

1. Regarding Barium Enema examination, which of the following is **not** true ?
 - (A) instant enema is used in ulcerative colitis
 - (B) soap and water enema is better than complete bowel wash in the preparation of double contrast barium enema
 - (C) pneumatosis intestinalis is a rare complication of barium enema study
 - (D) 24 hour post evacuation film is a must to rule out Hirshsprung's disease
2. Regarding IVP examination, which of the following is **not** true ?
 - (A) delayed nephrogram is a sign of decreased renal function
 - (B) ball pyelogram is described in contracted kidneys
 - (C) adequate hydration of the patient is essential when ionic contrast medium is used
 - (D) erect films are used to evaluate nephroptosis
3. Regarding emergency IVP examination, which of the following is **not** true ?
 - (A) done in casualty without any prior preparation of patient
 - (B) limited films like KUB, 5 minute and 15 minute films, full bladder are taken
 - (C) usually done for evaluating renal trauma or acute ureteric obstruction
 - (D) contrast dose is 1 ml of 300 mg of Iodine/kg body weight
4. Regarding MCU examination, which of the following is **not** true ?
 - (A) oblique films are better to visualize the VUR
 - (B) urinary bladder must be filled before doing MCU
 - (C) most common indication in children is recurrent UTI
 - (D) obstructive lesions of female lower urinary tract is much lower than the boys.
5. Regarding Double contrast examination of GIT, which of the following is **not** true ?
 - (A) used for evaluation of mucosal ulcers
 - (B) used for evaluation of obstructive lesions
 - (C) uses high density of barium for surface coating
 - (D) useful when single contrast study fails to detect small lesions
6. Regarding CT scan machine, which of the following is **not** true ?
 - (A) tube rating is given by mHu
 - (B) slip ring technology is used in helical scanning
 - (C) 3rd generation CT scanners are rotate-fixed type
 - (D) flat panel detectors are used in 64 slice scanners
7. Regarding Rare earth screens, which of the following is **not** true ?
 - (A) emits green light
 - (B) are more effective than calcium tungstate screens
 - (C) are more cheaper than blue light emitting screens
 - (D) are used for high quality X-ray examinations
8. Regarding imaging of biliary tract, which of the following is **not** true ?
 - (A) Direct cholangiography provides the most precise delineation of the anatomy of biliary ducts
 - (B) ERCP is the best technique to differentiate benign from malignant disease
 - (C) MRI is the best technique for evaluation of the wall of extrahepatic biliary ducts
 - (D) Cholangiography is the most accurate technique for determining the precise level of obstruction

9. Regarding 1st generation fluoroscopy, which of the following is **not** true ?
(A) consists of X-ray tube, X-ray table and fluoroscopic screen
(B) fluoroscopic material was barium fluocyanide
(C) green screen was synonym for fluoroscopy
(D) examination was carried out in a dark room wearing red goggles
10. Regarding discovery of X-rays, which of the following is **not** true ?
(A) Wilhelm Conrad Roentgen was a German physicist
(B) discovered X-rays on November 8th, 1895
(C) noticed fluorescence of small piece of paper coated with barium platinocyanide- which lead to the discovery of X-rays
(D) noticed Nobel prize for physics in 1902
11. Regarding SI units, which of the following is **not** true ?
(A) SI unit of radionuclide activity is Becquerel
(B) SI unit of absorbed dose is Rad
(C) SI unit of magnetic flux density is tesla
(D) SI unit of charge is coulomb
12. Regarding X-ray tube filament, which of the following is **not** true ?
(A) X-ray tube current refers to number of electrons flowing per second from filament to target
(B) filament is tungsten wire about 0.2 mm in diameter
(C) tungsten must be heated to at least 2000 degrees C for thermionic emission
(D) tungsten is selected as filament because of high melting point and has little tendency to vapourise
13. Regarding Heel effect, which of the following is **not** true ?
(A) intensity of X-ray beam that leaves X-ray tube is not uniform throughout all Portion of beam is called heel effect
(B) intensity of film exposed on the anode side of tube is significantly less than cathode side
(C) heel effect is less noticeable when small FFD are used
(D) in equal target film distances, heel effect will be less for smaller films
14. Regarding X-ray image intensifier, which of the following is **not** true ?
(A) input Phosphor in old image intensifier was Zinc-cadmium sulfide
(B) input Phosphor in newer image intensifier is cesium iodide
(C) cesium iodide crystals are oriented in horizontal direction
(D) phosphor thickness of cesium iodide is 3 times less than Zn-Cd-Sulfide
15. Regarding X-ray image intensifier, which of the following is **not** true ?
(A) photocathode is a photoemissive metal (commonly a combination of antimony and cesium compounds)
(B) photocathode is directly applied of Cs I input Phosphor
(C) electrostatic focusing lens is made up of aluminium
(D) photoelectrons are produced from the photocathode proportional to the intensity of light from input Phosphor
16. Regarding X-ray image intensifier, which of the following is **not** true ?
(A) Accelerating anode has positively charged
(B) output Phosphor is silver activated zinc-cadmium sulfide
(C) thin layer of aluminium is plated onto the fluorescent screen to prevent stray radiation
(D) glass tube of the image intensifier is about 2 - 4 mm thick

