



# BRAINWARE UNIVERSITY

**Term End Examination 2021 - 22**

**Programme – Bachelor of Science in Medical Radiology & Imaging Technology**

**Course Name – Radiographic and Image Processing Techniques**

**Course Code - BMRIT204**

**( Semester II )**

**Time allotted : 1 Hrs.15 Min.**

**Full Marks : 60**

[The figure in the margin indicates full marks.]

## Group-A

(Multiple Choice Type Question)

1 x 60=60

*Choose the correct alternative from the following :*

- (1) Which of the following is the accelerator in the developer?
 

a) Sodium carbonate and sodium hydroxide	b) Potassium carbonate
c) Ammonium bromide	d) None of these
- (2) The function of the accelerators in the developer is
 

a) To stop the development	b) To decrease the rate of the development
c) To increase the rate of the development	d) None of these
- (3) Film is agitated during development
 

a) To increase the development	b) To maintain uniform development of film
c) To maintain the uniform temperature of solution	d) All
- (4) The reduction in the level of developing chemicals in tanks depends upon
 

a) Number of the films developed	b) The method of the development
c) Size and type of the film used	d) All
- (5) The action of the developer on unexposed silver bromide crystals of emulsion as
 

a) Dissolved	b) Oxidized
c) Washed away	d) Unaffected
- (6) Which is not true for fixer
 

a) Fixer solution is alkaline	b) Sodium / Ammonium thiosulphate acts as fixing agent
c) Sodium sulphite act as preservative	d) Chrome alum / potassium alum acts as hardener
- (7) Fixing agents used is
 

a) Sulphuric acid	b) Sodium sulphite
c) Sodium thiosulphite	d) Sodium chloride
- (8) Washing during processing of the film should be done under
 

a) Stagnant water	b) Using detergents
c) Using running water	d) Using petrol
- (9) The pH of developing agent is



- a) To hold intensifying screens and protect them from damage.      b) To exclude all light from entering the cassette and fogging the film.
- c) To maintain a close and uniform contact between the film and screens.      d) All of these
- (25) The back part of cassette is formed with higher atomic number element to reduce the effect of
- a) Primary beam      b) secondary beam  
c) useful beam      d) scatter beam
- (26) The use of carbon-fibre in the cassettes significantly
- a) Reduction in patient dose because of their      b) lower beam attenuation,  
c) longer viability      d) all of these
- (27) Statement A: In order to provide both a check on a cassette's lifespan and contribute to the efficiency of maintenance the cassette should be checked periodically. Statement B: Keep a record of cassette maintenance, e.g. when inspected, when cleaned, when tested for light leakage, etc.
- a) . Statement A is true      b) Statement B is true  
c) Both statement are true      d) Both statement are false
- (28) The place where a radiographic film can be processed is termed as
- a) dark room      b) processing room  
c) special room      d) both a & B
- (29) Film manufacturers generally recommend that the film store temperature be maintained between .....for materials stored up to three months
- a) 18 and 21 °C      b) 15 and 20 °C  
c) 11 and 21 °C      d) 10 and 15 °C
- (30) If 15 watt bulb used in dark room then how much distance from safe light to film is required for normal processing activity in the dark room?
- a) 1 meter      b) 2 meter  
c) 1.2 meter      d) 2.1 meter
- (31) Processing chemical is a essential element of
- a) DRY SIDE      b) Wet side  
c) PASS BOX NONE OF THESE      d) 2
- (32) The thickness of the sheet of radiographic film is about
- a) 0.25 mm      b) 0.15 mm  
c) 0.5 mm      d) 1 mm
- (33) The active ingredient of radiographic emulsion consist of
- a) Silver bromide      b) Silver iodide  
c) Silver tungstate      d) Both a & b
- (34) The panoramic films are
- a) Single emulsion film      b) . Double emulsion film  
c) Both 1&2      d) Cine film
- (35) Which of the following film is used to copy multiple number of films from single chemically processed film by UV Light?
- a) Mammography film      b) Duplicating film  
c) Dental film      d) Substratum film
- (36) Any material that emits light to some external stimulation is called
- a) Luminescent      b) Phosphor  
c) PMT      d) Fluorescent
- (37) Which of the following element work as anti fogging agent in developing solution?
- a) Potassium bromide      b) Potassium iodide  
c) Silver bromide      d) Both a & b

