Roll No. | | | | | | |

Answer Sheet No._____

Sig. of Candidate._____

Sig. of Invigilator._____

RADIOGRAPHIC TECHNIQUES HSSC–II

SECTION – A (Marks 20)

Time allowed: 25 Minutes

NOTE: Section–A is compulsory and comprises pages 1-2. All parts of this section are to be answered on the question paper itself. It should be completed in the first 25 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) 10 day rule for safety of the patient is applicable in _____

A. X-ray on pregnant women B. X-ray on women about 60 years old

C. X-ray on young ladies D. All of these

(ii) Cleansing gut preparation with laxatives (Dulcolax tablets) and water is_____

A. Mandatory for IVU B. Required for ultrasound of abdomen

C. Required for Barium enema D. Required in CT scan of abdomen

(iii) Which of the following is **TRUE** about the IV contrasts?

A. Can be safely given in patients with deranged hepatic function

B. Can be safely given in patients with deranged renal function

C. Can be safely given in dehydrated child

D. Can be safely given in patients with over-functioning thyroid

(iv) Which of the following drugs is used in Barium meal examination?

A. I.V. Glucagon B. I.V. Diazepam C. I.V Avil D. I.V. Metoclopramide

(v) Use of the pancreas is done best with _____

A. Fat-free diet for one day B. Sugar-rich drink at the time of test

C. Overnight fast D. None of these

(vi) Geometric unsharpness of X-ray is increased by _____

A. Movement of the patient B. Large focal spot of the X-ray tube

C. Use of beam restrictors D. Use of grids

(vii) Regarding target (anode) disc in the X-ray tube_____

A. Tungsten only is ideal

B. Tungsten and Molybdenum combination is better than Tungsten only

C. Tungsten and Aluminium combination is ideal

D. Molybdenum and Aluminium combination is ideal

(viii) Filtration of the X-ray beam _____

A. Its use decreases tube load B. Tungsten is used as filter

C. Its use decreases patient's dose D. Wedge filter should not be used in humans

(ix) Regarding grids_____

A. Lower the ratio, better is performance

B. Higher the grid ratio, better is performance

C. Decreases patients radiation dose by removing scattered radiation

D. Does not remove scattered radiation

(x) Which of the following bones are **NOT** included in the Wrist joint?

A. Lunate B. Scaphoid

C. Lower end of radius D. Lower end of ulna

(xi) Navicular bone is located _____

A. In the distal row of wrist bones B. On the lateral side of foot

C. On the medial side of foot D. None of these

(xii) Brachial artery_____

A. Is continuation of the axillary artery
B. Divides into axillary artery
C. Continues as deep arch in palm
D. None of these

(xiii) Scapula_____

A. Spine is not part of scapula
B. Superior and inferior fossae are on the dorsal side
C. Superior fossa is on the ventral side
D. Spine articulates with the medial end of clavicle

(xiv) X-ray chest _____

A. PA view is better than AP view to see the lungs
B. PA view is better than AP view to see the heart
C. Lateral view is better than frontal projection to see the ribs
D. Expiratory view is better than inspiratory view to see the lungs

(xv) X-ray shoulder in left posterior oblique position means that if the bucky is on back side of the patient then _____

A. Posterior side of the left shoulder is away from the bucky
B. Posterior side of right shoulder is away from the bucky
C. Posterior side of the left shoulder is in towards the tube
D. None of these

(xvi) Right lateral Decubitus position means _____

A. Standing position with the left side towards bucky
B. Lying down position with the right side towards the tube
C. Lying down position with the right side towards the bucky
D. Lying down position with the left side towards the sky

(xvii) Weight bearing X-ray of the shoulder region _____

A. Is done to see the fracture of clavicle
B. Is to see the dislocation at the sternoclavicular joint
C. Is done for dislocation at the acromioclavicular joint
D. Is done to see subluxation at the acromioclavicular joint

(xviii) X-ray spine _____

A. AP view of cervical spine gives minimum superimposition of the vertebrae
B. PA view of cervical spine gives maximum superimposition of vertebrae
C. AP view of dorsal spine gives minimum superimposition of the vertebrae
D. PA view of dorsal spine gives minimum superimposition of the vertebrae

(xix) X-ray plain abdomen _____

A. Includes area from the upper chest to symphysis pubis
B. Includes area from the lower margin of chest to pubis symphysis
C. Includes area from the lower margin of chest to the level of iliac crest
D. Includes area from the middle of sternum down to inguinal area

(xx) Mammography _____

A. 80-100 KV radiation is required
B. Molybdenum is used as target
C. Tungsten is used as target
D. Gonad protection is required

For Examiner's use only:

Total Marks:	20
Marks Obtained:	

RADIOGRAPHIC TECHNIQUES HSSC–II

Time allowed: 2:35 Hours **Total Marks Sections B and C: 80**

NOTE: **Answer any twenty-five parts from Section 'B' and any three questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.**

SECTION – B (Marks 50)

Q. 2 Answer any TWENTY-FIVE parts. The answer to each part should not exceed 2 to 4 lines. (25x2=50)

(i) What happens when a charged particle is accelerated? Give different types of the product.

(ii) Is electromagnetic wave a wave or a particle?

(iii) Who discovered radioactivity and when?

(iv) What are the SI units of **Magnetic field** and **Frequency**?

(v) How are X-rays produced?

(vi) What is Space charge?

(vii) What is X-ray tube housing and its functions?

(viii) What is characteristic radiation?

(ix) What is the function of tube rating chart?

(x) Write a short note on Lead.

(xi) What is Contrast? Why is contrast medium given in radiology?

(xii) Which radionuclide is most commonly used? Which camera is used for its activity detection?

(xiii) What are the advantages of intensifying screen?

(xiv) Write down the steps involved in film processing in conventioinal way?

(xv) What are the basic chemical substances required in photographic emulsion of conventional X-ray film?

(xvi) What happens to X-ray film by increasing mAs?

(xvii) What factors control film contrast?

(xviii) What is dark room safe light?

(xix) Whether high or low frequency US transducer is used to examine superficial structures of body?

(xx) What is Doppler Ultrasound?

(xxi) What is half value layer thickness for lead apron?

(xxii) Where are collimators used in radiology?

(xxiii) What is the difference between X-ray and CT scan images?

(xxiv) Name the fossae in skull bone.

(xxv) Name the main structure in vertebral canal.

(xxvi) Through which foramen of vertebra does vertebral artery pass?

(xxvii) From where does the right coronary artery arise?

(xxviii) List the parts of large intestine.

(xxix) What is Bronchogram?

(xxx) What is Cholangiogram?

(xxxi) Why are the different densities seen on X-ray?

SECTION – C (Marks 30)

Note: Attempt any THREE questions. All questions carry equal marks. (3 x 10 = 30)

Q. 3 What is image sharpness? What are the factors which reduce image sharpness? What measures are taken to improve image sharpness?

Q. 4 What are the projections used for X-ray of right hand? Explain PA projection of hand.

Q. 5 Write views for X-rays of elbow. How is lateral basic view taken?

Q. 6 How will you prepare a patient for MRI head? What will you do if the MRI radiographer is pregnant?

Q. 7 Which parts of body are studied in Barium follow through and Barium enema tests? Name the series of views for Barium enema test?