

BABA FARID UNIVERSITY OF HEALTH SCIENCES, FARIDKOT

MRI Technician

(under Baba Farid University of Health Sciences, Faridkot)

QUESTION BOOKLET

THUMB IMPRESSION OF THE CANDIDATE

OMR ANSWER SHEET

ROLL NO:

FULL SIGNATURE OF THE CANDIDATE

Coordinator stamp

FULL SIGNATURE OF INVIGILATOR

Time Allowed: 2:00 Hour (11:00 AM to 1:00 PM)

Maximum Marks: 100

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 100 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. **As per the instructions of Govt. of Punjab, Department of Personnel letter no. 1/2/2022-5PP/659 dated 16/11/2022, the candidate are compulsory required to qualify the Punjabi language Part-A of question paper by scoring atleast 50% marks failing which the candidate will not be eligible.**
8. 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.
9. **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.**
10. 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).
11. **THE CANDIDATES ARE NOT PERMITTED TO CARRY ANY TELECOMMUNICATION EQUIPMENT SUCH AS WATCH, CELLULAR PHONE, WIRELESS SET, SCANNER ETC. INSIDE THE EXAMINATION HALL.**
12. For rough work, use only the blank space of the Question booklet.
13. The candidates will not be allowed to leave the examination hall during the examination.
14. Borrowing any material is not allowed.
15. 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.
16. Smoking/Refreshment shall not be allowed in the Entrance Test Centre/Hall.
17. 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.
18. The candidate must fill both the question booklet number and OMR answer sheet number on the attendance sheet.
19. No candidate shall be allowed to leave the centre before **01:00 PM.**

