

**X-RAY TECHNICIAN EXAM
VADODARA MUNICIPAL CORPORATION**

Paper
Series

B

Questions : 100
Max Marks: 100

Date: 17 Dec.'23 Duration : 90

Please read the instructions carefully before attending the Question paper. All Questions are compulsory.

In conventional radiation therapy, daily fraction dose given will be:

- (A) 1 to 1.5 Gy (B) 1.8 to 2 Gy
(C) 2 to 2.8 Gy (D) None of the above
(E) Not Attempted

2. _____ is the cheapest and most commonly used imaging modality in the initial staging of Hodgkin's disease.

- (A) CT scan (B) MRI scan
(C) Ultra-sonogram (D) PET scan
(E) Not Attempted

3. The plane that divides the body into right and left halves:

- (A) Coronal plane (B) Axial plane
(C) Mid-axillary plane (D) Median sagittal plane
(E) Not Attempted

4. Radioactivity was first described by?

- (A) Roentgen (B) Becquerel
(C) Joseph Lister (D) Khorana
(E) Not Attempted

5. Maximum dose region in Cobalt-60 teletherapy lies at _____ cm from the surface.

- (A) 0.1 cm (B) 1 cm
(C) 5 cm (D) 0.5 cm
(E) Not Attempted

6. The salt used in X-ray studies of the Gastro-intestinal tract is:

- (A) Barium Sulphate (B) Bismuth Sulphate
(C) Thorium Dioxide (D) Tantalum Dioxide
(E) Not Attempted

7. Device which converts low voltage to high voltage and vice versa is known as:

- (A) Rectifier (B) Transformer
(C) Autotransformer (D) Cathode
(E) Not Attempted

8. SI unit of dose equivalent is?

- (A) Roentgens (B) Gray
(C) Rad (D) Sievert
(E) Not Attempted

9. The process by which electrons are emitted from a X-ray cathode filament is:

- (A) Ionization (B) Photoconduction
(C) Thermo luminescence (D) Thermionic emission
(E) Not Attempted

10. MRI stands for:

- (A) Magnetic Requisition Imaging (B) Magnetic Resonance Imaging
(C) Magnetic Rectification Imaging (D) Magnetic Resonant Imaging
(E) Not Attempted

11. Safe light used in dark room is related to film sensitive region of visible light as:

- (A) Low density (B) Low volt
(C) Low frequency (D) Low wavelength
(E) Not Attempted

12. Most vascular part of a bone is:

- (A) Epiphysis (B) Diaphysis
(C) Metaphysis (D) Epiphyseal cartilage
(E) Not Attempted

13. Geometric unsharpness can be reduced b:

- (A) Increasing object-image distance (B) Decreasing focus-image distance
(C) Using tube with large focal spot size (D) Reducing focal spot size
(E) Not Attempted

14. The concentration of detectable hydrogen nuclei in a biological tissue is termed as:

- (A) Spin density (B) Electron density
(C) Spin echo (D) Gyromagnetic ratio
(E) Not Attempted

15. AERB stands for:

- (A) Atomic Energy Ruling Body (B) Atomic Energy Regulatory Board
(C) Atomic Energy Rules Body (D) Atomic Energy Regulation Body
(E) Not Attempted

16. X-ray tube was discovered by?

- (A) Roentgen (B) William Coolidge
(C) Gregory Hounsfield (D) Nicolas Tesla
(E) Not Attempted



