

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

RADIOGRAPHER

(Under BFUHS)

QUESTION BOOKLET NO.

SESSION OF THE CANDIDATE

OMR ANSWER SHEET NO.

ROLL NO:

FULL SIGNATURE OF THE CANDIDATE

FULL SIGNATURE OF THE INVIGILATOR

FULL SIGNATURE OF THE OBSERVER

Time Allowed: 2.00 Hours (11.00 AM to 1.00 PM)

Maximum Marks: 90

1. Use BLACK FINE TIP BALL PEN only. Use of pencil is not allowed.
2. Write your Roll number on the OMR answer-sheet and also on the question-booklet only in the space provided for the purpose and at no other place in the question booklets and Answer-sheet
3. Enter the Question Booklet Set and Number on the OMR Answer-sheet and also darken the corresponding bubbles with BLACK FINE TIP BALL PEN.
4. Do not put any marks anywhere in the Question booklet /on the OMR Answer-sheet.
5. **There are 90 objective type questions in all of 1 Mark each.** Before attempting the questions, check that the Question-booklet is complete. In case any question/part of question or page is missing, inform the Centre Superintendent within 5 minutes of the start of the examination. After that no claim will be entertained.
6. **Each question is followed by four alternative responses listed as A), B), C) and D) out of which only one is correct / most correct. In case, all the ovals are left blank, there will be deduction of marks @ 0.25 mark for each such unattempted question. Fifth oval 'E' (introduced for security purpose) is to be darkened in case you do not want to attempt the question to avoid negative marking.**
7. To open the question booklet, remove the seal gently when asked to do so. Handover the OMR Answer-sheet to the officer on duty on the completion of the time before you leave the examination hall.
8. **The candidates are permitted to carry his/her question booklet after completion of the examination but OMR Sheets are compulsory required to be deposited with the invigilator.**
9. A candidate who create disturbance of any kind or changes his/her seat or is found in possession of any paper possibility of any assistance to him/her or unfair means will be expelled from the examination by the Centre superintendent/Observer, whose decision shall be final. ("Expulsion" for this purpose would mean cancellation of the entire examination of the candidate).
10. **THE CANDIDATES ARE NOT PERMITTED TO CARRY ANY TELECOMMUNICATION EQUIPMENT SUCH AS WATCH, CELLULAR PHONE, WIRELESS SET, SCANNER ETC. INSIDE THE EXAMINATION HALL.**
11. For rough work, use only the blank space of the Question booklet.
12. The candidates will not be allowed to leave the examination hall during the examination.
13. Borrowing any material is not allowed.
14. The answer-sheet is designed for Computer evaluation. If the instructions are not followed properly, the candidate alone shall be responsible for the resultant loss.
15. Smoking/Refreshment shall not be allowed in the Entrance Test Centre/Hall.
16. Male candidates shall affix their Left Thumb Impression (LTI) while Female candidates shall affix Right Thumb Impression (RTI) at the prescribed place on the OMR answer sheet, Question Booklet and attendance sheet. The Centre superintendent shall also obtain and retain it for record.
17. The candidate must fill both the question booklet number and OMR answer sheet number on the attendance sheet.
18. No candidate shall be allowed to leave the centre before **1.00 PM**.

1. Which of the following screens are not used in industrial radiography
 - a. Lead
 - b. Fluorescent
 - c. Silver halide
 - d. All of the above.

2. Changing the grid ratio from 5:1 to a ratio 10:1, what will happen?
 - a. Decrease patient exposure
 - b. Increase image contrast
 - c. Decrease KV or mas
 - d. Decrease xray tube heating

3. Single coated xray films are used in all except
 - a. Fluoroscopy
 - b. Mammography
 - c. CT scan
 - d. X ray chest

4. Which of the following Radionuclide has shortest half life.
 - a. Radioactive Cobalt
 - b. Technetium 99m
 - c. Radioactive phosphorus
 - d. Radioactive Iodine.