Part-A

- 1

31. 'ਛਪਾਰ ਦਾ ਮੇਲਾ' ਕਿਹੜੇ ਮਹੀਨੇ ਲੱਗਦਾ ਹੈ?
 ਓ. ਸਾਉਣ ਮਹੀਨੇ ਅ. ਫੱਗਣ ਮਹੀਨੇ
 ਏ. ਭਾਦੋਂ ਮਹੀਨੇ ਸ. ਚੇਤ ਮਹੀਨੇ
32. 'ਮਾਈਏਂ ਪਾਉਣ' ਦੀ ਰਸਮ ਤੋਂ ਕੀ ਭਾਵ ਹੈ?
 ਓ. ਗੀਤ ਗਾਉਣਾ ਅ. ਜਾਗੋ ਕੱਢਣਾ
 ਏ. ਸਿਰ ਪਾਣੀ ਪਾਉਣਾ ਸ. ਵਟਣਾ ਮਲਣਾ
33. 'ਝੂਮਰ' ਕਿਸ ਦਾ ਨਾਚ ਹੈ?
 ਓ. ਮਰਦਾ ਦਾ
 ਅ. ਤੀਵੀਆਂ ਦਾ
 ਏ. ਕੁੜੀਆਂ ਦਾ
 ਸ. ਉਪਰੋਕਤ ਵਿਚੋਂ ਕੋਈ ਨਹੀਂ
34. 'ਘੋੜੀ' ਲੋਕ-ਗੀਤ ਕਿਸ ਵੱਲੋਂ ਗਾਇਆ ਜਾਂਦਾ ਹੈ?
 ਓ. ਭਰਜਾਈ ਵੱਲੋਂ ਅ. ਪਤੀਸ ਵੱਲੋਂ
 ਏ. ਭੈਣ ਵੱਲੋਂ ਸ. ਮਾਸੀ ਵੱਲੋਂ
35. 'ਧੂਪੁ ਮਲਆਨਲੋ ਚਵਰੋ ਕਰੇ
 ਸਗਲ ਬਨਰਾਇ ਫੂਲੰਤ ਜੋਤੀ॥' ਖਾਲੀ ਥਾਂ ਭਰੋ।
 ਓ. ਗਗਨ ਅ. ਪਵਣੁ
 ਏ. ਦੀਪਕ ਸ. ਤਾਰਿਕਾ ਮੰਡਲ
36. ਵਾਕ ਪੂਰਾ ਕਰੋ- ਮਿਠ ਬੋਲੜਾ ਜੀ
।
 ਓ. ਓਹ ਕਦੇ ਨਾ ਬੋਲੈ ਕਉਰਾ
 ਅ. ਹਰਿ ਸਜਣੁ ਸੁਆਮੀ ਮੋਰਾ
 ਏ. ਹਰਿ ਸੱਜਣ ਸੁਆਮੀ ਮੋਰਾ
 ਸ. ਹਰਿ ਦਰਸਨੁ ਦੇਖਿ ਅਪਾਰਾ।
37. ਗੁਰੂ ਅਮਰਦਾਸ ਜੀ ਨੇ ਬਾਣੀ ਕਿੰਨੇ ਰਾਗਾਂ ਵਿੱਚ
 ਰਚੀ?
 ਓ. 19 ਰਾਗਾਂ ਵਿੱਚ
 ਅ. 17 ਰਾਗਾਂ ਵਿੱਚ
 ਏ. 29 ਰਾਗਾਂ ਵਿੱਚ
 ਸ. 31 ਰਾਗਾਂ ਵਿੱਚ
38. 'ਸੁਰਪਤ ਜੇਹੇ ਲੜ ਹਟੇ ਬੀਰ ਟਲੇ ਨ ਟਾਲੇ॥'
 'ਚੰਡੀ ਦੀ ਵਾਰ' ਦੀ ਉਕਤ ਸਤਰ ਵਿੱਚ 'ਸੁਰਪਤ'
 ਸ਼ਬਦ ਕਿਸ ਲਈ ਵਰਤਿਆ ਹੈ?
 ਓ. ਇੰਦਰ ਦੇਵਤਾ ਲਈ
 ਅ. ਵਿਸ਼ਨੂੰ ਦੇਵਤਾ ਲਈ
 ਏ. ਦੁਰਗਾ ਮਾਤਾ ਲਈ
 ਸ. ਬ੍ਰਹਮਾ ਜੀ ਲਈ
39. 'ਪਵਣੁ ਗੁਰੂ ਪਾਣੀ ਪਿਤਾ' ਸ਼ਬਦ ਵਿੱਚ ਗੁਰੂ ਨਾਨਕ
 ਦੇਵ ਜੀ ਕਿਨ੍ਹਾਂ ਲੋਕਾਂ ਦੀ ਪ੍ਰਸੰਸਾ ਕਰਦੇ ਹਨ?
 ਓ. ਸੱਚ ਬੋਲਣ ਵਾਲਿਆਂ ਦੀ
 ਅ. ਧਰਮ ਨੂੰ ਮੰਨਣ ਵਾਲਿਆਂ ਦੀ
 ਏ. ਜੁਝਾਰਵਾਦੀਆਂ ਦੀ
 ਸ. ਨਾਮ ਧਿਆਉਣ ਵਾਲਿਆਂ ਦੀ।
40. ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਕਿਸ ਕਾਵਿ-ਧਾਰਾ ਦੇ ਕਵੀ
 ਹਨ?
 ਓ. ਸੂਫੀ ਕਾਵਿ-ਧਾਰਾ ਦੇ
 ਅ. ਗੁਰਮਤਿ ਕਾਵਿ-ਧਾਰਾ ਦੇ
 ਏ. ਕਿੱਸਾ ਕਾਵਿ-ਧਾਰਾ ਦੇ
 ਸ. ਬੀਰ ਕਾਵਿ-ਧਾਰਾ ਦੇ
41. 'ਏ ਸਰੀਰਾ ਮੇਰਿਆ' ਸ਼ਬਦ ਕਿਸ ਗੁਰੂ ਸਾਹਿਬ ਦੀ
 ਰਚਨਾ ਹੈ?
 ਓ. ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ
 ਅ. ਗੁਰੂ ਅੰਗਦ ਦੇਵ ਜੀ
 ਏ. ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ
 ਸ. ਗੁਰੂ ਅਮਰਦਾਸ ਜੀ
42. 'ਚੋਟ ਪਈ ਦਮਾਮੇ॥' ਸਤਰ
 ਪੂਰੀ ਕਰੋ।
 ਓ. ਨਾਲੇ ਰੁੱਕੜੇ
 ਅ. ਸੀਹਣਿ ਸਾਰ ਦੀ
 ਏ. ਦਲਾਂ ਮੁਕਾਬਲਾ
 ਸ. ਮਹਖੇ ਦੈਂਤ ਨੂੰ

43.ਸ. ਭਗਤ ਸਿੰਘ ਦਾ ਜਨਮ ਕਦੋਂ ਹੋਇਆ?

- ੳ. 1909 ਈਸਵੀ ਵਿੱਚ
- ਅ. 1910 ਈਸਵੀ ਵਿੱਚ
- ੲ. 1908 ਈਸਵੀ ਵਿੱਚ
- ਸ. 1907 ਈਸਵੀ ਵਿੱਚ।

44.ਕਰਤਾਰ ਸਿੰਘ ਸਰਾਭਾ ਦਾ ਜਨਮ ਕਿੱਥੇ ਹੋਇਆ ਸੀ?