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17. Single coated films are used in:
(A) Chest radiography (B) Mammography
(C) Extremity radiography (D) Xeroradiography
(E) Not Attempted
18. Anode in mammography tube is made up of:
(A) Molybdenum (B) Rhenium
(C) Tungsten (D) Copper
(E) Not Attempted
19. For general purpose radiography minimum thickness of lead equivalent in protective apparel should be:
(A) 1 mm (B) 0.5 mm
(C) 2 mm (D) 5 mm
(E) Not Attempted
20. In a X-ray circuit, autotransformer is connected between:
(A) Cathode and anode (B) Source of current and primary of main transformer
(C) Primary and secondary of main transformer (D) Filament circuit and X-ray tube.
(E) Not Attempted
21. સોના કેરું કડું માડું સરી ગયું મમ મસ્તથી કેરું નામયોગી -
ઓળખાવો
(A) અધિકરણવાચક (B) કરણવાચક
(C) તાદર્થ્યવાચક (D) સબંધવાચક
(E) પ્રયત્ન કરવો નથી
22. નીચેનામાંથી કઈ સંધિ સાચી નથી?
(A) યોગેશ્વર = યોગ ઈશ્વર + (B) સર્વોદય = સર્વ ઉદય +
(C) પરોપકાર = પરોપ + કાર (D) ગંગોદક = ગંગા ઉદક +
(E) પ્રયત્ન કરવો નથી
23. તોફાની છોકરા કોને ગમે? રેખાંકિત શબ્દ ઓળખાવો.
(A) ગુણવાચક વિશેષણ (B) પરિમાણવાચક વિશેષણ
(C) દર્શક વિશેષણ (D) સાપેક્ષ વિશેષણ
(E) પ્રયત્ન કરવો નથી
24. દોરીને થૂંકથી ભીની કરો.વિભક્તિ ઓળખાવો - .
(A) પાંચમી (B) ત્રીજી
(C) ચોથી (D) બીજી
(E) પ્રયત્ન કરવો નથી
25. શોધી કાઢે દયિત જોઈને દૃષ્ટિ થાતીકયો છંદ છે ...?
(A) શિખરિણી (B) મંદાકાંતા
(C) પૃથ્વી (D) હરિણી
(E) પ્રયત્ન કરવો નથી
26. ગહન વિધિ છું મોજુએ છું, વળી ધનવર્ષણ અભિનવ સ્વરૂપે
પામું હું સદેહ વિસર્જન
(A) પૃથ્વી (B) માલિની
(C) તારિણી (D) અનુષ્ટુપ
(E) પ્રયત્ન કરવો નથી
27. નીચેનામાંથી વર્ણસગાઈનું સાચું દૃષ્ટાંત જણાવો.
(A) મહેતાજી આઘ્યાં, લાઘ્યા પ્રસાદ (B) વિપત પડ્યે ન વલખીએ, વલખે વિપત ન જાય.
(C) યામિની વ્યોમસર માંહે સરતી (D) સહુ ચલો જીતવા જંગ, બ્યૂગલો વાગે યા હોમ કરીને પડો ફતેહ છે આગે.
(E) પ્રયત્ન કરવો નથી
28. જાગને જાદવા કૃષ્ણ ગોવાળિયા, તુજ વિના ઘેનુમાં કોણ જાશેકયો છંદ છે -?
(A) સવૈયા (B) મનહર
(C) ઝૂલણા (D) સ્ત્રગ્ધરા
(E) પ્રયત્ન કરવો નથી
29. વાતચીતનો- ધીમો ઘોંઘાટ
(A) કલરવ (B) કલબલ
(C) કેકારવ (D) ખટખટ
(E) પ્રયત્ન કરવો નથી

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30. કઈ વિભક્તિ વિશેષણ માટેના પ્રત્યયો છે?
- (A) બીજી (B) છઠ્ઠી
(C) પહેલી (D) ચોથી
(E) પ્રયત્ન કરવો નથી
31. Normal renal threshold for glucose is :
- (A) 150 - 170 mg/dl (B) 70-110 mg/dl
(C) 90-140 mg/dl (D) 70-140 mg/dl
(E) Not Attempted
32. If a rare disorder with an early onset in life is inherited in such a way that male and female off-springs are equally affected, only homozygous persons are affected, then the mode of inheritance would be:
- (A) Autosomal dominant. (B) Autosomal recessive
(C) X-linked dominant (D) X-linked recessive.
(E) Not Attempted
33. The anti-phagocytic property of the group A streptococcus is associated with which of the following:
- (A) Hyaluronidase (B) Streptolysin S
(C) M. protein (D) Peptidoglycan
(E) Not Attempted
34. The basic unit of an Immunoglobulin is composed of:
- (A) 2 identical heavy and 2 identical light chains (B) 2 identical heavy and 2 different light chains
(C) 2 different heavy and 2 identical light chains (D) 2 different heavy and 2 different light chains
(E) Not Attempted
35. _____ plays an important role in sleep-wake cycle.
- (A) Spinal Cord (B) Cerebrum
(C) Hypothalamus (D) Epithalamus
(E) Not Attempted
36. _____ is used for determining HIV Infections.
- (A) ELISA Test (B) Lepromin Skin Test
(C) Widal Test (D) Mantoux Test
(E) Not Attempted
37. Localized area of ischaemic necrosis is mostly associated with:
- (A) Ascites (B) Petechiae
(C) Infarction (D) Emboli formation
(E) Not Attempted
38. Red blood Corpuscles are also known as :
- (A) Erythrocytes (B) Thrombocytes
(C) Leucocytes (D) Plasma
(E) Not Attempted
39. The complete absence of semen ejaculation is called:
- (A) Oligospermia (B) Hypospermia
(C) Hyperspermia (D) Aspermia
(E) Not Attempted
40. _____ is an example of gram positive bacilli.
- (A) Corynebacterium (B) Streptococci
(C) Staphylococci (D) Klebsiella
(E) Not Attempted
41. Which of the following are features of transudates ?
- i. Specific gravity below 1.018
ii. Specific gravity above 1.018
iii. Proteins less than 2.5 g/dl
- Bacteria usually present
- (A) i and ii (B) i and iii
(C) ii and iii (D) ii and iv
(E) Not Attempted
42. Which is the only tissue present in cardiovascular system?
- (A) Cartilage (B) Cardiac muscles
(C) Smooth muscles (D) Neuroglia tissue
(E) Not Attempted
43. _____ cell of pancreas secrete insulin.
- (A) Alpha (B) Beta
(C) Gamma (D) Delta
(E) Not Attempted



