

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MD RADIOLOGY (PART I) EXAMINATION - DECEMBER 2024**

**ESSAY PAPER**

**Date:** 10<sup>th</sup> December 2024

**Time:** 9.30 a.m. – 11.30 a.m.

Answer each question in a separate book.

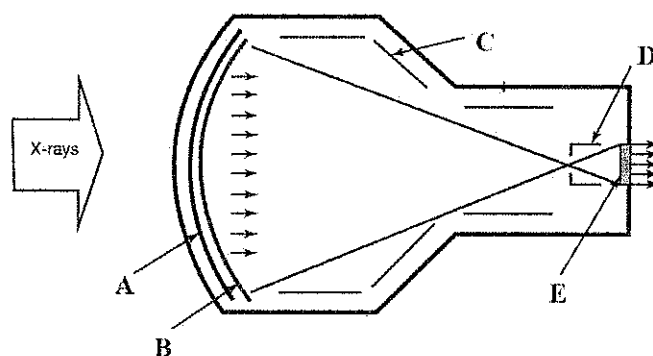
**Answer all questions.**

Each question carries 100 marks.

**PART A**  
**RADIATION PHYSICS AND RADIATION PROTECTION**

1.

- 1.1. Name the parts A to E of an image intensifier tube shown in the figure below. (15 marks)



- 1.2. Briefly explain the role of the components A and B. (20 marks)
- 1.3. Name one image distortion occurs in image intensifiers and give the reason for it. (20 marks)
- 1.4. Why is the image intensifier tube placed closed to the patient in fluoroscopic examinations? (20 marks)
- 1.5. How the Brightness gain of an image intensifier tube
- 1.5.1 relates to flux gain and minification gain (10 marks)
- 1.5.2 affects on image quality when the field of view is reduced (15 marks)

**PART B**  
**ANATOMY, TECHNIQUES AND RADIOGRAPHY**

1.
  - 1.1. List the contents of the carotid sheath. (20 marks)
  - 1.2. Briefly describe the seven anatomical segments of the internal carotid artery from its origin to the bifurcation. (40 marks)
  - 1.3. Briefly describe the technique of the carotid Doppler study (vertebral artery Doppler is not needed). (40 marks)
  
2.
  - 2.1. Describe the CT anatomy of adult right adrenal gland with anatomical relations. (40 marks)
  - 2.2. Describe the CT protocol for adrenal gland (patient preparation is not needed). (40 marks)
  - 2.3. Briefly describe the arterial supply and venous drainage of right adrenal gland. (20 marks)
  
3.
  - 3.1. Draw a labelled diagram of coronal ultrasound section of neonatal hip through the triradiate cartilage. (50 marks)
  - 3.2. Briefly describe the plain radiographic lines in x-ray hip-AP view used to assess developmental dysplasia (diagram is not required). (30 marks)
  - 3.3. List the plain radiographic views of hip joint of adults and paediatric age group. (20 marks)
  
4.
  - 4.1. List the true ligaments of female pelvis. (30 marks)
  - 4.2. Briefly describe the MRI anatomy of uterus in secretory phase. (30 marks)
  - 4.3. Briefly describe the technique of hysterosalpingography (patient preparation is not required). (40 marks)