



C14-EC-605

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BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
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 six features of PIC 16F877 microcontroller.
2. List any three applications of PIC microcontrollers.
3. List the status flags of PIC 16F877.
4. List any three arithmetic instructions of ARM7 processor.
5. List the important features of ARM7 processor.
6. Mention any three applications of ARM processor.
7. Define thumb state of ARM processor.

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8. What is thread^{*} in the context of operating system?
9. What is an embedded system?
10. Compare between normal OS and RTOS.

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. Draw and explain the block diagram of PIC 16F877 microcontroller in brief.
12. Explain the following instructions of PIC 16F877 :
- (a) RRF f, d
 - (b) MOVF f, d
 - (c) COMF f, d
 - (d) SUBLW k
13. Explain memory organization of PIC 16F877 microcontroller.
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 the addressing modes of ARM7 processor.

17. Explain the ^{*} register structure of ARM7 processor.
18. (a) Draw the general block diagram of an embedded system. 5
(b) Explain core of the embedded system. 5

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