17. Regarding increased True Fog, which of the following is **not** true ?
 (A) caused by low speed film
 (B) caused by contaminated or exhausted developer
 (C) caused by excessive time/temperature development
 (D) caused by improper film storage
18. Regarding subject contrast, which of the following is **not** true ?
 (A) low kVp will produce high subject contrast
 (B) kVp has no effect on film blackening
 (C) mAs controls film blackening
 (D) attenuation by photoelectric effect makes the most important contribution to the subject contrast
19. Regarding conventional tomography, which of the following is **not** true ?
 (A) tomographic angle is the amplitude of tube travel expressed in degrees
 (B) section thickness is inversely proportional to amplitude of tube travel
 (C) zonography utilizes tomographic arc of less than 10 degree
 (D) wide angle tomography is best for tissues with high contrast (bone)
20. Regarding ERCP, which of the following is **not** true ?
 (A) is the definitive investigation in suspected case of pancreatic divisum and annular pancreas
 (B) is contra indicated in all types of acute pancreatitis
 (C) is used to take biopsy and to relieve obstruction by doing sphincterotomy
 (D) is more sensitive than CT to identify small intra ductal neoplasm and calculus
21. Regarding Enteroclysis, which of the following is **not** true ?
 (A) bilbao-dotter tube tip is placed just distal to DJ flexure
 (B) single and double contrast studies can be done
 (C) is the most sensitive investigation in suspected case of small bowel malignancy
 (D) can detect subtle adhesions and most valuable in sub acute small intestinal obstruction
22. Regarding barium swallow, which of the following is **not** true ?
 (A) can detect asymptomatic esophageal webs
 (B) is the definitive investigation in suspected dysphagia lusoria
 (C) double contrast study will show early mucosal lesions
 (D) water soluble contrast must be used in early post operative patients
23. Regarding Barium meal, which of the following is **not** true ?
 (A) true lateral view of stomach should be taken in post operative patients and suspected gastric ulcer
 (B) RAO is taken to unwind the C-loop
 (C) erect films are useful in suspected volvulus
 (D) gastro-esophageal varices are best assessed in barium filled phase
24. Regarding barium meal follow through, which of the following is **not** true ?
 (A) 50% diluted barium is used in single contrast study
 (B) in all cases of intestinal obstruction, barium meal follow through is the initial study of choice
 (C) erect films are useful in suspected diverticulosis
 (D) transit time can be reduced by using cold water for diluting barium

25. Regarding HSG, which of the following is **not** true ?
 (A) usually done at the 10th day of LMP
 (B) pregnancy is the absolute contraindication
 (C) when done with Foley's catheter, endocervix could not be assessed
 (D) is the best modality for detecting congenital uterine malformations
26. Regarding Conventional X-ray tube, which of the following is **not** true ?
 (A) space charge effect will limit the flow of electrons from filament
 (B) focusing cup is made from nickel
 (C) in a double filament X-ray tube, one filament will be larger than the other
 (D) stereoscopic angiographic tube, more than 3 filaments are used
27. Regarding Conventional X-ray tube, which of the following is **not** true ?
 (A) aged tubes acquire a bronze Coloured sunburn due to vapourisation of tungsten
 (B) only less than 1% of energy of the electrons are converted into X-rays
 (C) anode angle varies from 6 - 20 degrees
 (D) as the anode angle is made smaller, the apparent focal spot becomes larger
28. Regarding Conventional X-ray tube, which of the following is **not** true ?
 (A) anode rotation speed is 3000 - 3600 rpm
 (B) lubricant for anode rotation is metallic silver
 (C) anode stem is made up of beryllium
 (D) compound anode is made up of molybdenum/graphite and tungsten, thin layer of tungsten-rhenium alloy attached to the disc serves as actual target
29. Regarding photoelectric effect, which of the following is **not** true ?
 (A) always yield 3 end products namely characteristic radiation, negative photoelectron and positive ion
 (B) the tighter an electron is bound in the orbit, less likely it is to be involved in photoelectric reaction
 (C) enhances natural tissue contrast
 (D) incident photon must have sufficient energy to overcome the binding energy of electron
30. Regarding factors determining the quantity of scatter radiation, which of the following is **not** true ?
 (A) FFD (B) field size (C) part thickness (D) kilo voltage (kVp)
31. Regarding attenuation, which of the following is **not** true ?
 (A) is the reduction in the intensity of X-ray beam either by absorption or reflection
 (B) attenuation of polychromatic and monochromatic beams are exponential
 (C) amount of attenuation depends on energy of radiation, atomic number and density of electron/gram of tissue
 (D) high atomic number elements attenuate more radiation
32. Regarding Autotransformer, which of the following is **not** true ?
 (A) consists of a double winding wound on a laminated closed core
 (B) provides voltage for X-ray tube filament current
 (C) provides voltage for primary of high voltage transformer
 (D) works on principle of self induction

