ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END (EVEN)SEMESTER EXAMINATION : MAY 2021** (Academic Session: 2020 – 21)		
Name of the Program:	B. Tech. (CSE)	**Semester:**	VIII
Paper Title :	Medical Electronics	**Paper Code:**	SPH44104
Maximum Marks :	**40**	**Time duration:**	3 Hours
Total No of questions:	**08**	**Total No of Pages:**	01

Answer all the Groups

Group A

(Answer all the questions)

$$5 \times 1 = 5$$

1)

a) Define resolution. [CO1]
b) Draw hysteresis loop and explain. [CO1]
c) Give an example of bioanalytic class of sensor. [CO5]
d) What is humidity sensor? [CO4]
e) What is the data rate requirement for endoscope capsule? [CO3]

Group B

(Answer any three of the following)

$$3 \times 5 = 15$$

2) Describe the sensing principle of NO_2 microbial biosensor with relevant diagram. [CO1]
3) Explain carbon dioxide sensor for blood with required diagram. [CO2]
4) Mention the necessary and sufficient special features of biosensors. [CO5]
5) Write short note on any one of the following:
a) EOG; b) EEG; c) EMG; d) Pulse oxymeter. [CO4]

Group C

(Answer any two of the following)

$$2 \times 10 = 20$$

6) Explain in details the working process of electromagnetic flow sensor with a 3D diagram. Also highlight the role of the magnetic field with necessary drawings. (7+3=10) [CO5]
7) Classify biomedical sensors according to working principle. State the group of sensors that belongs to each category along with examples and due justification. (10) [CO4]
8) Explain the working principle of blood glucose sensor. What is the definition of resting an action potential? What is the importance of studying medical electronics? (4+3+3= 10) [CO3]