

Con. 2968-09.

(REVISED COURSE) 05/06/07  
(3 Hours)

VR-5145

[ Total Marks : 100

- N.B. : (1) Question No. 1 is **compulsory**.  
(2) Attempt any **four** questions from **rest** of the questions.

1. (a) Explain the different processes of x-ray generation. 10  
(b) Explain the following terms with reference to x-rays. Discuss their role in getting good quality X-ray images. 10  
(i) Filters  
(ii) Collimators  
(iii) Grid  
(iv) Aperture. 33
2. (a) Draw and explain the filament circuit and high voltage circuit of x-ray generator. 10  
(b) Explain in detail-Digital subtraction Angiography. 10
3. (a) What are the different parts of a transducer used in ultrasonography. 10  
(b) Explain the following terms with references to transducer used in sonography. 10  
(i) Q-Factor  
(ii) Fresnel and Fraunhofer zones 33  
(iii) Doppler shift.
4. What are different modes employed in ultrasound imaging ? Explain each mode in detail. Describe the role of each mode in clinical context. 20
5. (a) Discuss the placement of patient, x-ray tube, grid, x-ray film, x-ray table, etc. with respect to the patient. Also discuss about Image Intensifier tube. 15  
(b) Write a short note on radiation protection. 5
6. (a) Explain Film Processing and Development. 10  
(b) List the various types to real time ultrasound scanners. Also explain steering and focussing. 10
7. Write short notes on any four :— 20  
(a) Mammography  
(b) Planigraphy  
(c) Applications of Thermographic Imaging in medicine  
(d) Rotating anode  
(e) Application of X-rays  
(f) Compton Scattering. 5