

109/2022

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. For Barium based oral contrast, barium concentrations are expressed as :
(A) %w/w (B) mOsm/kg
(C) gm% (D) mg%
2. Which among the following CT reconstruction technique is used for bone imaging and virtual colonoscopy?
(A) SSD (B) MIP
(C) miniIP (D) All of the above
3. Which among the following is true about laws of electromagnetic induction?
(A) A change of magnetic flux linked with a conductor induces an electromagnetic force in the conductor
(B) The magnitude of the induced electromagnetic force is proportional to the rate of change of magnetic flux and to the area of the circuit
(C) The induced electromagnetic force is in such a direction that it always opposes the change of magnetic flux, which induced the electromagnetic force
(D) All of the above
4. Hounsfield unit 0 (zero) represents which among the following :
(A) Water (B) Air
(C) CSF (D) Blood
5. The rating of a three-phase generator operating at 100 kV and 500 mA is :
(A) 500 kW (B) 200 kW
(C) 50 kW (D) 20 kW
6. SI unit for electric current is :
(A) Ampere (B) Volt
(C) Watt (D) Coulomb

A

3

[P.T.O.]

7. Which along the choice, listed the members of Electromagnetic spectrum in order of decreasing wave length?
- (A) Radiowaves, Visible light, gamma rays, X-rays
 - (B) X-rays, gamma rays, visible light, radiowaves
 - (C) Radiowaves, visible light, X-rays, gamma rays
 - (D) Radiowaves, X-rays, visible light, gamma rays
8. SI unit of Radio activity :
- (A) Gray
 - (B) Becquerel
 - (C) Sievert
 - (D) Tesla
9. X-ray tube is made of :
- (A) Burmese glass
 - (B) Pyrex glass
 - (C) Duralux glass
 - (D) Gorilla glass
10. Which among the following is not correct?
- (A) X-ray tube current refers to the number of electrons flowing per second from filament to target
 - (B) X-ray tube current refers to the number of electrons flowing per second from anode to cathode
 - (C) X-ray tube current of 200 mA produces twice as many X-rays as 100 mA
 - (D) All are correct
11. Regarding Tungsten, which is not correct?
- (A) High atomic number making it efficient in production of X-rays
 - (B) High melting point
 - (C) Atomic number-94
 - (D) Melting point-3370°C
12. The intensity of the X-ray beam that leaves the X-ray tube is not uniform throughout all portions of the beam due to :
- (A) Saturation voltage
 - (B) Space charge
 - (C) Tube shielding
 - (D) Heel effect
13. A step-up transformer :
- (A) Increases voltage and decreases current
 - (B) Decreases voltage and increases current
 - (C) Increases voltage and current
 - (D) Decreases voltage and current

14. A rectifier :
- (A) Converts direct current to alternating current
 - (B) Rectify and stabilises fluctuation in voltage
 - (C) Allows current to flow in both directions
 - (D) Allows current to flow in one direction only
15. Photoelectric effect yields :
- (A) characteristic radiation
 - (B) a negative ion
 - (C) a positive ion
 - (D) all of the above
16. All among the following increases attenuation except :
- (A) Energy of radiation
 - (B) Density of absorber
 - (C) Atomic number of absorber
 - (D) Electrons per gram of absorber
17. The amount of scatter radiation reaching an X-ray film increases with increasing :
- (A) Field size
 - (B) Part thickness
 - (C) Kilovoltage
 - (D) All of the above
18. Grid ratio is :
- (A) Total radiation (primary and scatter) absorbed by a grid
 - (B) Primary radiation absorbed by a grid
 - (C) Scatter radiation absorbed by a grid
 - (D) Ratio of the height of lead strips to the distance between them
19. Temporal filtering is a technique for :
- (A) Noise smoothing
 - (B) Edge enhancement
 - (C) Subtraction
 - (D) None of the above
20. In MRI image noise is decreased by all except :
- (A) Short TE
 - (B) Smaller voxel size
 - (C) Larger number of averages
 - (D) Surface coils
21. In MRI, the slice thickness is selected by :
- (A) Slice selection gradient
 - (B) Frequency of RF pulse
 - (C) Bandwidth of RF pulse
 - (D) All of the above
22. In MR imaging, short TR and short TE gives :
- (A) T1 weighted images
 - (B) T2 weighted images
 - (C) Proton Density (PD) images
 - (D) FLAIR images

