B.E. (Electrical Engineering (Electronics & Power)) Eighth Semester (C.B.S.)

Elective-III : Bio-Medical Engineering

P. Pages : 2 **NRT/KS/19/3657**

Time : Three Hours * 0 6 8 9 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Diagrams and chemical equations should be given whenever necessary.
11. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain the structure of human cell and its constituents with diagram. **7**

b) Discuss the problems encountered in measuring living system. **7**

OR

2. a) Explain the different parts of central nervous system and their activity. **7**

b) What are the different sub-systems in our body. Explain them with respect to their function. **7**

3. a) Explain 10-20 electrode system. **6**

b) Explain automatic blood cell counter to count - RBC. **7**

OR

4. a) Explain with neat sketch electro-Retinography. **6**

b) Explain recording system ECG & ECG waveform. **7**

5. a) What are the methods for measuring blood pressure? draw a typical setup & Explain. **7**

b) Explain structure of muscle cell & Nerve cell. **6**

OR

6. a) What are the different methods of respiration rate measurement? Explain any one with suitable diagram. **7**

b) Explain the method of blood pH measurement what is its utility? **6**

7.	a)	Draw the block diagram of automated electro sphygmomanometer for blood pressure measurement & explain its operation.	**7**
	b)	Give classification of pacemaker. Also explain operation of asynchronous pacemaker.	**6**

OR

8.	a)	Explain the block diagram of servo controlled ventilator.	**7**
	b)	List the different methods used for direct measurement of blood pressure.	**6**
9.		Draw & explain the block diagram of a typical electro therapeutic simulator.	**13**

OR

10.		Why pacemaker are required? Explain how it is useful in human hearts nervous system.	**13**
11.		What are the applications of myoelectric control system? Explain myoelectric control of paralyzed muscles.	**14**

OR

12.		What is the use of blood pump respiration controller? Explain it with suitable diagram.	**14**

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