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44. The site for protein synthesis inside the cell is:
(A) Rough endoplasmic reticulum (B) Smooth endoplasmic reticulum
(C) Nucleus (D) Mitochondria
(E) Not Attempted
45. Which semisolid preparation is meant for external application to the skin?
(A) Tablet (B) Capsule
(C) Ointments (D) Powder
(E) Not Attempted
46. I _____ do this before the deadline.
(A) dare to (B) may have
(C) ought to (D) would have
(E) Not Attempted
47. _____ event is scheduled according to the plan.
(A) Each (B) Several
(C) All (D) Every
(E) Not Attempted
48. David said, "Can we go tomorrow?"
(A) David said if we can go tomorrow. (B) David asked if we could go the following day.
(C) David asked if we could go tomorrow. (D) David said whether we could go tomorrow.
(E) Not Attempted
49. Don't you _____ lie to me!
(A) need to (B) dare
(C) ought to (D) have
(E) Not Attempted
50. Each and every member _____ to vote.
(A) has (B) have
(C) having (D) are
(E) Not Attempted
51. I _____ have won the tournament.
(A) Need to (B) Will
(C) Could (D) Dare to
(E) Not Attempted
52. Is there _____ that you would like to share?
(A) everything (B) anything
(C) enough (D) much
(E) Not Attempted
53. We are _____ wait in the lobby until the receptionist calls again.
(A) Supposed to (B) Used to
(C) Obligated to (D) Able to
(E) Not Attempted
54. He said, "Ah! You are here."
(A) He exclaimed with delight that I was there. (B) He said that he was delighted that I was there.
(C) He exclaimed with joy to see me there. (D) He said it was a joy to see me there.
(E) Not Attempted
55. There has been a landslide. You _____ be careful while driving there.
(A) Can (B) Must
(C) Could (D) would
(E) Not Attempted
56. Duration required for automated processing is:
(A) 5 minutes (B) 20 minutes
(C) 1 minute (D) 1 hour
(E) Not Attempted
57. Following are contraindications for MRI **except**:
(A) Cardiac pacemaker (B) Cochlear implant
(C) Intraocular metallic foreign body (D) Pregnancy
(E) Not Attempted
58. Cancer cervix staging is done by:
(A) TNM staging (B) GTNM staging
(C) FIGO staging (D) None of the above
(E) Not Attempted