23. Which among the following is a non-contrast MR perfusion imaging technique?
 (A) TOF (B) SPACE
 (C) ASL (D) VIBE
24. Which among the following muscles help in neck flexion?
 (A) Sternocleidomastoid (B) Biceps
 (C) Deltoid (D) Pectoralis major
25. Lateral end of uterine tube opens into :
 (A) Cervix (B) Uterine cavity
 (C) Peritoneal cavity (D) Fornix
26. Shoulder joint is formed by _____ of scapula :
 (A) Glenoid (B) Coracoid
 (C) Acromion (D) Spinous process
27. Regarding kidneys, which among the following is incorrect?
 (A) Left kidney is at a lower level than right kidney
 (B) Kidneys are located at T11-L3 level
 (C) Kidneys are placed obliquely, with upper pole more medially placed than lower pole
 (D) Renal hilum with pelvis is seen on medial side of kidney
28. There are _____ number of thoracic vertebra :
 (A) 2 (B) 5
 (C) 7 (D) 12
29. _____ law states that, a steady current flowing through a metallic conductor is proportional to the potential difference between its ends, provided the temperature remains constant :
 (A) Faraday's law (B) Joule's law
 (C) Ohm's law (D) Lenz's law
30. Mammography units typically operates at :
 (A) 25 to 30 kVp (B) 60 to 120 kVp
 (C) 50 to 75 kVp (D) 80 to 140 kVp
31. ICRP recommended effective dose limit for a occupational worker per year in mSv is :
 (A) 1 (B) 10
 (C) 15 (D) 20

32. Which among the following is correct as per AERB regulations?
- (A) Wear TLD badge at below lead apron
 - (B) Wear TLD badge at wrist level
 - (C) TLD badge provide radiation safety to patient
 - (D) TLD badge can be stored in control console room of X-ray equipment
33. Which among the following is recommended by AERB for an X-ray technologist?
- (A) Risk allowance
 - (B) Risk leave/radiation leave
 - (C) Maximum permissible working hours – 5 hours/day
 - (D) None of the above
34. Correct order of film processing :
- (A) Development, washing, fixing, rinsing, drying
 - (B) Fixing, rinsing, development, washing, drying
 - (C) Development, rinsing, fixing, washing, drying
 - (D) Fixing, washing, development, rinsing, drying
35. Ring artefact in CT scan is due to :
- (A) Failure of detector
 - (B) Patient movement
 - (C) High density material in field
 - (D) Averaging of liner attenuation coefficient in a given voxel that is heterogenous in composition
36. Mediators of defense in inflammation includes :
- (A) Red Blood Cells
 - (B) Leucocytes
 - (C) Platelets
 - (D) Megakaryocyte
37. Which of the following is not a cardinal sign of inflammation as described by celsus?
- (A) Rubor (Redness)
 - (B) Tumor (Swelling)
 - (C) Odor (Smell)
 - (D) Calor (Heat)
38. The central zone of necrosis in tuberculous infection is called :
- (A) Infarct
 - (B) Caseous
 - (C) Osseous
 - (D) Hematoma