- ੳ. ਲੁਧਿਆਣਾ ਅ. ਪਟਿਆਲਾ
- ੲ. ਰੋਪੜ ਸ. ਜਲੰਧਰ

45. ਭੀਮ ਰਾਓ ਨੂੰ ਵਜ਼ੀਫ਼ਾ ਕਿਸ ਵੱਲੋਂ ਦਿੱਤਾ ਗਿਆ?

- ੳ. ਕਲੂਸਕਰ ਅ. ਬਤੌਦਾ ਰਿਆਸਤ
- ੲ. ਅਧਿਆਪਕ ਸ. ਪ੍ਰਿੰਸੀਪਲ

46. ਗਾਂਧੀ ਜੀ ਡਾਂਢੀ ਮਾਰਚ ਕਦੋਂ ਸ਼ੁਰੂ ਕੀਤਾ?

- ੳ. 1920 ਅ. 1930
- ੲ. 1935 ਸ. 1942

47.ਭਗਤ ਸਿੰਘ ਨੂੰ ਫਾਂਸੀ ਦੀ ਸਜ਼ਾ ਕਦੋਂ ਦਿੱਤੀ ਗਈ?

- ੳ. 23 ਮਾਰਚ 1941 ਅ. 24 ਮਾਰਚ 1941
- ੲ. 23 ਮਾਰਚ 1931 ਸ. 24 ਮਾਰਚ 1931

48. ਡਾ. ਅੰਬੇਦਕਰ ਦਾ ਜਨਮ ਕਿੱਥੇ ਹੋਇਆ?

- ੳ. ਮਹਾਰਾਸ਼ਟਰ ਅ. ਮੱਧ ਪ੍ਰਦੇਸ਼
- ੲ. ਕਰਨਾਟਕ ਸ. ਗੁਜਰਾਤ।

49. ਸ. ਕਰਤਾਰ ਸਿੰਘ ਸਰਾਭਾ ਦੇ ਪਿਤਾ ਜੀ ਦਾ ਕੀ ਨਾਂ ਸੀ?

- ੳ. ਕਿਸ਼ਨ ਰਾਏ ਅ. ਅਜੀਤ ਸਿੰਘ
- ੲ. ਟਹਿਲ ਸਿੰਘ ਸ. ਮੰਗਲ ਸਿੰਘ।

50.ਮਹਾਤਮਾ ਗਾਂਧੀ ਦਾ ਜਨਮ ਕਦੋਂ ਹੋਇਆ?

- ੳ. 1869 ਈ: ਅ. 1867 ਈ:
- ੲ. 1868 ਈ: ਸ. 1866 ਈ:

Part-B

51. PET stand for
- Positive electron tomography
 - Proton electron therapy
 - Positron emission tomography
 - Photon emitting tomography
52. The most common design configuration for clinical MR scanners is
- Open bore superconducting
 - Closed bore superconducting
 - Open bore permanent
 - Dipolar electromagnet
53. The first company to produce a clinical whole-body MRI scanner for commercial use was
- GE
 - Fonar
 - Siemens
 - Technicare
54. The direction of the main magnetic field (B_0) in a cylindrical closed bore scanner is
- Longitudinal (along the main axis) of the cylinder
 - Horizontal (cross-wise to the cylinder and parallel to the floor)
 - Vertical (cross-wise to the cylinder and perpendicular to the floor)
 - Can be at any angle depending on which gradients are turned on
55. Which of the following is not an advantage of high-field (≥ 1.0 T) MR scanners?
- Higher signal-to-noise
 - Better detection of calcifications and hemorrhage
 - Smaller artifacts around metallic implants
 - Better magnetic field homogeneity
56. Which of the following is not a source of production for gamma rays?
- Cobalt-60
 - Iridium-192
 - Caesium-167
 - Americium-241
57. Gyromagnetic property of proton is seen in
- MRI
 - CT
 - PET
 - USG
58. In MRI, paramagnetic substance cause
- Shortening of both T1 and T2 relaxation times
 - Shortening T2 relaxation times only
 - Shortening of T1 relaxation time only
 - No effect on T1 or T2 relaxation times
59. SI unit of absorbed dose of radiation is
- Roentgen
 - Gray
 - Sievert
 - Coulomb
60. The temperature of liquid helium is approximately
- 4 °K
 - 0 °K
 - 4 °K
 - 400 °C
61. Frequency of Ultrasound wave in USG is
- 200 Hz
 - 500 Hz
 - <2 MHz
 - > 2 MHz
62. The superconducting component in the main windings of nearly all clinical MR scanners is an alloy of
- Niobium (Nb) and Titanium (Ti)
 - Niobium (Nb) and Copper (Cu)
 - Nickel (Ni) and Titanium (Ti)
 - Nickel (Ni) and Copper (Cu)

