

**MIZORAM PUBLIC SERVICE COMMISSION**  
**TECHNICAL COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO**  
**X-RAY TECHNICIAN (CONTRACT)**  
**UNDER HEALTH & FAMILY WELFARE DEPARTMENT, FEBRUARY, 2017.**

**TECHNICAL**  
**PAPER – I**

Time Allowed : 2 hours

Full Marks : 150

*All questions carry equal marks of 2 each.*  
*Attempt all questions.*

1. Total number of carpal bones in the body is
  - (a) 4
  - (b) 6
  - (c) 16
  - (d) 8
2. The largest tarsal bone is
  - (a) Navicular
  - (b) Calcaneum
  - (c) Talus
  - (d) Hammate
3. Number of lumbar vertebrae in the body is
  - (a) 9
  - (b) 7
  - (c) 12
  - (d) 5
4. The Aorta arises from the
  - (a) IVC
  - (b) Left ventricle
  - (c) Right atrium
  - (d) Coronary sinus
5. The vocal folds are part of the
  - (a) Pharynx
  - (b) Thyroid
  - (c) Epiglottis
  - (d) Larynx
6. The covering of the heart is called
  - (a) Visceral pleura
  - (b) Pericardium
  - (c) Mediastinum
  - (d) None of these
7. The Duodenum has how many parts
  - (a) 3
  - (b) 4
  - (c) 6
  - (d) 1
8. Epididymis is located in
  - (a) Uterus
  - (b) Ovaries
  - (c) Fallopian Tubes
  - (d) Scrotum
9. Which of the following is part of the hind brain
  - (a) Cerebrum
  - (b) Arachnoid
  - (c) Pia
  - (d) Medulla

10. The Pectoralis Major muscle is located in the
  - (a) Chest
  - (b) Forearm
  - (c) Thigh
  - (d) Anterior abdominal wall
11. The knee joint is formed by the
  - (a) Tibia and Fibula
  - (b) Tibia and Femur
  - (c) Femur and Fibula
  - (d) All of these
12. The innermost coat of the eye is called
  - (a) Cornea
  - (b) Sclera
  - (c) Retina
  - (d) Choroid
13. The tragus is part of the
  - (a) Eye
  - (b) Ear
  - (c) Nose
  - (d) Hand
14. Cystic Duct arises from the
  - (a) Right hepatic duct
  - (b) Gall Bladder
  - (c) Spleen
  - (d) Pancreas
15. The Adrenal gland is located in relation to the
  - (a) Kidney
  - (b) Spleen
  - (c) Pituitary
  - (d) Esophagus
16. Detrusor muscle is a part of the
  - (a) Uterus
  - (b) Urinary Bladder
  - (c) Prostate
  - (d) Vagina
17. What type of joint is the elbow joint
  - (a) Ellipsoid
  - (b) Ball and socket
  - (c) Hinge
  - (d) Pivot
18. The other name of the 3<sup>rd</sup> cranial nerve is
  - (a) Trochlear
  - (b) Glossopharyngeal
  - (c) Oculomotor
  - (d) Hypoglossal
19. Foramen Magnum is located in the
  - (a) Femur
  - (b) Pelvis
  - (c) Skull
  - (d) Thorax
20. The following ribs are also referred to as floating ribs
  - (a) 11<sup>th</sup> rib
  - (b) 12<sup>th</sup> rib
  - (c) Both (a) & (b)
  - (d) None of these
21. The following is not the name of a blood cell
  - (a) Erythrocyte
  - (b) Monocyte
  - (c) Interleukin
  - (d) Leukocyte
22. The blood group which is also called Universal Donor is
  - (a) A
  - (b) B
  - (c) AB
  - (d) O

23. The normal respiration rate in resting adults is  
(a) 5-8 per minute (b) 15-20 per minute  
(c) 40-50 per minute (d) 70-80 per minute
24. The Superior Vena Cava drains into the  
(a) Left atrium (b) Right ventricle  
(c) Left ventricle (d) Right atrium
25. Insulin is secreted by  
(a) Thyroid (b) Pancreas  
(c) Pituitary (d) Parathyroid gland
26. Ptyalin is an enzyme found in  
(a) Gastric juice (b) Colon  
(c) Lungs (d) Saliva
27. Which of the following is not a part of nephron  
(a) Glomerulus (b) Bowmans capsule  
(c) Proximal convoluted tubule (d) Internal capsule
28. The following is part of the inner ear  
(a) Malleus (b) Cochlea  
(c) Stapes (d) Incus
29. Bile is secreted by  
(a) Liver (b) Gall Bladder  
(c) Pancreas (d) Spleen
30. Which of the following is not a sensory organ  
(a) Nose (b) Ear  
(c) Hair (d) Eye
31. Bronchitis is inflammation of the  
(a) Lungs (b) Larynx  
(c) Pharynx (d) Esophagus
32. Hepatocellular carcinoma is cancer of the  
(a) Brain (b) Neck  
(c) Bowel (d) Liver
33. Collection of air in the pleural cavity is called  
(a) Pneumothorax (b) Pneumoperitoneum  
(c) Hemothorax (d) Pleural effusion
34. Cholelithiasis means  
(a) Stone in Gall Bladder (b) Stone in Kidney  
(c) Stone in Urinary Bladder (d) Stone in Common Bile duct
35. Hydrocele is a disease of the  
(a) Brain (b) Scrotum  
(c) Heart (d) Ovary

