



- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Assume suitable data whenever necessary.
 9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Define Embedded systems. Draw and explain components of embedded- system hardware. 7

b) Differentiate between embedded system and general computing system. 6

OR

2. a) Write note on types of processors or core that can be used in embedded system. 6

b) Explain how embedded system is classified. Also write and explain skills required for an embedded system designer. 7

3. a) List the different types of memory and explain their differences. 7

b) List and explain functions of embedded software development tools. 6

OR

4. a) What are the different design goals? Explain the need of Co-design. 7

b) Write note on: 6

i) Cross - Compilers.

ii) Cross- assemblers.

5. a) Explain RTOS kernel Architecture. 7

b) Write note on: 7

i) Semaphore

ii) Thread and Mutex.

OR

6. a) Explain RTOS Task Scheduling models. 7
b) Explain how interrupts are handled in RTOS. 7
7. a) Differentiate between serial and Parallel communication. 6
b) Explain the working of I2C bus with the help of I2C bus terminology. Also mention the bit format of I2C bus. 7

OR

8. a) Write note on: 6
i) Timer and counting Devices.
ii) Watchdog Timer.
b) Explain in detail, Distributed network embedded systems architecture. 7
9. a) What is a feature in 'C' that makes it a popular high-level language for an embedded system? 7
b) What are the advantages of re-entrant functions in embedded system software? 7

OR

10. a) Write and explain advantages and disadvantages of C++. 7
b) What are features in Java that makes it a highly useful high-level language for an embedded system in many network related applications? 7
11. a) Draw and explain architecture of μc 8051. 7
b) Differentiate between microprocessor and microcontroller. 6

OR

12. a) Explain TMOD and TCON register of μc 8051. 6
b) Explain various addressing modes used in μc 8051. 7