63. Pushing the "big red button" near the door to a room housing an MRI scanner
- Immediately opens the door even if scanning is in progress
 - Initiates a controlled quench of the magnetic field
 - Turns off all electric power to the scanner and room
 - Calls emergency and sounds an alarm
64. BIRADS stand for
- Breast imaging reporting and data system
 - Best imaging reporting and data system
 - Brain imaging reporting and data system
 - Breast investigation reporting and data system
65. Which of the following is iso-osmolar iodine containing contrast?
- Iodixanol
 - Iohexol
 - Iopamidol
 - Diatrizoate
66. Alpha is similar to
- Electron
 - Proton
 - Neutron
 - Helium
67. The study using barium for large intestine is known as
- Barium meal follow through
 - Barium swallow
 - Barium enema
 - None of above
68. In which the following form of imaging harmonic imaging is related
- Sonography
 - Digital radiography
 - MRCP
 - Nuclear imaging
69. Time of flight (TOF) technique is employed in
- Spiral CT
 - MR angiography
 - CT angiography
 - Digital radiography
70. MRI is not better than CT for detection of
- Ligament injury
 - Soft tissue tumor
 - Meningeal pathology
 - Calcified lesion
71. High resolution computed tomography of the chest is the ideal modality for evaluating
- Pleural effusion
 - Interstitial lung disease
 - Lung mass
 - Mediastinal mass
72. Half life of Tc 99 is
- 6 hrs
 - 3 days
 - 10 Month
 - 12 years
73. The invisible image produced in the film emulsion by exposure to radiation or light is called the:
- Manifest image
 - Latent image
 - Photographic image
 - Radiologic image
74. When the current flowing through a wire reverses direction, the magnetic field around the wire
- Does not change
 - Increases
 - Disappears
 - Reverses direction

75. Which scanner is the heaviest (and would thus require the most floor support)?
- 0.35 T Permanent magnet system
 - 0.6 T Resistive magnet system
 - 1.5 T Superconductive system
 - 3.0 T Superconductive system
76. What is the "5 Gauss Line"?
- A place inside the scanner where x- and y-gradients differ in strength by less than 5 Gauss (5 mT).
 - The boundary in an MRI center inside of which one's credit cards will be erased.
 - A fringe field line that may pose danger to patients with certain pacemakers
 - A fringe field line in the scanner room safe for patients but which MR technologists should avoid crossing.
77. An artefact seen as black and white banding like zebra lines on the edge of FOV is
- Zipper artefact
 - Shading artefact
 - Moire artefact
 - Aliasing
78. Regarding MRI which of the following is true:
- Scanners using permanent magnets do not allow open design
 - Superconducting electromagnets used in scanners must be kept at absolute zero
 - Shim coils are used to improve field homogeneity
 - One Tesla magnetic field is 200 times the Earth's magnetic field strength
79. Poor magnetic field homogeneity may affect image quality in the following ways
- Shading artifacts
 - Spatial distortion
 - Poor fat suppression
 - All of the above
80. The Larmor frequency is
- Proportionate to the applied magnetic field
 - The same for each hydrogen atom within all tissues
 - Inversely proportional to the gyromagnetic ratio
 - Constant with varying external magnetic field strengths
81. Which of following is not true for ultrasound
- The unit of frequency Hertz (Hz) equals 10^3 cycles per second
 - The frequency of individual transducers is fixed
 - The intensity of US is under the operator's control.
 - The transmitter and receiver are the same
82. Which of following is not true for piezoelectric effect
- It is the ability of some materials to generate an electrical response to an applied mechanical stress
 - It is used in the production and detection of sound.
 - It uses ionising radiation.
 - The piezoelectric material used is lead zirconate titanate (PZT)
83. Which of the following is not MRI sequence?
- HASTE
 - FLAIR
 - SSD
 - SSFP
84. Diffusion weighted imaging measures
- Motion of water molecules
 - Motion of cells
 - Chemical composition of tissues
 - Ratio of water to fat