5. Annual effective radiation dose for an X ray technician is less than
 - a. 5mRem
 - b. 100mRem
 - c. 100mSv
 - d. 20mSv

6. Which of the following device does not help to reduce patient radiation dose?
 - a. Collimator
 - b. Gonad shield
 - c. Grid
 - d. Fast intensifying screen

7. Following are life saving drugs in contrast reaction except
 - a. Inj Adrenaline
 - b. Inj Phenargan
 - c. Inj Ranatidine
 - d. Inj Efficorlin.

8. Thermoluminescence dosimeter utilizes which of the following crystals
 - a. Silver bromide
 - b. Aluminium oxide
 - c. Sodium sulphite
 - d. Lithium fluoride

9. Which of the following intensifying screen phosphor material will have high patient dose
 - a. Yttrium
 - b. Gadolinium
 - c. Lanthanum
 - d. Calcium tungstate.

10. Which of the following are possible long term somatic effects of radiation exposure
 - a. Inborn defects
 - b. Leukemia
 - c. Nausea and vomiting
 - d. Carcinogenesis

11. The unit of measurement to express occupational exposure is
 - a. RAD(Gy)
 - b. REM(sv)
 - c. RBE
 - d. Roentgen(c/kg)

12. Patient dose increases as
 - a. FSS(focal spot size) decreases
 - b. FOV(field of view) increases
 - c. FOV decreases
 - d. FSS increases.

13. Which of the following personnel monitoring devices used in diagnostic radiology are considered most sensitive and accurate
 - a. TLD
 - b. Film Badge
 - c. Optically stimulated luminance
 - d. Pocket dosimeter

14. In radiographic x ray tubes filters are generally composed of
 - a. Copper
 - b. Aluminium
 - c. Tin
 - d. Lead

15. Lead apron is used to protect the technician from
- Scattered radiations
 - Remnant radiations
 - Natural radiations
 - Primary x-ray beam
16. The unit of exposure in diagnostic X ray tube is
- RAD
 - Roentgen
 - Becquerel
 - REM.
17. Which of the following are considered mechanical waves
- Ultrasound waves
 - X-rays
 - Beta rays
 - Gamma rays
18. As per ICRP guidelines, the upper dose limit for cataract formation is
- 1000mSv
 - 150mSv
 - 10mSv
 - 2000mSv
19. What is the normal adult oral temperature
- 39°C
 - 37°C
 - 36.4°C
 - 38°C
20. Cells are most radiosensitive in which phase of cell division
- Mitosis
 - Prophase
 - Meiosis
 - Anaphase
21. Which of the following are least radiosensitive cells
- Bone marrow
 - Blood cells
 - Interstitial epithelium
 - Nerve cells
22. Nephrogenic systemic fibrosis is caused by
- Gadolinium
 - Iodine
 - Barium
 - Iohexol
23. After contrast administration, breast feeding should be avoided for
- 48hrs
 - 24hrs
 - not required
 - 1week
24. Rule of Ten is for
- Old women
 - Women in reproductive age
 - Pregnant women
 - Menopausal women
25. In Sialography, post secretory film is taken after how much duration
- 5min
 - 15min
 - 25min
 - 10min
26. T tube Cholangiogram is performed after how many days of surgery
- 5days
 - 10days
 - 2days
 - 7 days
27. MRCP is a non invasive technique that uses heavily
- T1 weighted
 - PD weighted
 - T2 weighted
 - FIESTA
28. In Lymphoscintigraphy, sentinel node refers to
- Second node
 - Third node
 - First node
 - Fourth node

