



C14-EC-605

4739

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**MARCH/APRIL—2017**  
**DECE—SIXTH SEMESTER EXAMINATION**  
**ADVANCED MICROCONTROLLERS**

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. List any three bit-oriented instructions of PIC 16F877 microcontroller.
2. Compare between PIC 16F8XX and PIC 16C6X microcontrollers.
3. List any three applications of PIC 16F877 microcontroller.
4. List any three features of RISC processors.
5. Write a short note on 3-stage pipelining of ARM7 processor.
6. What is thumb mode in ARM?
7. List the addressing modes of ARM7 processor.
8. Draw the general block diagram of an embedded system.
9. List any three types of real time operating system (RTOS).
10. List any three on-board communication interfaces of an embedded system.

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**PART—B**

10×5=50

- Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11.** (a) Draw the block diagram of PIC 16F877 microcontroller. 5  
(b) Write a short note on I/O ports of PIC 16F877. 5
- 12.** Explain the memory organization of PIC 16F877.
- 13.** Explain conditional and unconditional branch groups of instructions of PIC 16F877.
- 14.** Draw and explain the interfacing circuit of DC motor with PIC 16F877.
- 15.** Explain the architecture of ARM7 processor with a neat diagram.
- 16.** Explain any four arithmetic instructions of ARM7 processor.
- 17.** Compare between RISC and CISC architectures.
- 18.** (a) Compare between embedded system and general computing system. 5  
(b) Explain the following terms with reference to an operating system : 5  
(i) Task  
(ii) Process

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