85. On T1WI which of the following appears hyperintense?
- Water
 - Fat
 - Calcification
 - Grey matter
86. Which of the following is true for isotopes of an element
- They have the same number of neutrons
 - They have the same physical properties
 - They have the same chemical properties
 - All isotopes are stable
87. Which of the following is not true for inversion recovery sequence?
- Spin echo sequence which is preceded by 180° pulse
 - Inversion time is time between inverting pulse and 90° pulse
 - It flips transverse magnetisation.
 - During inversion time interval tissues undergo T1 relaxation
88. After an X-ray undergoes photoelectric absorption by K-shell electron, which emission is least likely?
- Photoelectron
 - Scattered photon
 - K shell X-ray
 - L-shell X-ray
89. The loud noise produced by an MR system during a scan is primarily due to
- Vibrations of the gradient coils
 - Vibrations of the radiofrequency coils
 - Vibrations of the main magnet windings
 - Vibrations from the chiller and helium pump
90. False about Zone I of MRI is
- General people MRI access area
 - Needs no supervision
 - Magnetic fringe field is less than 50 Gauss
 - None of the above
91. Magnetic field gradients for imaging are typically measured in units of
- Millitesla per meter (mT/m)
 - Gauss per second (G/s)
 - Tesla (T)
 - Tesla per meter per second (T/m-s)
92. Use of a single element surface coil placed directly on the patient offers which advantages?
- High signal-to-noise.
 - Increased depth of penetration.
 - Capability for larger fields-of-view.
 - All of the above
93. MR imaging technique for the reconstruction of fat and water images based on the Chemical shift between fat and water
- Faraday technique
 - Dixon technique
 - Eddy technique
 - Magic technique
94. Photostimulable phosphors are read out using:
- Infrared
 - Microwaves
 - Red Light
 - RF
95. False for Radiofrequency coils is
- May be transmitter, receiver or both
 - Generate oscillating or rotating magnetic field parallel to the main field.
 - Magnetic field of coil is typically turned on for brief period of time called RF pulses
 - None of the above
96. The display capacity (megapixel, MP) of a radiology diagnostic workstation is most likely:
- 0.25
 - 0.5
 - 10
 - 3

97. The standard focal spot(mm) in mammography is:

- A. 0.1
- B. 0.2
- C. 0.3
- D. 0.6

98. True about Specific absorption rate is:

- A. Measured as watts per kilogram
- B. SAR values are calculated automatically by MR scanner
- C. SAR is directly proportional to the electrical conductivity of tissue
- D. All of the above

99. CT beam shaping filter (bow tie) is most likely made up of:

- A. Iron
- B. Copper
- C. Molybdenum
- D. Teflon

100. Which statement about ACR Safety Zones 1 and 2 is correct?

- A. Both Zones 1 and 2 lie outside the 5 Gauss line.
- B. Patient safety screening is required before entering Zone 1
- C. The general public should not be admitted to Zone 1; it is only for MR patients and their families.
- D. Patients with pacemakers can be at risk if allowed to enter Zone 2.

ANSWER KEY								
Recruitment test conducted on 17/05/2025 for post of MRI Technician under BFUHS, Faridkot								
Part A					Part B			
1	ਸ	26	ੳ		1	C	26	C
2	ਸ	27	ਸ		2	B	27	C
3	ੳ	28	ੲ		3	B	28	C
4	ਸ	29	ੳ		4	A	29	D
5	ੲ	30	ਅ		5	C	30	A
6	ੲ	31	ੲ		6	D	31	A
7	ੲ	32	ਸ		7	A	32	C
8	ਸ	33	ੳ		8	A	33	C
9	ੳ	34	ੲ		9	B	34	A
10	ਸ	35	ਅ		10	A	35	B
11	ੳ	36	ਅ		11	D	36	C
12	ੲ	37	ਅ		12	A	37	C
13	ਸ	38	ੳ		13	B	38	B
14	ੳ	39	ਸ		14	A	39	A
15	ਸ	40	ਅ		15	A	40	C
16	ੲ	41	ਸ		16	D	41	A
17	ੳ	42	ੲ		17	C	42	A
18	ਸ	43	ਸ		18	A	43	B
19	ੲ	44	ੳ		19	B	44	C
20	ੲ	45	ਅ		20	D	45	B
21	ਅ	46	ਅ		21	B	46	D
22	ੲ	47	ੲ		22	A	47	C
23	ੲ	48	ਅ		23	B	48	D
24	ਅ	49	ਸ		24	D	49	D
25	ਸ	50	ੳ		25	A	50	A