39. The term neoplasia means :
- (A) New growth (B) New cancer
(C) New lesion (D) New disease
40. Ovulation occurs on _____ th day of a normal 28 day menstrual cycle :
- (A) 7 (B) 14
(C) 21 (D) 28
41. Which among following is cytoplasmic organelle?
- (A) Nucleus (B) Peroxisome
(C) Ribosome (D) All of the above
42. Which among the following is essential for maintaining blood calcium level?
- (A) Thyroid gland (B) Parotid gland
(C) Adrenal gland (D) Parathyroid gland
43. Most reliable discriminator of malignant and benign tumors is :
- (A) Pleomorphism (B) Metastasis
(C) Size (D) Vascularity
44. Programmed cell death under genetic control is called :
- (A) Necrosis (B) Apoptosis
(C) Infarct (D) Hamartoma
45. The most frequent cause of purulent inflammation is :
- (A) Bacterial infection (B) Malignancy
(C) Infarction (D) Autoimmune
46. Which of the following statements is not correct about the filter material used in X ray tubes?
- (A) The material chosen must be attenuate X rays principally by means of photoelectric effect
(B) Material must not have an absorption edge at an energy close to the energies of the photons that it is desired to use
(C) Thickness of the filter material used will be 1 mm
(D) Tiny pin holes in the filter will produce tiny completely unfiltered and unacceptable beams

47. Which of the following statements is not correct about the conventional x ray films?
- (A) Silver bromide/silver iodide particles are suspended in gelatin
 - (B) Photographic effect of the silver bromide/silver iodide particles arises from those impurities present in the emulsion
 - (C) Blue dye is added to base for firm adhesion of emulsion to the base
 - (D) Super coat consists of clear gelatin
48. Which of the following statements is not correct about the development?
- (A) Action of developer is to convert the crystals containing a latent image to black speck of silver
 - (B) Bromine barrier refers to the inability of the developer to reduce silver bromide/silver iodide crystal without any latent image to silver
 - (C) Sensitivity speck refers to built up most successive silver atoms during development to metallic silver
 - (D) Extremely powerful developing agent can overcome the bromine barrier even in the absence of latent image
49. Which of the following statements is not correct about the image unsharpness?
- (A) Geometric unsharpness increases with increase in OFD
 - (B) Movement unsharpness is kept minimum with large FFD
 - (C) Deliberate use of movement blurring is used in radiography of Sternum and thoracic spine
 - (D) Macro-radiography suffers from movement unsharpness ,not from geometric unsharpness
50. Which of the following statements is not correct about the Bennett's fracture?
- (A) One should include whole of 1st metacarpal in AP view of thumb
 - (B) Position the patient sitting along the side of the couch with neutral position of the hand and forearm
 - (C) Ensure that the hypothenar eminence is not superimposed over the 1st metacarpal
 - (D) Centering point is metacarpophalangeal joint of thumb
51. Which of the following statements is not correct about the Scaphoid fracture?
- (A) PA wrist with ulnar deviation is used
 - (B) Place small pad under Metacarpophalangeal joint of hand to maintain wrist in close contact with film
 - (C) Centering point is radial styloid process
 - (D) Reexamination may be needed after 14 days of initial exposure

52. Which of the following statements is not correct about the trans thoracic lateral view of shoulder?
- (A) Vertical bucky is used
 - (B) Raise the unaffected arm and rest on patients head
 - (C) Center at the head of humerus through opposite axilla
 - (D) Direction of central ray 10 degree cephalic tilt
53. Which of the following statements is not correct about the dental radiography?
- (A) Projection towards crown gives rise to elongation of the tooth shadow
 - (B) Some degree of foreshortening is permissible and elongation to be avoided
 - (C) Angulation of the tube for upper jaw premolars -tube occlusal plane angle 40 degrees
 - (D) Lower jaw incisors tube is centered upwards to symphysis menti at an angle of 25-30 degrees to occlusal plane
54. Which of the following statements is not correct about the salivary gland?
- (A) Parotid duct opens in the mouth on a papilla opposite second molar tooth
 - (B) AP view of parotid Sialogram centering on the angle of mandible on the same side
 - (C) Occlusal view is taken to see the Sub mandibular duct calculus (inferosuperior)
 - (D) Tube is rotated 25 degrees towards head in taking parotid lateral oblique view
55. Which of the following statements is not correct about the mastoids and petrous bone?
- (A) 35 degree fronto-occipital view is the single exposure technique to see both mastoids
 - (B) In occipitovertical view, the baseline to film angle is 50 degrees
 - (C) In Fronto-occipital view (per orbital view) centering is in midline between orbits.
 - (D) IAM demonstration is used for detection of Acoustic Neuromas
56. Which of the following statements is not correct about the anterior oblique view of chest?
- (A) For left anterior oblique view, left shoulder is in contact with cassette and rotate the right side away until the thorax is at an angle 60 degree to the film
 - (B) For right anterior oblique view, right shoulder is in contact with cassette and rotate the left side away until the thorax is at an angle 60 degree to the film
 - (C) Center point is at medial border of scapula remote from the film at the level of T5
 - (D) Beam horizontal at 90 degree to the film

