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

Question Paper Code: 99B19

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Biomedical Engineering

19UBM919 -MEDICAL EMBEDDED SYSTEM

(Regulation 2019)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	What is watch dog timer?	CO1 -U
2.	Recall the functions of memory?	CO1- U
3.	Summarize about Bus.	CO1- U
4.	Give the definition I2C.	CO1- U
5.	Define EDLC	CO1- U
6	Summarize the Object oriented model.	CO1 -U
7	Give the purpose of ECG in medical diagnosis and treatment.	CO1-U
8	How does SPO2 work and what are the factors that can affect SPO2 readings?	CO1-U
9	How does an internal pacemaker work?	CO1-U
10	Differentiate between external and internal pacemaker.	CO1-U

PART – B (5 x 16= 80Marks)

11.	(a)	How to select the processor based upon its architecture and applications? Explain with example.	CO1- U	(16)
		Or		
	(b)	Can you explain how a watchdog timer helps prevent system crashes or failures?	CO1 -U	(16)

12.	(a)	Compare the serial communication protocols RS232, RS422 and RS485.	CO1 -U	(16)
		Or		
	(b)	Explain the Serial peripheral Interface [SPI] bus in detail.	CO1 -U	(16)
13.	(a)	Summarize the objectives of Embedded product development life cycle.	CO1 -U	(16)
		Or		
	(b)	Explain common computation models and illustrate the purpose of each.	CO1- U	(16)
14.	(a)	Construct an effective EEG amplifier in capturing and amplifying the brain signals in a patient monitoring system.	CO2- App	(16)
		Or		
	(b)	Design a pulse oximeter to improve more accurate, efficient and user friendly for a patient monitoring system?	CO2- App	(16)
15.	(a)	Explain with a neat block diagram of a demand pacemaker.	CO1- U	(16)
		Or		
	(b)	Illustrate with a neat block diagram of a standby pacemaker in detail.	CO1- U	(16)