Karunya University
(Karunya Institute of Technology and Sciences)
(Declared as Deemed to be University under Sec.3 of the UGC Act, 1965)

End Semester Examinations - 2015-16 Even Semester - May 2016

14EC3076 Embedded Systems for Biomedical Instrumentation

Set A

Time : 3 hrs
Total Marks: 100

1.	(a) Write down the various steps involved for the conversion of assembly code into machine code	(10)
	(b) Write short notes on various design process used in embedded system design	(10)
	OR	
2.	(a) Explain in detail about the software development tools used in real time system	(10)
	(b) What are the types of an embedded system?	(2)
	(c) Describe the various functional components involved in embedded system application development	(8)
3.	(a) Comment briefly on switch interface issues related to embedded systems	(10)
	(b) Describe the operation of successive approximation type analog to digital converter	(10)
	OR	
4.	Design a stop watch system which has four keys: Start, Stop, Pause and Continue. The output should display the time in minutes and seconds in the display unit	(20)
5.	(a) Write short notes on Java based embedded system design	(10)
	(b) Explain in detail about simulation and emulation of an embedded system	(10)
	OR	
6.	(a) Explain in detail about various components involved in medical instrumentation system	(10)
	(b) Describe the various performance characteristics of transducers in biomedical instrumentation	(10)
7.	(a) What is medical instrumentation system?	(4)
	(b) Discuss the role of body sensor networks in biomedical instrumentation and draw the system architecture to describe the use of sensor networks for biomedical applications	(16)
	OR	
8.	Design an embedded system to acquire real time physiological signal from the patient at the input port. Select any known embedded processor of your interest. Support your hardware design with a block diagram and the software development with a flow diagram	(20)
9.	(a) Discuss the role of medical image processing in biomedical applications	(6)
	(b) With neat sketch, illustrate how an embedded system is used for classification and diagnosis of various diseases	(14)

Wishing you All the Best