57. Which of the following statements is not correct about the lateral soft tissue view of neck?
- (A) Patient sit /stand in the lateral position
 - (B) Tuck the chin to show the larynx to best advantage
 - (C) Centering at 1 inch above the cricoid cartilage
 - (D) Use 60 Kvp for maximum tissue contrast
58. Which of the following statements is not correct about the AP view of diaphragm?
- (A) Double exposure technique is used to see the excursion of diaphragm
 - (B) Centering at mid line at the level of xiphoid sternum
 - (C) Direction of beam 15 degree caudal tilt
 - (D) In double exposure, each exposure should be half that normally used for a PA chest
59. Which of the following statements is not correct about the Optic foramen view?
- (A) Patient lies prone at the centre of couch
 - (B) Place the orbit of the side under examination in mid line ,check nose and chin in contact with couch top
 - (C) Median sagittal plane parallel to the film, and radiographic base line at 35 degree to the vertical
 - (D) Center through the orbit near the film
60. Which of the following statements is not correct about the anterior oblique view of sternum?
- (A) Patient lies prone on center of couch, raise the opposite side of the trunk to 60 degree and turn the head to face raised side
 - (B) Centering point 10 cm from spinous process of T5 on the side remote from the film
 - (C) Central ray vertical at 90 degree to the film
 - (D) Long exposure method can be used to diffuse rib shadows
61. Which of the following statements is not correct about the AP open mouth view for C1-C3 vertebrae?
- (A) Patient in supine position with neck slightly extended
 - (B) Central ray directed to center of open mouth
 - (C) Central ray vertical to the film
 - (D) Patient can be also examined either in supine or erect position
62. Which of the following statements is not correct about the SI joint view?
- (A) AP/ PA view of sacrum is used to demonstrate SI joint
 - (B) For SI joint AP view central ray tilted 15-20 degree caudally
 - (C) Centering in mid line above pubic symphysis
 - (D) Smaller tilt angle used for male patients and larger angle for females

63. Which of the following statements is not correct about the Sub mento vertical view of cranium?
- (A) Patient is facing the x ray tube with hyper extended neck
 - (B) Median sagittal plane is at right angle and radiographic base line parallel to film
 - (C) Center at the chin midway between angle of mandible
 - (D) Horizontal beam with 15 degree cranial tilt
64. Which of the following statements is not correct about the occipito-frontal view for PNS?
- (A) Also called Caldwell view
 - (B) Median sagittal plane and radiographic base line are at right angle to the film
 - (C) Centering point at the external occipital protuberance
 - (D) Central ray horizontal with tube angled 20 degree caudal
65. Which of the following statements is not correct about the axial view of the calcaneum?
- (A) Dorsiflex the ankle of the side of examination and place the heel on the film
 - (B) Centering at middle of plantar aspect of foot
 - (C) Vertical beam beam to the foot
 - (D) Dorsiflex the foot if fracture is not suspected
66. Which of the following statements is not correct about the tunnel view of the knee?
- (A) Seat the patient on couch and flex the knee
 - (B) Flex the knee and rest the cassette supported by sand bag
 - (C) Central ray 90 degree angulation to the shaft of tibia will demonstrate anterior aspect of inter condylar notch
 - (D) Centering point apex of patella
67. Which of the following statements is not correct about the AP view of symphysis view?
- (A) Patient lying supine with legs extended and knees slightly flexed
 - (B) Centre in mid line to symphysis pubis
 - (C) Central ray directed vertical and tube angled 20 degree to the head
 - (D) In suspected subluxation, erect weight bearing view recommended (Ferguson's view)
68. Which of the following statements is not correct about the Bed side radiography?
- (A) AP view is more useful in intubated and sick patients
 - (B) Lateral radiographic is labeled with side closest to the cassette
 - (C) Para vertebral gutter technique involves rotating the right side 5-10 degrees anterior (RAO) to align the posterior ribs along the divergent beam
 - (D) Left hemidiaphragm is more clearly seen on the anterior aspect

