

AQ-2710

Faculty of Engineering & Technology

M.E. (Computer Engg.) (Full Time) Second Semester (C.G.S.) Examination

EMBEDDED SYSTEM DESIGN

Paper—2 KMEF 3

Time—Three Hours]

[Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
- (2) Assume suitable data wherever necessary.
- (3) Illustrate your answers wherever necessary with the help of neat sketches.
- (4) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) Define embedded system with example. List the features and application areas of embedded system. 7
- (b) How does Kernel decide which task has to done ? 6

OR

2. (a) Explain software architecture of embedded system. 7
- (b) Compare Threats and Mutex. Explain inter thread communication. 6
3. (a) Explain Von Neumann architecture Vs. Hardware architecture and PIC. 7
- (b) Write the features of RISC implemented by PIC 18 microcontroller. 7

OR

4. (a) Explain the PIC 18 configuration register and use of oscillator clock source in it. 7
- (b) Explain how interrupt precocity is set in PIC 18. 7

5. (a) State and explain different branch condition. 6
 (b) LEDs are connected to bit in Port B and Port C. Write a C18 program that shows the count from 00H to FFH on LEDs. 7

OR

- 6 (a) What are the content of WREG after executing the following code :

```
MOVLW    0x55
MOVWF    PORTB
MOVWL    0xAA
MOVWL    PORTB
BRA      OVER.
```

7

- (b) Write down the steps in programming the A/D converter using polling. 6
 7. (a) Write the notations and assumption of clock driven scheduling. 6
 (b) Explain the concept of sporadic job scheduling. 7

OR

8. (a) Explain in brief, how to handle frame overrun and how to do mode changes ? 7
 (b) Explain, in general, the structure of cyclic schedules. 6
 9. (a) Explain the schedulability test for fixed priority tasks with arbitrary response time. 6
 (b) What are the sufficient schedulability conditions for RM and DM algorithm ? 7

OR

10. (a) Explain the comparison between fixed priority and dynamic priority algorithm. 6
 (b) Explain, in brief, schedulability test for EDF algorithm. 7
 11. (a) Explain, in brief, consumption and replenishment rules of constant utilization server. 7
 (b) Explain, how bandwidth preserving server works ? 7

OR

12. (a) What is deferrable server ? Explain, in brief, the operation of it. 7
 (b) Explain, the simple acceptance test in fixed priority system. 7