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59. Orthopantomogram is taken to rule out lesion in:
(A) Maxilla (B) Facial bone
(C) Skull (D) Mandible
(E) Not Attempted
60. Which is NOT TRUE regarding mammography
(A) The generator must be able to maintain a very accurate Kvp in the range of 25-35 Kvp
(B) The X-ray tube has certain special design features, including a beryllium window and a molybdenum target
(C) Focal spot is very large
(D) The tube is 0.03 mm of molybdenum or 0.5 aluminium equivalent to absorb X-rays below the optimum Kvp range.
(E) Not Attempted
61. Solid state diode rectifier is made up of:
(A) Silicon (B) Cadmium
(C) Gadolinium (D) Sodium
(E) Not Attempted
62. Most common histopathology in head and neck carcinoma is:
(A) Squamous cell carcinoma (B) Lymphoma
(C) Melanoma (D) Adenocarcinoma
(E) Not Attempted
63. Stenver's view is used to assess:
(A) Sella (B) Mandible
(C) Greater tuberosity of humerus (D) Petrous temporal bone
(E) Not Attempted
64. Lordotic view is used to demonstrate:
(A) Exaggerated lumbar lordosis (B) Para nasal sinuses
(C) Lung apices (D) Middle lobe collapse
(E) Not Attempted
65. IMRT refers to:
(A) Intensive Modulated Radiotherapy (B) Intensity Modulated Radiotherapy
(C) Image Modulated Radiotherapy (D) None of the above
(E) Not Attempted
66. The ability to demonstrate closely placed structures in the subject as separate entities in the image is:
(A) Brightness (B) Contrast
(C) Resolution (D) None
(E) Not Attempted
67. Radiographic quality is improved by all **except**:
(A) High speed screen-film combination (B) Decreased motion blur
(C) Optimum phosphor crystal size (D) Increased noise
(E) Not Attempted
68. _____ is a tissue equivalent material placed close to skin surface.
(A) Orfit shell (B) Bolus
(C) Vaclock (D) Cone
(E) Not Attempted
69. Enteroclysis is used in the evaluation of:
(A) Hepatobiliary serum (B) Fallopian tubes
(C) Small bowel (D) Thecal sac
(E) Not Attempted
70. Which of the following about Cone beam CT is false?
(A) Reduced radiation dose (B) Used in dental imaging
(C) Has a cone shaped beam (D) Costly than MDCT
(E) Not Attempted
71. The ability of X-ray film or film-screen combination system to define an edge is:
(A) Resolution (B) Sharpness
(C) Speed (D) Radiographic mottle
(E) Not Attempted
72. Most common histopathology in breast carcinoma is:
(A) Squamous cell carcinoma (B) Lobular carcinoma
(C) Infiltrating duct carcinoma (D) Adenocarcinoma
(E) Not Attempted



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73. All of the following are methods to improve radiographic quality **except**:
- (A) Transformer (B) Grid
(C) Beam limiting devices (D) Filters
(E) Not Attempted
74. The speed of intensifying screen increases with all of the following **except**
- (A) Large crystal size (B) Thick phosphor layer
(C) Reflective layer (D) Absorptive layer
(E) Not Attempted
75. 10 day rule of radiation protection applies to:
- (A) Radiation workers (B) General public
(C) Females in reproductive age (D) Staff nurse
(E) Not Attempted
76. ચંબલ નદીની ખીણમાં થયેલું ધોવાણ કયા નામે ઓળખાય છે?
- (A) પડ ધોવાણ (B) બાંગર ધોવાણ
(C) જળકૃત ધોવાણ (D) કોતર ધોવાણ
(E) પ્રયત્ન કરવો નથી
77. વારાણસી શહેર કયા રંગની મીનાકારી માટે જાણીતું છે?
- (A) લાલ રંગની (B) લીલા રંગની
(C) કાળા રંગની (D) ગુલાબી રંગની
(E) પ્રયત્ન કરવો નથી
78. નીચેનામાંથી કઈ પદ્ધતિથી ધોવાણ થતું નથી?
- (A) કોતર થકી ધોવાણ (B) જંગલો થકી ધોવાણ
(C) પવન થકી ધોવાણ (D) પડધોવાણ
(E) પ્રયત્ન કરવો નથી
79. કોફીના સૌથી વધુ ઉત્પાદન માટે કયો પ્રદેશ જાણીતો છે?
- (A) કૂર્ગ (B) ચરોતર
(C) કોરોમંડલ (D) દાજિલિંગ
(E) પ્રયત્ન કરવો નથી
80. વિરુપાક્ષનું મંદિર ક્યાં આવેલું છે?
- (A) થંજાવુર (B) મહાબલિપુરમ
(C) પદ્મકલ (D) વિજયનગર
(E) પ્રયત્ન કરવો નથી
81. મહાનદી કયા રાજ્યની નદી છે?
- (A) ઝારખંડ (B) ગુજરાત
(C) મધ્યપ્રદેશ (D) ઓરિસ્સા
(E) પ્રયત્ન કરવો નથી
82. વન્યજીવન અંગેના કાયદામાં નીચેનો કયો વિસ્તાર આવરી લેવામાં આવ્યો નથી?
- (A) જૈવ આરક્ષિત ક્ષેત્ર (B) અભયારણ્ય
(C) રાષ્ટ્રીય ઉદ્યાન (D) સંગ્રહાલય
(E) પ્રયત્ન કરવો નથી
83. રાણકી વાવ ક્યાં આવેલી છે?
- (A) પાટણ (B) ભૂજ
(C) અડાલજ (D) નવસારી
(E) પ્રયત્ન કરવો નથી
84. ભારતના બંધારણમાં સુધારો કરી ૧૯૭૬ .સ.માં માં વનસંરક્ષણ માટે જોગવાઈ કરાઈ.
- (A) બંધારણના આમુખમાં (B) બંધારણની કલમ નંબર ૫૧(૬)
રાજનીતિના માર્ગદર્શન અને સિદ્ધાંતો અને નાગરિકની મૂળભૂત ફરજો
(C) (D) સરકારના કાયદામાં
(E) પ્રયત્ન કરવો નથી
85. મૌર્યયુગની શિલ્પકલાનો સૌથી શ્રેષ્ઠ નમૂનો કયો છે?
- (A) સાંચીનો સ્તુપ (B) સારનાથનો સ્તુપ
(C) બુદ્ધ ગુફાઓ (D) સારનાથનો સ્તંભ
(E) પ્રયત્ન કરવો નથી
86. Radiation treatment is given for the following non-malignant brain condition:
- (A) Astrocytoma (B) Encephalitis
(C) Glioblastoma (D) Craniopharyngioma
(E) Not Attempted
87. Radiation reactions in head and neck radiation include all **except**:
- (A) Bleeding per vaginum (B) Mucositis
(C) Skin pigmentation (D) Dry mouth
(E) Not Attempted



