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Question Paper Code: 55503

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Fifth Semester

Electronics and Instrumentation Engineering

15UEI503 - BIOMEDICAL INSTRUMENTATION

(Regulation 2015)

Duration: One hour

Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. The main advantage of instrumentation amplifier is CO1- R
(a) Low input impedance (b) High bias and offset currents
(c) High CMRR (d) Low slew rate
2. _____ electrode is used for the measurement of more than one ions CO1-U
present in the physiological measurement.
(a) Glass (b) Micro
(c) Body surface (d) Specific ion
3. The Lead vector for lead I, II, III in ECG is CO2-U
(a) 0, 60, 120 Deg (b) 30, 60, 0 Deg (c) 0, 30, 60 Deg (d) 30, 60, 90 Deg
4. Johnson Noise is otherwise called as _____ noise. CO2- R
(a) SHOT (b) Flicker (c) Thermal (d) Environmental
5. Which one of the following condition will not a cause of respiratory CO3- R
alkalosis?
(a) Fever (b) Anxiety
(c) Laryngeal obstruction (d) Salicylate toxicity
6. Homeostatic regulation of the cardiovascular system is designed to CO3- R
maintain _____
(a) Constant blood volume (b) Constant arterial blood pressure
(c) Constant cardiac output (d) Constant venous blood pressure
7. If the defibrillator detects fibrillator, the capacitors with the device CO4- R

charged up to ___

- (a) 100 V (b) 250 V (c) 375 V (d) 750 V
8. Biological tissues are coagulated by thermal means if the requisite temperature is maintained at CO4 -R
(a) 67°C (b) 60°C (c) 70°C (d) 77°C
9. Which of the following is not a factor determining spatial resolution? CO5 -R
(a) Frequency (b) Transmit intensity (c) Pulse interval (d) Acquisition
10. X-ray machines operating at tube voltages in the range of CO5- R
(a) 100KV (b) 600 KV (c) 1000KV (d) 400KV

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11. Explain in detail about the electrical activities associated with bioelectric signals. CO1- U (8)
12. Illustrate the 10-20 lead configuration measurement of EEG measurement, with neat sketch. CO2- U (8)
13. Illustrate the any two methods of respiratory rate measurement CO3-U (8)
14. Analyze the physiological effects of electric current on human body. CO4- U (8)
15. Explain in detail about Computer Tomography with neat sketch CO5- U (8)

