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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

VI SEMESTER B.Tech.(BME) DEGREE MAKE-UP EXAMINATIONS, JUNE 2017

SUBJECT: BASIC CLINICAL SCIENCES III (BME 3201)
(REVISED CREDIT SYSTEM)

Thursday, 15th June, 2017: 2 to 5 pm

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

- 1. Answer ALL questions from PART-A, PART-B and 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) Explain dual nature of X-rays. Enumerate the properties of X-rays. Draw X-ray tube with labeling. 2+4+4
- Q2) Define film. Enumerate the layers of film with a diagram. Explain emulsion characteristics. Explain sensitivity Speck. 2+2+4+2
- Q3) Give five factors affecting radiographic quality. Explain Penumbra (Edge gradient) and factors affecting it with diagram. 3+7

PART- B. RADIOTHERAPY. (Max. Marks 40)

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

PART-C. NEUROLOGY (Max. Marks 30)

- Q1) Describe about the anatomy of the brain with diagrams including: 10
- Structural areas
 - Functional areas
- Q2) Write short notes on the following: 10
- (i) Seizure and Epilepsy
 - (ii) Waveforms commonly seen on routine EEG
- Q3) Describe briefly about the structure of neuromuscular junction. Explain about transmission across a neuromuscular junction. 10