

III B.Tech. II Semester Regular Examinations, April/May -2005
MEDICAL IMAGING TECHNIQUES
(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Mention the properties of x-rays.
2. What is Xeroradiography and explain its mechanism in producing images for medical diagnosis.
3. Describe the uses of application of Computed Tomography.
4. What are the significant parameters in Diagnostic Ultrasound? Explain briefly each parameter.
5. Discuss briefly Radiation hazards.
6. Explain any two radio nuclide imaging systems in detail?
7. Describe the procedure involved in production of Magnetic Resonance Images.
8. What are the biological effects of Magnetic Fields in Magnetic Resonance Imaging?

III B.Tech. II Semester Regular Examinations, April/May -2005
MEDICAL IMAGING TECHNIQUES
(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on:
 - (a) X-ray tube Filters
 - (b) Grids
 - (c) X-ray detectors
 - (d) Beam Restrictors
2. What do you mean by Fluoroscopy? How the fluoroscopic imaging takes place? Describe briefly. Mention few biological effects of X-rays?
3. What do you understand by the term Spatial Resolution? How is it significant in imaging ? Explain.
4. What are Ultrasound waves. How they are produced? Mention the uses.
5. What are the different types of Biological effects observed with the usage of ultrasound? Give examples.
6. Describe briefly the generation and detection of Nuclear Emission.
7. Explain briefly the principles involved in Nuclear Magnetic Resonance Imaging.
8. What are the biological effects of Magnetic Fields in Magnetic Resonance Imaging?

III B.Tech. II Semester Regular Examinations, April/May -2005
MEDICAL IMAGING TECHNIQUES
(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write a short note on
 - (a) Auger effect
 - (b) Coherent scattering
 - (c) Fluorescent screens
2. What are the short term and long term Biological effects of radiation?
3. Describe the uses of application of Computed Tomography.
4. What are Ultrasound waves. How they are produced? Mention the uses.
5. Specify different Doppler methods and explain them briefly.
6. Describe briefly the generation and detection of Nuclear Emission.
7. Explain briefly the principles involved in Nuclear Magnetic Resonance Imaging.
8. What are the biological effects of Magnetic Fields in Magnetic Resonance Imaging?

III B.Tech. II Semester Regular Examinations, April/May -2005
MEDICAL IMAGING TECHNIQUES
(Bio-Medical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Write short notes on:
 - (a) X-ray tube Filters
 - (b) Grids
 - (c) X-ray detectors
 - (d) Beam Restrictors
2. What is Xeroradiography and explain its mechanism in producing images for medical diagnosis.
3. What do you understand by the term Spatial Resolution? How is it significant in imaging ? Explain.
4. Write short notes on:
 - (a) Transducer
 - (b) Compensation of phase aberration
 - (c) Reflection and Refraction in acoustic propagation
 - (d) Attenuation and absorption in acoustic propagation.
5. What are the biological effects of Ultrasound waves?
6. What is Half life period of an Isotope and how do you calculate "Mean life time" of the Radioactive element.
7. Explain briefly the basics of Nuclear magnetic resonance. Give the fourier spectrum of the NMR signal.
8. How is the blood flow imaging done in Magnetic Resonance Imaging?