29. Site of injection Tc^{99m} colloid for detection of nodes in axillary region
- Cubital fossa
 - Axillary region
 - First and second interdigital webbed space
 - Second and third interdigital webbed space
30. Somatostatin receptor imaging is indicated in all except
- Carcinoid
 - Gastrinoma
 - Pheochromocytoma
 - Endometrial carcinoma
31. First step in Cardio pulmonary Resuscitation (CPR)
- Circulation maintenance
 - Breathing management
 - BP monitoring
 - Airway clearance
32. Renal masses are best detected in which phase
- Nephrogenic phase
 - Cortico medullary phase
 - Delayed phase
 - Non contrast scan
33. Following are the indications for Hysterosalpingography except
- Infertility
 - Post tubal surgery
 - Recurrent spontaneous abortions
 - Post menopausal bleeding
34. Leech Wilkinson cannula is used in
- Small bowel enema
 - HSG
 - Pyelography
 - Myelography
35. Which is the investigation of choice for imaging herniated disc
- Myelography
 - USG
 - NCCT
 - MRI
36. In IVU, compression is contraindicated in following conditions except
- Recent Trauma
 - Recent surgery
 - renal calculi
 - abdominal masses
37. In IVU which the best view to evaluate uretero - vesical junction calculus
- Plain film
 - Prone film
 - Post void film
 - Full film with compression
38. In GIT double contrast effect is produced due to
- Air
 - CO₂
 - Both
 - None
39. In peroral pneumocolon, air is injected/given
- Via nasogastric tube
 - Orally
 - perrectal
 - none of the above
40. Buscopan injection used to inhibit intestinal motility is contraindicated in
- Paralytic ileus
 - Close angle Glaucoma
 - Myasthenia gravis
 - All the above.
41. Best imaging modality for definitive diagnosis of Acoustic Neuromas is
- X ray skull
 - CE MRI
 - CECT
 - USG
42. Following modalities are used for Tumor ablation except
- Ethanol injection
 - Cryoablation
 - High intensity focused ultrasound(HIFU)
 - Elastography

43. Tendons can be imaged on all modalities excepty
- MRI
 - USG
 - Conventional arthrography
 - CT scan.
44. All are contraindications for PET- CT scan except
- Recent Radiotherapy(<8wks)
 - Recent Chemotherapy(<2wks)
 - Poorly controlled Diabetes
 - Recurrent vomiting.
45. For double contrast Barium Enema , concentration of barium required is
- 15% w/v
 - 100% w/v
 - 10% w/v
 - 30% w/v
46. Cephalometry technique is used in
- Orthomatic
 - Implant treatment
 - Orthodontic
 - All the above
47. Sudden drop in systemic BP occurs at
- Arteries
 - Vein
 - Capillaries
 - Arterioles
- 48.The image intensifier tube works on the principle of
- Photoemission
 - Thermonic emission
 - Multiple induction
 - None of the above
49. In modern Image intensifier, the input screen is made up of
- Zinc Cadmium sulphide-silver activated
 - Zn sulphide
 - Calcium tungstate
 - Cesium Iodide
50. Conventional fluoroscopy works on the principle of
- Phosphorescence
 - Fluorescence
 - Both
 - None of the above
- 51.Sphincter of Oddi is located in
- Stomach
 - Biliary system
 - Central nervous system
 - Urinary system.
- 52.Which of the following regulates the fine control of Blood pressure
- Midbrain
 - Median eminence
 - Medulla
 - Hypothalamus
53. Which of the following is minimally excreted in urine
- Urea
 - Creatinine
 - Chloride
 - Uric acid
54. Ventilation/ perfusion ratio is maximum in
- Base
 - apical region
 - Middle region
 - none of the above
55. The primary x-ray beam penetration through a patient can be increased by increasing the
- KV
 - MAS
 - Film focus distance
 - Beam area
56. Changing the KV from 90 to 70 will generally
- increase patient exposure
 - Decrease iodine soft tissue contrast
 - require an increase in MAS by at least a factor of 4
 - Decrease calcium soft tissue contrast.

