage and amperage
- d. unidirectional current, high voltage and amperage
- e. unidirectional current, low voltage, high amperage

375. Which of the following is true of sinusoidal current:

- a. high voltage, low milliamperage, high frequency
- b. low voltage, low milliamperage, high frequency
- c. low voltage, high milliamperage, low frequency
- d. low voltage, low milliamperage, low frequency

376. Agitated water baths are examples of the transfer of heat by:

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

377. Give the approximate healing time of ligaments after dislocation:

- a. 2-3 weeks
- b. 6 months
- c. 12 - 16 days
- d. 6 - 12 weeks
- e. 6 - 9 months

378. Cold would be contraindicated in which of the following diseases:

- a. Raynauds disease
- b. Pott's disease
- c. Bright's disease
- d. shingles
- e. gangrene

Physiotherapy

| | | | | | | |
|-------|----------------|----------|--------|----------|--------|--------|
| 1. d | 57. b | 113. a | 169. a | 225. c | 281. e | 337. c |
| 2. b | 58. d | 114. a | 170. c | 226. e | 282. e | 338. c |
| 3. e | 59. b | 115. c | 171. d | 227. c | 283. c | 339. d |
| 4. d | 60. b | 116. a | 172. a | 228. d | 284. a | 340. a |
| 5. c | 61. a | 117. b | 173. c | 229. a | 285. e | 341. d |
| 6. c | 62. d | 118. e | 174. d | 230. a | 286. c | 342. c |
| 7. b | 63. d | 119. e | 175. c | 231. a | 287. d | 343. d |
| 8. b | 64. e | 120. c | 176. a | 232. d | 288. b | 344. a |
| 9. a | 65. a | 121. a | 177. b | 233. d | 289. e | 345. e |
| 10. e | 66. b | 122. c | 178. a | 234. d | 290. e | 346. c |
| 11. b | 67. e | 123. e | 179. c | 235. a | 291. c | 347. e |
| 12. d | 68. d | 124. a | 180. a | 236. a | 292. e | 348. d |
| 13. d | 69. c | 125. a | 181. a | 237. c | 293. c | 349. d |
| 14. b | 70. e | 126. b,e | 182. d | 238. a | 294. e | 350. a |
| 15. c | 71. e | 127. d | 183. c | 239. b | 295. c | 351. d |
| 16. a | 72. b | 128. d | 184. e | 240. c | 296. e | 352. e |
| 17. a | 73. d | 129. a | 185. a | 241. c | 297. b | 353. e |
| 18. d | 74. a | 130. b | 186. c | 242. b | 298. c | 354. b |
| 19. d | 75. d | 131. b | 187. b | 243. c | 299. e | 355. c |
| 20. - | 76. a | 132. b | 188. c | 244. a | 300. d | 356. e |
| 21. a | 77. c | 133. b | 189. c | 245. a | 301. d | 357. e |
| 22. e | 78. a | 134. d | 190. a | 246. b | 302. b | 358. b |
| 23. c | 79. a | 135. b | 191. d | 247. a | 303. c | 359. d |
| 24. a | 80. a | 136. b | 192. d | 248. b | 304. a | 360. e |
| 25. c | 81. 0-130° | 137. a | 193. c | 249. b | 305. a | 361. e |
| 26. e | 82. a | 138. d | 194. b | 250. c | 306. c | 362. c |
| 27. c | 83. a | 139. c | 195. b | 251. d | 307. a | 363. d |
| 28. b | 84. c | 140. d | 196. d | 252. a | 308. b | 364. d |
| 29. d | 85. a | 141. a | 197. a | 253. b | 309. a | 365. d |
| 30. a | 86. e | 142. a | 198. c | 254. e | 310. c | 366. c |
| 31. e | 87. d | 143. c | 199. d | 255. b | 311. c | 367. a |
| 32. a | 88. e | 144. a | 200. b | 256. e | 312. c | 368. b |
| 33. c | 89. a | 145. c | 201. c | 257. b | 313. c | 369. a |
| 34. c | 90. c | 146. b | 202. b | 258. e,b | 314. a | 370. d |
| 35. c | 91. c | 147. b | 203. a | 259. e | 315. d | 371. e |
| 36. e | 92. c | 148. d | 204. a | 260. e | 316. b | 372. a |
| 37. d | 93. a | 149. a | 205. b | 261. d | 317. a | 373. e |
| 38. a | 94. a | 150. e | 206. d | 262. b | 318. d | 374. a |
| 39. a | 95. c 300-1500 | 151. d | 207. b | 263. d | 319. a | 375. d |
| 40. d | 96. b | 152. b | 208. c | 264. d | 320. d | 376. b |
| 41. a | 97. c | 153. d | 209. a | 265. e | 321. b | 377. d |
| 42. d | 98. a | 154. e | 210. b | 266. e | 322. e | 378. a |
| 43. e | 99. a | 155. c | 211. b | 267. d | 323. a | |
| 44. c | 100. c | 156. a | 212. c | 268. a | 324. c | |
| 45. b | 101. c | 157. a | 213. c | 269. c | 325. e | |
| 46. c | 102. a | 158. d | 214. a | 270. b | 326. d | |
| 47. b | 103. b | 159. c | 215. c | 271. b | 327. c | |
| 48. b | 104. d | 160. a | 216. c | 272. e | 328. c | |
| 49. b | 105. a | 161. b | 217. a | 273. a | 329. d | |
| 50. e | 106. e | 162. e | 218. b | 274. b | 330. a | |
| 51. c | 107. a | 163. a | 219. c | 275. a | 331. c | |
| 52. c | 108. c | 164. b | 220. d | 276. d | 332. a | |
| 53. a | 109. c | 165. e | 221. d | 277. b | 333. e | |
| 54. b | 110. d | 166. b | 222. a | 278. e | 334. d | |
| 55. c | 111. e | 167. a | 223. b | 279. b | 335. a | |
| 56. a | 112. c | 168. b | 224. a | 280. e | 336. e | |