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B

Questions : 100

Max Marks: 100

Date: 17 Dec '23

Duration : 90

Please read the instructions carefully before attending the Question paper. All Questions are compulsory.

88. X-ray radiation monitoring instruments include all **except**:
(A) Ionization chamber (B) Geiger Counter
(C) Neutron rem counter (D) Photographic film
(E) Not Attempted
89. Which of the following is NOT a deterministic effect of radiation?
(A) Skin erythema (B) Sterility
(C) Carcinogenesis (D) Fetal abnormality
(E) Not Attempted
90. Developing solution used in wet film processing consists of:
(A) Sulphuric acid (B) Sodium thiosulphate
(C) Hydroquinone metol (D) Chrome alum
(E) Not Attempted
91. Which is the oncologic emergency treated with radiation?
(A) Tumour lysis syndrome (B) Superior venacaval obstruction
(C) Polymyositis (D) None of the above
(E) Not Attempted
92. Scalp hair loss occurs in the following conditions **except**:
(A) Cranial irradiation (B) Chemotherapy
(C) Both 1 & 2 (D) Pelvic irradiation
(E) Not Attempted
93. What is the main mode of heat transfer in rotating anode X-ray tube?
(A) Conduction (B) Convection
(C) Radiation (D) All of the above
(E) Not Attempted
94. The viewing glass in the CT console room should have lead equivalence of:
(A) 0.5 mm (B) 1 mm
(C) 2 mm (D) 5 mm
(E) Not Attempted
95. Primary radiation barrier materials used include:
(A) Concrete (B) Lead
(C) Steel (D) Any of the above
(E) Not Attempted
96. Electronic Portal Imaging Device (EPID) in radiotherapy is used for:
(A) Treatment planning (B) Treatment verification
(C) CT simulation (D) Conversional simulation
(E) Not Attempted
97. Most common histopathology in cancer cervix is:
(A) Squamous cell carcinoma (B) Adenocarcinoma
(C) Lymphoma (D) Melanoma
(E) Not Attempted
98. Lymphatics from uterus drain to all except:
(A) External iliac lymph nodes (B) Internal iliac lymph nodes
(C) Inguinal lymph nodes (D) Mesenteric lymph nodes
(E) Not Attempted
99. Xiphisternal joint is at the level of:
(A) 6th thoracic vertebra (B) 9th thoracic vertebra
(C) 1st lumbar vertebra (D) 3rd lumbar vertebra
(E) Not Attempted
100. X-ray film emulsion is made up of:
(A) Cadmium (B) Phosphorus
(C) Silver halide (D) Lead
(E) Not Attempted