57. Which of the following is the functional unit of Kidneys
- Renal tubule
 - renal plexus
 - Nephron
 - renal vein.
58. Right side of mediastinal shadow is not formed by
- Superior vena cava
 - Rt atrium
 - Rt innominate artery
 - Rt Ventricle
59. Tracheal angle is increased in which chamber enlargement of heart
- Rt Ventricle
 - Rt atrium
 - left atrium
 - Lt Ventricle.
60. X-rays are in nature similar to
- Beta rays
 - Gamma rays
 - Cathode rays
 - de- Broglie waves
61. Ultrasound waves are produced by means of a crystal
- Ferromagnetic
 - Ferroelectric
 - Paramagnetic
 - Piezoelectric
62. Investigation of choice in acute cholecystitis is
- Technetium scan
 - USG
 - CT Scan
 - Plain x-ray abdomen
63. Xeroradiography is mainly used for cancer
- Lung
 - Breast
 - Prostate
 - Thyroid
64. Pneumothorax is best demonstrated by taking a radiograph of patient in
- Full inspiration
 - Supine
 - Expiration
 - Inspiration
65. Imaging of choice for Bronchiectasis is
- x-ray chest
 - MRI
 - HRCT
 - Bronchography
66. Isotope used in Myocardial perfusion scan is
- Technetium
 - Thallium
 - Gallium
 - Stannous pyrophosphate
67. Radio pharmaceutical used for scanning of spleen is
- ^{99m}Tc DTPA
 - Gallium citrate
 - Cr labeled RBC
 - ^{99m}Tc sulphur colloid
68. In a case of imperforate anus, radiological examination should after
- Immediately after birth
 - Not before 24 hrs
 - 12-18hrs after birth
 - 6-10hrs after birth
69. In a suspected case of ileal perforation, contrast media of choice is
- Barium sulphate
 - Lipiodol
 - Dionosil viscous
 - Gastrograffin
70. MCU is the investigation of choice in
- Bladder injuries
 - Vesicoureteric reflux
 - Hydronephrosis
 - Bladder tumors.

71. Modality of choice to detect Hyperacute infarct
- NC CT scan
 - CECT scan
 - CE MRI
 - Difussion MR.
72. The numeric information contained in each pixel in CT scan is called
- Intensity
 - Attenuation coefficient
 - CT number
 - Density
73. MIP images are widely used in
- Angiography
 - Virtual Colonoscopy
 - Bone structure
 - All the above.
74. The main advantage of helical CT over conventional CT is improved
- Patient dose
 - Spatial resolution
 - Image reconstruction time
 - Data acquisition rate.
75. CT fluoroscopy minimizes radiation doses by using
- Low tube current
 - Filtration
 - High tube current
 - Lower collimator thickness.
76. CT noise is reduced by
- Detector thickness
 - Increase mAs
 - Decrease scan time
 - Increased voxel size
77. In Dual source CT, which of the following filters are used
- Lead
 - Tin
 - Rhenium
 - Tungstate
78. Transrectal scan is best performed at which frequency
- 8-12
 - 5-7.5
 - 3-5
 - 3-7-5
79. Which body tissue has greatest amount of attenuation
- Fat
 - Bone
 - Water
 - Muscle
80. Which of the following has best lateral resolution
- 15cm
 - 0.06cm
 - 2cm
 - 6cm
81. EUS is
- External ultrasound
 - Elastography ultrasound
 - Endoscopic ultrasound
 - All the above
82. Metallic material can result in
- Aliasing artifact
 - Partial volume
 - Beam hardening artifact
 - All the above
83. Contrast media used during CT can result in
- Ring artifacts
 - Partial volume artifacts
 - Beam hardening artifacts
 - Incomplete projection artifacts
84. The speed of sound is
- 1340m/s
 - 1640m/s
 - 1440m/s
 - 1540m/s

85. Following factors increase spatial resolution in CR except
- Smaller plate
 - Reduced phosphorescence lag
 - Thinner phosphor plate
 - Larger pixel size
86. DIACOM is
- Diagnostic imaging and Communication in Medicine
 - Digital imaging and Computation in Medicine
 - Diagnostic imaging and Computation in Musculoskeletal Imaging
 - Digital Imaging and Communication in Mammography.
87. Potential hazard in MRI are due to
- Magnetic field
 - Claustrophobia
 - Auditory effect due to noise
 - All of the above
88. Stryker's view is done for
- Hip
 - Knee
 - Shoulder
 - Ankle
89. Bilateral hand posterior oblique projection is called-----
- Stenver's view
 - Frog projection
 - Rhese projection
 - Ball catcher projection
90. The best projection to demonstrate the frontal sinuses is
- Towne's
 - Water's
 - Caldwell
 - Submentovertical

