

M.Sc. (Applied Electronics) Third Semester (New) (CGS)
Elective - II : 15038 - 3 AE 4 : Embedded System Design

P. Pages : 2

Time : Three Hours



AR - 2544

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Illustrate your answers necessary with the help of neat sketches.

1. a) Explain various hardware components of an embedded system. 7
- b) Discuss processor in Embedded system. 7

OR

2. a) Explain functioning of assembler, linker, locator with suitable example. 7
- b) What are software tools used in design of an Embedded system. 7
3. a) What is task? Explain task states. Give task characteristics. 6
- b) Give need of operating system. Define RTOS, and discuss its types. Name some common RTOS. 7

OR

4. a) Discuss interprocess communication using semaphore. 6
- b) Differentiate between static and dynamic scheduling in multi - processor system. 7
5. Discuss memory management in RTOS. Explain memory selection criteria for different Embedded system using different case studies. 13

OR

6. a) What is RTOS? Why it is necessary in Embedded System? 6
- b) Give memory management strategy for embedded system. 7
7. a) Describe features of 8051 and discuss its important pins. 7
- b) Draw and explain architecture of 8051 with focus on SFR or draw PSW register. 7

OR

8. a) Explain interrupt structure of 8051. Discuss IE register format. 7
- b) Draw and explain PCON & SCON register structure. 7

9. a) Give functioning and features of simulator. 6
b) Describe - 7
i) Cross Compiler
ii) Simulator with reference to embedded system.

OR

10. a) Discuss the co-operative round robin scheduling using circular tasks. 6
b) Describe round robin cyclic scheduling with time slicing. 7
11. a) What is CAN BUS? How does data transmission take place using CAN BUS? 6
b) Give meaning of I²C BUS. Describe serial communication using the I²C BUS. 7

OR

12. Discuss synchronous, ISO - synchronous and Asynchronous communications from serial devices for Embedded systems. 13