69. Which of the following statements is not correct in emergency department radiography?
- (A) About the lateral decubitus as the problem solving film used to differentiate pneumothorax v/s pleural effusion
 - (B) Ribs AP view for suspected posterior ribs fractures
 - (C) Skin folds on AP projections in neonate mimics pneumothorax
 - (D) Sternum lateral view used to demonstrate fractures
70. Which of the following statements is not correct about Contrast media?
- (A) Double contrast technique of Gastro intestinal tract uses both positive and negative contrast
 - (B) Water soluble iodinated contrast is more suitable in case of suspected tracheo-esophageal fistula
 - (C) Non ionic contrast can be used in patients with renal failure
 - (D) Overnight fasting is advised before IV contrast study to prevent aspiration of stomach contents in the setting of contrast reaction
71. Which of the following statements is not correct about barium studies?
- (A) High density barium 250% weight/volume is used specifically for Double contrast study
 - (B) Demonstration of C-loop in barium meal study is with RAO position in over couch technique
 - (C) Per oral pneumocolon is the technique used for examining the descending colon
 - (D) Most important projection in suspected Hirshsprung's disease is lateral view of rectum to visualize the narrow segment
72. Which of the following statements is not correct about IVU?
- (A) Regarding patient preparation, only 4 hour fasting needed in children
 - (B) Nephrogram study means visualization of contrast in the renal parenchyma
 - (C) Compression is ideally given after the visualization of contrast in the urinary bladder
 - (D) Erect view is used in IVP to study renal ptosis
73. Which of the following statements is not correct?
- (A) About MCU study in children is contra indicated in acute urinary infection
 - (B) In RGU, contrast should be diluted to 1/4th
 - (C) Micturating film is taken in AP oblique view to see the urethra in profile
 - (D) In RGP, contrast is injected directly to the ureters through a catheter

74. Which of the following statements is not correct about HSG?
- (A) Optimal timing of HSG is between 7-10 days from the 1st day of starting menses
 - (B) High osmolar contrast is relatively better in visualization of uterine cavity and Fallopian tubes
 - (C) Buscopan injection is given for relieving the spasm of Fallopian tubes preventing tubal spillage
 - (D) HSG using Foley's catheter is much better than cannula technique to visualize the endocervical canal
75. Which of the following statements is not correct about T-tube cholangiogram?
- (A) Ideal time of T-tube cholangiogram is 7-10 days after surgery
 - (B) Ideally contrast medium is diluted in order that small stones are not obscured
 - (C) Steep head down tilt is required to opacify the intra hepatic ducts in patients with sphincteroplasty
 - (D) Turning the patient towards right side will readily opacify left lobe ducts
76. Which of the following statements is not correct about barium enema?
- (A) Air is insufflated when barium traverses splenic flexure
 - (B) Antispasmodic drug is indicated in any patient if marked /repeated spasm occurs during filling phase
 - (C) Additional view for sigmoid colon is prone film with tube angled cranially
 - (D) Delay of 7-10 days is advised after deep biopsy, snare polypectomy and acute colitis
77. Which of the following statements is not correct about mammography?
- (A) On screening mammography, if only single view is taken the chance for missing malignancy is around 25%
 - (B) True lateral view is required for impalpable lesion requiring pre op localization
 - (C) Axillary tail is best seen in supero-inferior view centered in axillary tail
 - (D) Latero-medial view is advocated to highlight the lesions in inner half of breast
78. Which of the following statements is not correct about IVP?
- (A) Double dose IVP is used for emergency situations like trauma or colic without any prior preparations
 - (B) One minute nephrogram is ideally to be taken at the end of expiration
 - (C) For distal ureters supine oblique films are taken after voiding
 - (D) Limited IVU for follow up or prostatism includes control radio graph, 15 minute post contrast full length and full bladder film only

