C **Reg. No. :** | | | | | | | | | | |

Question Paper Code: 59422

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Elective

Electronics and Communication Engineering

15UEC922- MEDICAL ELECTRONICS

(Regulation 2015)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. An organ is made of several types of CO1- R

   (a) tissue (b)molecules (c) cell (d) All the above

2. The range of systolic blood pressure for a normal adult is _____ CO2- R

   (a) 95 to 145 mm Hg (b) 75 to 135 mm Hg

   (c) 55 to 125 mm Hg (d) 65 to 125 mm Hg

3. Genes that play a role in uncontrolled cell growth are known as CO3- R

   (a) Tumor genes. (b) Growth genes (c) Oncogenes (d) Protogenes

4. _____ is the treatment process by which, cutting coagulation of tissues are obtained. CO4- R

   (a)Thermography (b) Diathermy (c)Endoscope (d) Dialysis

5. The blood plasma is composed by CO5- R

   (a) Blood cells (b) Platelets

   (c) Solution of water and salts, proteins etc.., (d) Both a & b

PART – B (5 x 3= 15Marks)

6. Define electrode and list its types. CO1- R
7. What are systolic and diastolic pressures? CO2- R
8. Distinguish between internal and external pacemaker. CO3- R
9. What is radio pill? Mention the application of radio pill. CO4- R

10. What is the purpose of using resuscitation unit? CO5- R

PART – C (5 x 16= 80Marks)

11. (a) What are the different types of electrodes used in medical field? CO1- App (16)

Or

(b) What is known as biopotential electrodes? Draw its equivalent circuit and explain various types of biopotential electrodes. CO1- App (16)

12. (a) Explain briefly about Calorimeter and Photometer? CO2-U (16)

Or

(b) (i) State and explain the working principle of electromagnetic blood flow meter. CO2-U (8)

(ii) Briefly explain the working of Blood cell counter. CO2-U (8)

13. (a) With a neat diagram explain the block diagram of arterial and ventricular triggered pacemaker. CO3-U (16)

Or

(b) Give a brief notes on Defibrillator? CO3-U (16)

14. (a) What is meant by radiography? Explain in detail about the process of medical imaging with the help of computed radiography. CO4- U (16)

Or

(b) Define leakage current and explain the impact of leakage in cardiac patient and discuss about the prevention methods CO4- U (16)

15. (a) Discuss the various applications of lasers in different fields of medicine. CO5- U (16)

Or

(b) Define tomography. Explain the various tomographic techniques available with the help of suitable diagrams. CO5- U (16)