



Roll No.

Answer Sheet No.

Sig. of Candidate. \_\_\_\_\_

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## 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) Which of the following is **INCORRECT** about Stochastic effect of radiations?
- A. Examples are cataract, burns, sterility      B. Occur by chance  
C. No threshold dose      D. Consists primarily of genetic and cancer effect
- (ii) Which of the following is **INCORRECT** about X-rays?
- A. Were invented by Rontgen      B. Are of very high frequency  
C. Are of very small wavelength      D. Speed is more than speed of light
- (iii) Which of the following is **INCORRECT** about fluoroscopy?
- A. Is not real time imaging  
B. is like x-ray movie  
C. A continuous x-ray beam is passed through body  
D. Image seen on Monitor
- (iv) Which of the following is **INCORRECT** about contrast Media?
- A. Are of two types negative and positive      B. Carbon dioxide is negative contrast media  
C. Barium absorbs less x-ray than air      D. Positive contrast is shown as white
- (v) Which of the following is **INCORRECT** about Barium?
- A. Barium sulphate suspension in water is universal contrast medium for GIT  
B. Barium can be safely used in cases of perforation  
C. Double contrast studies require air with barium  
D. Barium suspension should be palatable
- (vi) Which of the following is **INCORRECT** about Barium follow through?
- A. Study evaluates anatomy of small bowel  
B. X-ray films are taken after 0,20,40,60,90 minutes of taking the contrast  
C. Test is completed where barium reaches ileocecal junction  
D. Widest part of small bowel is terminal ileum
- (vii) Which of the following is **INCORRECT** about Barium Enema?
- A. Barium is given through anus while patient is lying on his side  
B. Flow of barium is monitored on fluoroscope  
C. No prior preparation required  
D. Barium is contraindicated in perforation
- (viii) Which of the following is **INCORRECT** about Hysterosalpingography?
- A. Infertility is prime indication      B. Visualizes uterus and fallopian tube  
C. Pregnancy is not contraindicated      D. None of these
- (ix) Which of the following is **INCORRECT** about Mammography?
- A. Double coated films are used      B. Is of two types, screening and diagnostic  
C. Standard views are MLO45 and CC      D. Also be done by U/S MRI
- (x) Which of the following is **INCORRECT** about CT Components?
- A. Transducer      B. X-ray tube  
C. Detectors      D. Data acquisition system

DO NOT WRITE ANYTHING HERE

- (xi) Which of the following is **INCORRECT** about helical CT?
- A. Also known as spiral CT
  - B. X-ray tube and detectors both rotate in gantry
  - C. Multislice CT can obtain images of heart and vessels
  - D. Images are obtained in 5 seconds
- (xii) Which of the following is **INCORRECT** about average Radiation Dose?
- A. Chest 0.1 mSv
  - B. CT abdomen and pelvis 10 mSv
  - C. IVU 3 mSv
  - D. Hysterosalpingography 5mSv
- (xiii) Which of the following is **INCORRECT** about MRI?
- A. X-rays are used to image
  - B. Provides great soft tissue contrast
  - C. No ionization radiation
  - D. RF frequency is used
- (xiv) Which of the following is **INCORRECT** about Ultrasound?
- A. U/S is produced by probe
  - B. Probe is also called transducer
  - C. Echoes are received by transducer
  - D. None of these
- (xv) Which of the following is **INCORRECT** about Ultrasound Machine?
- A. Crystals in Transducer produce U/S
  - B. Returning echoes produce an electrical signal
  - C. Data is sent to CPU reconstruct a picture
  - D. This picture is displayed on monitor in 5 seconds
- (xvi) Which of the following is **INCORRECT** about U/S?
- A. U/S has both therapeutic and diagnostic applications
  - B. Superficial structures are seen with high frequency (7-10 MHz)
  - C. U/S has no role in the imaging of joints and muscles
  - D. Obstetric ultrasound very commonly used in pregnancy
- (xvii) Which of the following is **INCORRECT** about Nuclear Medicine?
- A. Also called radionuclide imaging or nuclear scintigraphy
  - B. Isotopes are also called radiopharmaceutical
  - C. Emitted radiations are detected by gamma camera
  - D. Emitted Gamma radiation is less energetic than X-rays
- (xviii) Which of the following is **INCORRECT** about Nonstochastic Effects of Radiation?
- A. Nonstochastic effects are characterized by a threshold below which they do not occur
  - B. Cataract is a nonstochastic effect
  - C. Appear after years
  - D. Occur with very large dose in very short time
- (xix) What is the structure visible with naked eye called?
- A. Surgical
  - B. Microscopic
  - C. Radiographic
  - D. Gross
- (xx) Which of the following increases radiation dose?
- A. Grid
  - B. Filter
  - C. Collimator
  - D. Lead Shield

For Examiner's use only:

Total Marks:

20

Marks Obtained:

--- 2HA 1250 ---





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

- (i) What is electromagnetic spectrum? How do its constituents differ?
- (ii) Name ionization radiations. Is microwave ionization radiation?
- (iii) Is fluoroscopy real time imaging? Give examples.
- (iv) What are HOCM and LOCM? What is osmolarity of plasma?
- (v) Which contrast is used in angiography? How is it given?
- (vi) What are two main types of adverse reactions due to contrast media?
- (vii) What is IVU? What is emergency IVU?
- (viii) What is nephrogram and post micturition films?
- (ix) What is safe period?
- (x) What is transducer?
- (xi) Draw the diagram of stomach and label it.
- (xii) How will you book patient for HSG?
- (xiii) What are the types of Mammography? What are its standard views?
- (xiv) What is PACS?
- (xv) What is the density of **air, bone, water, blood** and **calcium contrast** in CT HU.
- (xvi) What is Claustrophobia? What things are prohibited in MR room?
- (xvii) What are the main differentiating points between MRI and CT?
- (xviii) What is ALARA?
- (xix) What is TVS? What are its advantages?
- (xx) What is Doppler?
- (xxi) What is Nuclear medicine?
- (xxii) What preparations are required for U/S abdomen and pelvis?
- (xxiii) Write 7 colours of white light in order.
- (xxiv) What is enteroclysis?
- (xxv) What is water's view?
- (xxvi) Name carpal bones
- (xxvii) Write about five basic densities in X-ray.
- (xxviii) Is MRI harmful?
- (xxix) What is PTC?
- (xxx) What is isotope?
- (xxxi) Why air looks black on x-rays?

### SECTION – C (Marks 30)

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

- Q. 3 What is double contrast study? How is it produced? Name the film taken during barium enema.
- Q. 4 How is the mammography machine different from common x-ray machine? Are there other methods of mammography? Name the standard views of mammography.
- Q. 5 Write in detail about CT and MRI in tabulated form.
- Q. 6 Name radiographic base lines for skull. Write the positioning of fronto-occipital 10 degree view. Write about centering of skull lateral view.
- Q. 7 Write notes on the following:
  - a. Real time imaging
  - b. Paranasal sinuses
  - c. RUG/MCU