36. World Radiographic Day is celebrated on  
(a) 14<sup>th</sup> August (b) 15<sup>th</sup> March  
(c) 8<sup>th</sup> November (d) 19<sup>th</sup> April
37. Hot Cathode tube was invented by  
(a) W C Roentgen (b) W D Coolidge  
(c) W S Traction (d) W R Johnson
38. Nucleus of the atom consists of  
(a) Electron (b) Proton  
(c) Both (a) & (b) (d) None of these
39. In the process of thermionic emission the percentage of heat generated is  
(a) 45 percent (b) 63 percent  
(c) 99 percent (d) 78 percent
40. Energy of the X-Ray beam which defines its penetrating power is determined by  
(a) kVp (b) mA  
(c) time of exposure (d) All of these
41. Atomic number of Rhodium is  
(a) 20 (b) 50  
(c) 43 (d) 66
42. Melting point of Tungsten is  
(a) 1480 degree celsius (b) 3370 degree celsius  
(c) 4240 degree celsius (d) 5150 degree celsius
43. Normal anode angle is about  
(a) 5 degrees (b) 45 degrees  
(c) 65 degrees (d) 20 degrees
44. X-Ray tubes are made up of  
(a) Tungsten (b) Rhenium  
(c) Molybdenum (d) All of these
45. The type of rectifiers commonly used in modern tubes are  
(a) Solid state (b) Vacuum  
(c) Semisolid (d) Gas
46. In interaction between X-Ray and atoms, Thomson scattering and Rayleigh scattering are type of  
(a) Compton Scattering (b) Pair production  
(c) Coherent Scattering (d) Photo disintegration
47. The function of step up transformers in X-Ray machine is  
(a) Increase voltage (b) Filter current  
(c) Increase insulation (d) Increase conduction
48. The following are type of heat dissipation in X-Ray tubes  
(a) Oil cooling (b) Fenestration  
(c) Fan (d) All of these

49. The full form of MHU used for tube rating is  
(a) Mili Hounsefield Units (b) Million Heat Units  
(c) Multi House Units (d) Million Hounsefield Units
50. AERB stands for  
(a) Atomic Energy Regulatory Board (b) Atomic Energy Radiation Buereu  
(c) Atomic Energy Radiological Body (d) Atomic Energy Regulatory Body
51. Recommended distance for safe light is  
(a) 1 – 1.5 meter (b) 3 - 3.5 meter  
(c) 5.5- 6 meter (d) 0.5 - 0.8 meter
52. Which of the following is a type of film hanger  
(a) Pin (b) Screw  
(c) Bolt (d) Channel
53. Silver is present in which layer of the film  
(a) Base (b) Supercoating  
(c) Emulsion (d) Anti-halo
54. Which of the following is true regarding subtraction film  
(a) They are single emulsion films (b) They are used in Mammography  
(c) They have low contrast (d) They are used in dental radiography
55. The reflective layer of intensifying screen is made up of  
(a) Titanium dioxide (b) Copper dioxide  
(c) Tungsten dioxide (d) Cellulose peroxide
56. Phosphor composition of intensifying screen is  
(a) Barium sulphate (b) Lead sulphate  
(c) Calcium Tungstate (d) Magnesium Dihydrate
57. The speed value of high speed screen is about  
(a) 20 (b) 100  
(c) 500 (d) 1000
58. Which of these is a present in fixer solution  
(a) Chrome Alum (b) Metol  
(c) Hydroquinone (d) Potassium Sulphate
59. The Activator in developing solution is  
(a) Zinc oxide (b) Magnesium Fluoride  
(c) Potassium Bromide (d) Sodium carbonate
60. Fluorescent material used in Fluorescent screen is  
(a) Zinc Cadmium Sulphide (b) Terbium dioxide  
(c) Manganese sulphate (d) Barium chloride
61. Antifogging agent used for combating chemical fog in automatic processor is  
(a) Acid (b) Alkali  
(c) Aldehyde (d) Bromide
62. Water's view is done for  
(a) Paranasal sinuses (b) Styloid process  
(c) Mastoid (d) Parietal bone

63. The other name of apicogram is  
(a) Lordotic view (b) Scoliotic view  
(c) Lateral decubitus view (d) Kyphotic view
64. Dry processing  
(a) Uses Blow dryers (b) Produces less chemical waste  
(c) Both (a) & (b) (d) None of these
65. Submento-vertical view of skull is done for  
(a) Middle ear cavity (b) Base of skull  
(c) Temporal bone (d) Orbits
66. To visualise the scaphoid bone we need to take radiograph of  
(a) Wrist (b) Ankle  
(c) Elbow (d) Knee
67. To examine patella we need to take radiograph of  
(a) Elbow (b) Knee  
(c) Scapula (d) Hand
68. Type of fog because of inappropriate protection measures in dark room is called  
(a) Radiation fog (b) Oxidation fog  
(c) Age fog (d) None of these
69. Grid is used to reduce  
(a) Indirect radiation (b) Penumbra  
(c) Fog (d) Scatter radiation
70. The Atlanto Occipital joints are visualised in radiograph of  
(a) Cervical spine (b) Thoracic spine  
(c) Lumbar spine (d) Coccyx
71. Stationary grids are of the following types:  
(a) Parallel (b) Linear  
(c) Focussed (d) All of these
72. Which of the following is a wrong statement for air gap technique:  
(a) Used in Chest radiography (b) Increases scatter radiation  
(c) Causes magnification (d) Radiation dose is higher
73. Measurement of film blackness is called  
(a) Photographic unsharpness (b) Photographic density  
(c) Subject contrast (d) Movement unsharpness
74. The unit for measurement of inherent filtration is  
(a) Lead equivalent (b) Copper equivalent  
(c) Filter density (d) Aluminium equivalent
75. Thermoluminescent material used in TLD badge is  
(a) Calcium Sulphate (b) Potassium Sulphate  
(c) Magnesium Hydroxide (d) Lead carbonate