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Reg. No. | | | | | | | | | | | | |

Question Paper Code : 21409

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Sixth/Seventh Semester

Electronics and Communication Engineering

EC 2021/EC 601/EC 1001/10144 ECE 11 – MEDICAL ELECTRONICS

(Regulations 2008/2010)

(Common to PTEC 2021/10144 ECE 11 – Medical Electronics for B.E. (Part-Time) Sixth/Seventh Semester – ECE – Regulations 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is bioelectric potential?
2. Define latency in EMG.
3. How does the pH value determine the acidity and alkalinity in blood fluid?
4. List the various indirect methods for the measurement of blood pressure.
5. What is meant by single channel telemetry?
6. When does the need for pacemaker arise? What is its function?
7. Distinguish between radioscopic and fluoroscopic techniques
8. Bring out the clinical applications of endoscopy.
9. Define the term thermograph.
10. What is the principle of diathermy?

PART B — (5 × 16 = 80 marks)

11. (a) Explain the different lead systems used in the measurement of ECE waveform and also explain the working of an ECG recorder.

Or

(b) With a neat diagram, explain the working of EMG systems and also give its typical waveforms that represent its signal characteristics.

12. (a) Explain the function of a human respiratory system and the possible measurement and inferences made out of them.

Or

(b) Draw the block diagram of automated electro sphygmomanometer for blood pressure measurement and explain its operation.

13. (a) Explain the working of DC defibrillator.

Or

(b) Give the importance of biotelemetry and also explain the different elements involved in biotelemetry circuit.

14. (a) With its principle of operation, explain the working of diagnostic X-ray equipments.

Or

(b) What are the various radio isotopes used in diagnosis. List its advantages and disadvantages. Also explain how these isotopes are used in radiation therapy.

15. (a) What is an endoscope? List the types of commonly available endoscopes. With schematic diagram explain the working of endoscopic laser coagulator.

Or

(b) Explain how electrical safety and protection is to be followed during handling of medical equipments.

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