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MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent unit of MAHE, Manipal 576104)

V SEM B.TECH (BME) DEGREE END SEMESTER EXAMINATIONS JAN/FEB 2021

SUBJECT: BASIC CLINICAL SCIENCE I (BME 3151)

(REVISED CREDIT SYSTEM)

Thursday, 28th January 2021: 2 PM to 5 PM

TIME: 3 HOURS

MAX. MARKS: 50

Instructions to Candidates:

1. Answer All questions of PART-A, PART-B, PART-C and PART-D in separate papers and scan sequentially into a single PDF file and upload.
2. Draw labeled diagram wherever necessary

PART A: CARDIOLOGY. (Maximum Marks 10)

- 1 Describe the various phases of cardiac cycle (5)
2. Explain the ECG changes in ventricular enlargement (3)
- 3 Enumerate the types of pacemakers and their applications (2)

PART B: ORTHOPAEDICS. (Maximum Marks 12)

- 4 Describe the anatomy of joint. Discuss the implant properties used in total joint Arthroplasty. (5)
- 5 Explain the parts of above knee prosthesis. (3)
- 6 Enumerate the methods of enhancing the fracture union and explain any one in detail. (2)
- 7 Write short notes on external fixator. (2)

PART C: RADIOLOGY. (Maximum Marks 14)

- 8 Describe the interaction of X ray with matter. (5)
- 9 Explain characteristic curve. (3)

10. Enumerate the differences between CR and DR. (3)
11. Write in brief about grids. (3)

PART D: RADIOTHERAPY. (Maximum Marks 14)

12. Describe the effect of radiation on biological molecules. (5)
13. Explain the concepts of radio-sensitivity and radio-resistance. (3)
14. Enumerate any 3 R's of radiobiology. (3)
15. Write briefly on ideal brachytherapy source. (3)