- (38) Sodium sulfite is used in developing solution as
- Activator
  - Preservative
  - Re-strainer
  - All of these
- (39) A radiographic film can be visualized in normal illumination after
- Developing
  - Fixing
  - Rinsing
  - Wasing
- (40) Which of the following element is work as a fixing agent ?
- Sodium thiosulphate
  - Ammonium thiosulphate
  - Sodium sulphate
  - Both a & b
- (41) Which of the following acid used in fixer ?
- Acetic acid
  - Sulphuric acid
  - Ammonium chloride
  - Both a & b
- (42) Statement A: Automatic processor reduce the processing time which leads to increase the working capacity of the radiology department. Statement B: It improve the image quality by accurate temperature and concentration of the processing chemicals.
- Statement A is true
  - Statement B is true
  - Statement A is true and B is correct explanation of statement of A
  - Statement A is true But statement B do not explain correctly of statement A.
- (43) The essential component of CR cassette which play an important role in image acquisition is
- screen
  - PSP
  - Grid
  - Emulsion
- (44) The dark room should be located
- Near the processing room .
  - Near the radiographic room
  - Far the radiographic room
  - None of these
- (45) Digital radiography use
- Cassette
  - Detector
  - Intensifying screen
  - All of these
- (46) Work station in the radiology department is
- DICOM
  - PACS
  - WINDOW
  - JAWA
- (47) Which of the following advancement is used to save the lot of time during communication of patient information or transferring the patient's data from one place to another place?
- DICOM
  - PACS
  - WINDOW
  - JAWA
- (48) The processing cycle of radiographic film consist of
- Developing -fixing-washing-dry
  - Developing-wasing-fixing-dry
  - Developing-Rinsing-Fixing-Dry
  - Developin -Fixing-Rinsing-Dry
- (49) Buffer is a chemical component which is used to maintain the .....of the solution
- PH
  - CONCENTRATION
  - Amount
  - VISCOCITY
- (50) Which of the following element used to overcome the oxidation of processing chemicals?
- Potassium sulphide
  - Potassium sulphite
  - Potassium bromide
  - Calcium bromide
- (51) Which of the following factors affect the developing solution?
- Constitution of solution
  - Temperature
  - Time
  - All of these
- (52) The processing chemical can be mixed in a tank with which type of sterer?

- a) plastic
  - b) metallic
  - c) wooden
  - d) both A&C
- (53) When you mix the processing chemicals they can produce
- a) Fume
  - b) Light
  - c) Water
  - d) All of these
- (54) Some artifact may be appear in DR imaging system due to
- a) Acquisition
  - b) Post-Processing
  - c) Display
  - d) All of these
- (55) Which of the following element used as activator in phosphor material
- a) Europium
  - b) Fluorohalide
  - c) Barium
  - d) Gelatin
- (56) Digital radiography leads to
- a) Reduce the scan time
  - b) Increase the work capacity
  - c) Enhance image quality
  - d) all of these
- (57) Statement A: Aluminium chloride and aluminium sulphate are commonly used hardening agents in fixing solutions. Statement B: They work rapidly and most effectively within the rather narrow pH range of 4.1-4.4.
- a) Statement A is true
  - b) Statement B is true
  - c) Statement A is true and B is correct explanation of statement of A
  - d) Statement A is true But statement B do not explain correctly of statement A
- (58) Buffer Precise control of pH of fixer is important in order to
- a) Prevent sulphurization
  - b) Ensure neutralization of developer
  - c) Maintain optimum hardener activity
  - d) All of these
- (59) .....safe lighting is intended to provide general illumination of the darkroom
- a) INDIRECT
  - b) DIRECT
  - c) NEUTRAL
  - d) RADIOGRAPHY
- (60) The radiographic film should be kept in
- a) Radiography room
  - b) processing room
  - c) Store room
  - d) Medical record room