33. Regarding Filament circuit, which of the following is **not** true ?
- (A) filament transformer, primary winding obtain high voltage from high voltage transformer
 - (B) current flow is typically 3 - 5 A
 - (C) filament transformer is a step down transformer
 - (D) filament transformer is placed in the same oil filled grounded metal tank as the high voltage transformer
34. Regarding inherent filtration, which of the following is **not** true ?
- (A) materials responsible are glass envelope, insulating oil and window in the housing
 - (B) varies between 0.5 - 1 mm aluminium equivalent
 - (C) beryllium window tubes are used to increase inherent filtration
 - (D) filtration increases the mean energy of X-ray beam
35. Regarding added filtration, which of the following is **not** true ?
- (A) aluminium is an excellent filter for low energy radiations
 - (B) copper is an excellent filter for high energy radiations
 - (C) copper is never used by itself as filter material
 - (D) in combined filter, aluminium absorbs most of the radiation and copper absorbs characteristic radiation of aluminium
36. Regarding K-edge filters, which of the following is **not** true ?
- (A) make use of k-absorption edge of elements with atomic numbers more than 60
 - (B) offer advantages when imaging barium and iodine
 - (C) heavy metal filters decreases high energy photons, but increases low energy photons
 - (D) heavy metal filters offers decreased absorbed dose and increase image contrast
37. Regarding X-ray beam restrictors, which of the following is **not** true ?
- (A) collimator is the best all round X-ray beam restrictor
 - (B) when decreasing the size of X-ray field by the collimators, factor must be reduced to keep the radiographic density constant
 - (C) PBL is automatic collimator
 - (D) collimator functions as decrease in scatter radiation
38. Regarding grids, which of the following is **not** true ?
- (A) interspace materials are either aluminium or organic compounds
 - (B) grids with aluminium interspace material are stronger than organic interspaces
 - (C) invented by Dr. Gu-stave Bucky in 1913
 - (D) exposure factors when using aluminium interspaces are lower
39. Regarding grid ratio, which of the following is **not** true ?
- (A) grid cassette fairly have high grid ratio
 - (B) higher the grid ratio, better is the function
 - (C) parallel grids are used in fluoroscopic spot film device
 - (D) grid ratios are indicated at the top of grid by the manufacturer
40. Regarding grid, which of the following is **not** true ?
- (A) primary transmission indicates only the primary radiation absorbed
 - (B) Bucky factor indicates the absorption of secondary radiation
 - (C) higher the grid ratio, the contrast improvement factor will be high
 - (D) the contrast improvement factor is the ultimate test of grid performance

41. Regarding Xeroradiography, which of the following is **not** true ?
 (A) photoconductor used in amorphous selenium
 (B) selenium is deposited as a thin layer onto a sheet of aluminium
 (C) no interface layer is present between selenium and aluminium
 (D) selenium is deposited by condensation of vaporised liquid in high vacuum on the aluminium sheet
42. Regarding Xeroradiography, which of the following is **not** true ?
 (A) selenium layer is 150 - 400 microns
 (B) protective overcoating of xeroradiographic plate is gelatin
 (C) scorotron/cirotron are the charging devices for xeroradiographic plates
 (D) sensitivity of the plates to X-rays depends on selenium thickness and on the energy (kVp) of X-ray beam
43. Regarding the advantages of Xeroradiographic mammogram from film-screen mammogram, which of the following is **not** true ?
 (A) high patient absorbed dose (B) edge enhancement
 (C) broad exposure latitude (D) deletions
44. Regarding Circular tomography, which of the following is **not** true ?
 (A) equipment is cheap (B) produces uniform section thickness
 (C) exposure time is short (D) parasite streaks are not present
45. Regarding Pan tomography, which of the following is **not** true ?
 (A) produces a panoramic roentgenogram of curved surface
 (B) X-ray tube rotates, but film holder remains stationary
 (C) patient remains stationary throughout the examination
 (D) most commonly used as orthopantomography
46. Regarding Photographic density, which of the following is **not** true ?
 (A) measurement of film blackness is called Photographic density
 (B) total fog density of fresh X-ray film will average about 0.075
 (C) total density exhibited by the radiograph is the sum of the density of 2 emulsions in double coated films
 (D) density is expressed in numbers
47. Regarding radiation protection, which of the following is **not** true ?
 (A) In stochastic effect of radiation exposure, the probability of occurrence of side effects increases with increase in absorbed dose
 (B) annual effective dose equivalent limit for occupational exposure is 30 mSv
 (C) annual effective dose equivalent limit for lens of eye is 15 rems
 (D) an individuals effective dose equivalent limit in rems should not exceed his/her age in years
48. Regarding protective barriers, which of the following is **not** true ?
 (A) if a wall holds a fixed film changer (like chest stand for chest radiography), use factor (U) for that particular wall is One
 (B) use factor (U) for the ceiling is always Zero
 (C) use factor (U) for the secondary barriers is always Zero
 (D) occupancy factor (T) for corridors is 1/4