Code No: IT19421

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (Autonomous)
B.E. (IT) IV/IV II Sem (Main & Backlog) Examination April – May 2019
Embedded Systems and Internet of Things

Time: 3 Hours

Max Marks: 75

Note: Answer all questions from **Section-A** at one place in the same order
Answer any **five** questions from **Section-B**

Section - A (25 Marks)

1	What does the term Embedded system mean ?	(2)
2	What are RISC and CISC processor ?	(3)
3	Differentiate between CALL and JUMP instructions.	(2)
4	Explain DAC interface with diagram.	(3)
5	From point of view of requirements, how is a real-time operating system different from general purpose operating system?	(2)
6	List various advanced features of ARM processor.	(3)
7	What are advantages of IoT ?	(2)
8	Explain Message queuing telemetry transport (MQTT) Protocol.	(3)
9	Define Raspberry PI.	(2)
10	List some popular websites built on Django framework?	(3)

Section - B (50 Marks)

11	(a)	List 4 major differences between a microprocessor and a microcontroller.	(5)
	(b)	Explain the 8051 block diagram and its features.	(5)
12	(a)	Write an ALP to subtract two 8-bit numbers with or without borrow.	(5)
	(b)	Name the addressing modes of the following instructions. (i)MOV 35H,@R0 (ii) SUBB A, R1 (iii) XRL A,@R1.	(5)
13	(a)	Discuss the principles in design of embedded system using RTOS.	(5)
	(b)	What are the debugging techniques of RTOS ? Explain any one.	(5)
14	(a)	Explain all 4 fundamental components of IoT system, which tells us how IoT works.	(5)
	(b)	What are the communication protocols related to IoT?	(5)
15	(a)	What is meant by a Smart City, in the context of Internet Of Things (IoT)?	(5)
	(b)	Discuss a case study of IoT system for Agriculture.	(5)
16	(a)	Explain all the registers used in 8051microcontroller in brief.	(5)
	(b)	What are the types of interrupts in 8051.	(5)
17	(a)	What are the basic requirements for good real time operating system(RTOS)	(4)
	(b)	Why will the Internet of Things(IoT) be successful in the coming years?	(3)
	(c)	Explain architecture of Django faramework?	(3)

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