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MANIPAL INSTITUTE OF TECHNOLOGY
(A Constituent Institute of MAHE – Deemed University)
Manipal – 576 104



FIFTH SEMESTER B.E. DEGREE MAKE-UP EXAMINATIONS- JANUARY 2007

SUBJECT: BASIC CLINICAL SCIENCES-1 (BME 301)
(REVISED CREDIT SYSTEM)

Thursday January 04, 2007, 2.00 p.m. to 5 p.m.

TIME: 3 HOURS

MAX. MARKS: 100

Instructions to Candidates:

1. Answer any FIVE full questions from PART-A and any FIVE full questions from PART-B
2. Use separate answer books for PART-A and PART-B
3. Draw labeled diagram wherever necessary.

Part – A CARDIOLOGY

1. (a) Draw a labeled diagram of the Ultrasonic transducer. 05
(b) Draw a labeled diagram of the Heart and explain its functional anatomy. 05
2. (a) How does the permanent Pacemaker works? 03
(b) Which are the radiation hazards? 02
(c) What is ASD/VSD? 02
(d) Write a note on temporary pacemaker, site of entry & its para meters. 03
3. (a) What is atrial flutter & atrial fibrillation? 02
(b) Draw a labeled diagram of Limb lead connection for lead III and explain the position of lead placement in chest leads. 03
(c) How do you diagnose LVH/RVH/LAE/RAE by ECG? 02
(d) What is the normal paper speed in ECG? What does x-axis and y-axis refers? 02
(e) Increase in heart rate is called... ..and Decrease in heart rate is called..... 01
4. (a) Describe diagrammatically about the instrumentation of Cardiac Catheterization Laboratory. 06
(b) What is Metabolic equivalent? 02
(c) Write a note on Bi-ventricular pacing. 02
5. (a) What are the contra-indications for TMT? 04

- (b) What are the indications for Pacemaker implantation? 04
- (c) What is ICD? Write one indication for implantation. 02
- 6 (a) Explain the anatomy of conduction system of the heart. 05
- (b) What are the Drug Eluting Stents? 02
- (c) What is PTCA? What are the types of balloons used and which are the materials used for the same. 03

Part – B ANAESTHESIOLOGY

1. Explain with a neat diagram the physical principles of pressure transducer system. 10
2. Explain how syringe pumps are different from infusion controllers. Describe the working principle of peristaltic infusion device. 5+5=10
3. Describe Henry's law of solubility. Explain one of its application. 5+5=10
4. Describe the functioning of patient controlled analgesia device. 10
5. Enumerate any six safety mechanisms incorporated in anaesthesia machine. Describe in brief any two of them. 6+4=10
6. Define. 4+6=10
- (a) Absolute humidity (b) Relative humidity
- (c) With the help of a schematic diagram explain the construction of a heated blow over humidifier.