79. Which of the following statements is not correct about RGP?
- (A) Undiluted contrast material is used
 - (B) Over distension of collecting system causes extravasation into renal parenchyma
 - (C) Is associated with more chance of infection than AGP
 - (D) Indicated to detail the anatomy which is not adequately demonstrated by IVP/CT/MRI
80. Which of the following statements is not correct about urethrography?
- (A) Descending urethrography will detail anatomy of bladder neck
 - (B) Ascending urethrography will detail anatomy up to posterior urethra
 - (C) Interruption of micturition will permit assessment of sphincter incompetence
 - (D) Distension of urethra is best achieved with viscous contrast material
81. Which of the following statements is not correct about AGP?
- (A) Determine the site of obstructive ureteric lesions that has not been defined by other non invasive techniques
 - (B) To demonstrate ureteral fistula and leaks
 - (C) To obtain upper tract urine for cytology/bacteriology
 - (D) Over distension of upper tract causes loin pain both in normal and transplant kidneys
82. Which of the following statements is not correct about myelography?
- (A) Water soluble contrast myelography will show complete filling of fine recesses such as nerve root sheaths which are not provided by oil based contrast media
 - (B) 22 Gauge needle is preferred for lumbar puncture
 - (C) Sufficient quantity of contrast is achieved when as estimated by fluoroscopy to fill the theca to the level of L3 vertebral body.
 - (D) In total myelography, lumbar region is examined first, then cervical and finally dorsal region
83. Which of the following statements is not correct about galactography?
- (A) Main value for investigation of nipple discharge
 - (B) During galactography, size and margins of duct are demonstrated and any intraductal lesions are seen
 - (C) Blood stained nipple discharges is always caused by breast carcinoma
 - (D) Irregular narrowing of duct with distal dilatation is found in invasive carcinoma
84. Which of the following statements is not correct about Bronchography?
- (A) Used to investigate recurrent haemoptysis or bronchopleural fistula
 - (B) Contraindicated even if there is partial compromise of pulmonary function
 - (C) Approaches include cricothyroid puncture, nasal/trans oral drip and tracheal intubation under GA/LA
 - (D) Delayed films will demonstrate distal filling

85. Which of the following statements is not correct about PET scan?
- (A) Modern non invasive imaging for quantification of radioactivity in vivo
 - (B) In PET scan imaging, quality of obtained data is poor/noisy and low spatial resolution
 - (C) Positron emitting isotope is administered to patient undergoes beta decay in the body to form positron and neutrino
 - (D) Standardized uptake Value (SUV) is calculated at the end of study
86. Which of the following statements is not correct about 4D CT?
- (A) Refers to multi phase CT of neck used to locate abnormal parathyroid glands
 - (B) 4D indicates that imaging is performed in multiple phases of contrast with time being the 4th dimension in addition to the multi planar format of CT
 - (C) Typical protocol consists of scanning in 3 phases
 - (D) Delayed phase approximately 120 seconds after start of contrast injection
87. Which of the following statements is not correct about PACS?
- (A) Typical PACS consists of input from digital or digitized devices
 - (B) Major limitation is the quality of images and capital cost
 - (C) Difference between PACS and DICOM that PACS is a medical image storage and archive hub while DICOM represents International communication Standard
 - (D) None of the above
88. Which of the following statements is not correct about Computer Radiography (CR)?
- (A) Uses photostimulable phosphor as image receptor
 - (B) CR plate is exposed to a small high intensity laser resulting in trapped electrons to return to their valence bands letting blue light
 - (C) CR plate can be rest using bright white light
 - (D) Photostimulable phosphor has special property of storing x ray energy in latent form
89. Which of the following statements is not correct about digital Breast tomosynthesis?
- (A) Imaging technique that allows a volumetric reconstruction of whole breast
 - (B) In DBT, x ray tube make a longitudinal movement during which series of images are acquired
 - (C) V-DBT offers highest 3D resolution at maximum speed
 - (D) Narrow angle with little exposure allows a fast but low resolution 3D images

