

510706

Roll No. _____

Total No. of Pages: 2

510706

B. Tech. V - Sem. (Main/Back) Exam., (Academic Session 2021- 2022)
Electronics & Communication Engineering
5EC5 – 11 Bio-Medical Electronics

Time: 2 Hours

Maximum Marks: 80
Min. Passing Marks:

Instructions to Candidates:

*Part – A: Short answer questions (up to 25 words) 5×2 marks = 10 marks.
All five questions are compulsory.*

*Part – B: Analytical/Problem solving questions 4×10 marks = 40 marks.
Candidates have to answer four questions out of six.*

*Part – C: Descriptive/Analytical/Problem Solving questions 2×15 marks = 30 marks.
Candidates have to answer two questions out of three.*

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

PART – A

- Q.1 What are the two heart sounds, heard by a stethoscope? [2]
- Q.2 Which bones are referred in ECG for positioning the electrodes? [2]
- Q.3 Which type of electrodes are used in EEG acquisition? [2]
- Q.4 Which imaging modality works on principle of reflection? [2]
- Q.5 What is the maximum “Let go” current at 50Hz, which a human being can survive? [2]

[510706]

Page 1 of 2

PART - B 3

- Q.1 In an ultrasonic transducer experiment, to find the velocity of blood in a blood vessel, Forward time was ' t_1 ' and Reverse time was ' t_2 '. If the distance between the T_x and R_x was ' d ', the velocity of sound was V_1 , find the expression for velocity of blood flow. [10]
- Q.2 Define the ECG chest electrode placement with suitable diagram. [10]
- Q.3 What are the four heart sounds? Position them with an ECG waveform. [10]
- Q.4 What are the two modes of MRI? What are the uses of them? [10]
- Q.5 Define CPR. What are the precautions to be taken in CPR? [10]
- Q.6 Differentiate between orthotics and prosthetics. Give one example of each. [10]

PART - C 1

- Q.1 Define the 10-20 system of ECG. Draw a diagram of ECG electrode placement with all the planes. [15]
- Q.2 Define the functioning of heart lung machine. How a heart lung machine purifies the gas mixture in the blood? [15]
- Q.3 Define plethysmography. How plethysmography is different than pulse oximetry? [15]

<https://www.btubikaner.com>
Whatsapp @ 9300930012
Send your old paper & get 10/-
अपने पुराने पेपर्स भेजे और 10 रुपये पायें,
Paytm or Google Pay से