

10. (a) Draw the circuit diagram of dc defibrillator and explain its working.

Or

- (b) Draw the block diagram of automatic Bekesy audio meter and explain the measurement procedure.
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S.No. 22

12PELZ02

(For the candidates admitted from 2012–2013 onwards)

M.Sc. DEGREE EXAMINATION,  
NOVEMBER 2017.

Second Semester

Electronics and Communication

BIOMEDICAL INSTRUMENTATION

Time : Three hours

Maximum : 75 marks

SECTION A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Draw a typical ECG waveform and analyze it.

Or

- (b) Explain the uses of electrode paste applied during biomedical recording.

2. (a) Discuss the different types of noises present in low level recording circuits.

Or

- (b) Explain the origin of different heart sounds.

3. (a) Discuss the working of electromagnetic blood flow meter.

Or

- (b) Describe with a neat sketch, the optical method of counting red and white cells.

4. (a) Write Bloch equation and give your interpretation.

Or

- (b) Discuss any five advantages of NMR imaging system.

5. (a) Describe the different types of artificial heart valves.

Or

- (b) Draw the block diagram of an anesthesia machine and explain.

SECTION B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) What are bioelectric signals? Discuss the electrical activity of the bioelectric signal.

Or

- (b) Describe a strain gauge pressure transducer with a suitable diagram.

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7. (a) With a neat block diagram, explain the working of ECG machine.

Or

- (b) Draw the schematic diagram of an EEG machine and explain its working.

8. (a) Draw a typical pO<sub>2</sub> electrode and explain how it is used to measure the partial pressure of oxygen of blood.

Or

- (b) Draw the block diagram showing the principle of Coulter counter and explain.

9. (a) Describe with a neat sketch the different scanning systems used in computer tomography.

Or

- (b) Draw the block diagram of an NMR imaging system and explain the function of all the blocks.

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