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Question Paper Code: 95Q19

Ph.D. COURSE WORK EXAMINATION, NOV 2019

Elective

Communication Systems

19PCM519 MEDICAL IMAGING TECHNIQUES

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Describe the fundamental principle of ultrasound imaging that make it capable of tissue characterization. CO1- U (20)

Or

- (b) How are ultrasounds generated and detected? Explain piezoelectric effect and ultrasound imaging instrumentation? CO1- U (20)

2. (a) Explain the basic principle of operation of X-Ray transmission computed tomography. CO2- U (20)

Or

- (b) Discuss about the principle of section image recording with suitable diagram. CO2- U (20)

3. (a) Give major advantages of magnetic resonance imaging. Explain about MRI image acquisition and its reconstruction. CO3- U (20)

Or

- (b) What is the principle of MRI pulse sequence? Explain it. CO3- U (20)

4. (a) Describe the principle of operation of positron emission tomography (PET) and give the applications. CO4- U (20)

Or

- (b) Explain in details about single photon emission computed tomography (SPECT) and give the application. CO4- U (20)

5. (a) Why 3-D visualization is important in medical imaging? Explain your answer with the help of an example. CO5- U (20)

Or

(b) Explain in details about scene based and object based visualization techniques. CO5- U (20)