

**DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY,
LONERE – RAIGAD – 402 103**

Winter Semester Examination –Dec 2018

Branch: M.Tech. (Electronics)

Subject: Medical Electronics

Date:- 1/1/2019

Marks: 60

Semester: I

Subject Code:- MTEEE114B

Time: 3 Hrs.

Instructions to the Students

1. Figures to the right indicate the full marks.
2. Attempt any five questions of the following.
3. Illustrate your answers with neat sketches, diagram, etc., wherever necessary.
4. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

Q.1 Attempt any two

(12)

- a) List the different diagnostic equipment? Explain any one diagnostic equipment.
- b) With neat sketch, explain diagram of the X –ray image intensifier?
- c) How the therapeutic equipment are classified? Explain any therapeutic equipment in detail?

Q.2 Attempt any two

(12)

- a) List the different surface electrodes and explain them in details.
- b) Explain the different electrodes used for ECG measurement?
- c) What are the voltage range ,frequency range used for ECG, EMG, and EEG signals.

Q.3 Answer the following

(12)

- a) What are different selection factors for transducers used for biomedical applications?
- b) Draw and explain the different temperature transducers in details?

Q.4 Answer the following

(12)

- a) Draw and explain block diagram of man instrument system?
- b) Draw and explain block diagram of EEG machine used for recording and plotting the EEG signals?

Q.5 Answer the following

(12)

- a) Draw and explain ECG signal in detail.
- b) Explain the operating principle of ultrasonic blood flow measurement along with neat diagram. Specify the transducer and operating frequency of measuring signal.

Q.6. Answer the following

(12)

- a) Comment on Macroshock and Microshock hazards
- b) What are the different electrical accident prevention methods used in medical equipments?

***** End *****