90. Which of the following statements is not correct about DSA?
- (A) Images are at least 1024×1024 pixel matrix
 - (B) Non contrast image of the region of interest is called mask image
 - (C) Subtraction images appear clear than the source images
 - (D) Pixel shifting either Manual or automatic can minimize mis-registration caused by the patient movement
91. Which of the following statements is not correct about gamma camera?
- (A) Also called scintillation /Anger cameras
 - (B) Permit the acquisition only in planar images
 - (C) Scintillator material used is thallium activated sodium iodide
 - (D) None of the above
92. Which of the following statements is not correct about SPECT?
- (A) Offer better details, contrast and spatial information than planar nuclear imaging
 - (B) SPECT machine combine an array of gamma cameras (ranging from 1-4) which rotate around patient on gantry
 - (C) SPECT images are reconstructed 3D images from projection data in axial, coronal and sagittal planes
 - (D) Use of multiple gamma cameras increases detector efficiency and spatial resolution
93. Which of the following statements is not correct about CT colonography?
- (A) Also called virtual colonoscopy
 - (B) Used as screening test for colorectal carcinoma
 - (C) CT scanning ideally performed in supine and left lateral position
 - (D) Can visualize colon beyond obstruction or narrowing
94. Which of the following statements is not correct about MRI
- (A) Permanent magnets have low field strengths about 0.15-0.4 Tesla
 - (B) Resistive MRI magnets uses copper in the shape of solenoid or Helmholtz pair coil
 - (C) Superconducting magnets are made up of alloys such as Niobium/titanium or Niobium/Tin surrounded by copper
 - (D) Superconducting magnets uses constant power supply to achieve magnetic field
95. Which of the following statements is not correct about MRA:
- (A) Black blood imaging uses spin echo based sequences
 - (B) Non contrast enhanced MRA can be performed with TOF and Phase Contrast methods
 - (C) MOTSA is a TOF technique
 - (D) TOF is usually used for MR venography

96. Which of the following statements is not correct about MR Contrast?
- (A) Gd-DTPA was the first IV contrast agent approved for the human use
 - (B) Gadolinium has the large magnetic moment related to its 7 unpaired orbital electrons
 - (C) Gadolinium is excreted rapidly by glomerular filtration
 - (D) Gadolinium at any concentration primarily affects T1 relaxation
97. Which of the following statements is not correct about HRCT techniques?
- (A) Thin sections in MDCT ranges from 0.625 to 1.25 mm
 - (B) Primarily uses large FOV
 - (C) Uses 100-200 mAs
 - (D) Uses high spatial frequency or sharpening algorithm (Bone algorithm) for reconstruction
98. Which of the following statements is not correct about Fluoroscopy and fluorography?
- (A) Images have relatively high signal to noise ratio
 - (B) Uses 0.5-5mA
 - (C) Digital fluoroscopy uses flat panel detectors instead of x ray image intensifiers and video camera
 - (D) Fluorography uses pulsed x ray exposures to form x ray images
99. Which of the following statements is not correct about pediatric radiography?
- (A) Uses short exposure times and high mA
 - (B) Grids should be used only when body part examined is greater than 10 cm
 - (C) Adequate inspiration will be with right hemidiaphragm at the level of 7th rib posteriorly
 - (D) Films taken at expiration shows tracheal kink towards right side
100. Which of the following statements is not correct about lymphangiogram?
- (A) Lymphography is useful when CT examination is negative
 - (B) Dye used is Lipiodol
 - (C) Early x rays will readily demonstrate lymphatics and not lymph nodes
 - (D) X ray chest is taken to visualize mediastinal nodes

SPACE FOR ROUGH WORK

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