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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VI SEMESTER B.Tech.(BME) DEGREE END SEM EXAMINATIONS, APRIL/MAY 2017

SUBJECT: BASIC CLINICAL SCIENCES III (BME 302)
(REVISED CREDIT SYSTEM)

Saturday, 22nd April, 2017 : 2 to 5 pm

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

1. Answer any **THREE** full questions from **PART- A**, any **FOUR** full questions from part **B** and any **THREE** full questions from **PART- C**. Use separate answer books for **PART-A**, **PART-B** and **PART-C**.
2. Draw labeled diagram wherever necessary.

PART- A. RADIOLOGY (Max. Marks 30)

- Q1) Define radiographic quality. Enumerate factors affecting Radiographic Quality. 10
Describe any four in detail.
- Q2) What are the types of digital Radiography? Describe any one type in detail. 10
- Q3) Enumerate the equipment's used in mammography. What is the target materials and 10
focal spot size in mammography? Describe about the film screen combination used in
mammography.
- Q4) Mention at-least ten properties of X-ray. Draw the diagram of ultrasound transducer. 10
Mention the types of transducers and explain the mechanism of production of
ultrasound waves.

PART- B. RADIOTHERAPY (Max. Marks 40)

- Q1) Define Acute Radiation Syndrome and its Sub Syndromes. 10
- Q2) Describe in detail, Radiation Carcinogenesis. 10
- Q3) What do you mean by OER, RBE, LET? Describe any 2 in detail. 10
- Q4) Describe the Mammalian Cell Survival Curve Models. 10
- Q5) Describe in detail, the 4 "R"S of Radiobiology 4+6

PART-C. NEUROLOGY (Max. Marks 30)

- Q1) Describe, Evoked Potentials – techniques and uses. 10
- Q2) Describe the anatomy of the spinal cord, and function of the various tracts. 10
- Q3) Write short notes on: 5+5
 (i) Nerve Conduction Studies.
 (ii) Electromyography
- Q4) Discuss about the organization of the peripheral nervous system. 10