Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: Attempt any five questions and all questions carry equal marks.

Section – A

1. (a) What are timing diagrams and justify the terms Set up Time, Hold Time and Clock to Q time by sketching timing diagrams of D Flip Flop. (8)
(b) What is “Watchdog Timer”? (4)
(c) What are Embedded System Evolution Trends? (8)

2. (a) What is Hardware/Software Co-Design? (10)
(b) Write a detailed note on Hardware/Software Partitioning Problem. (10)

3. (a) Write a detailed note on Co-synthesis. (10)
(b) What do you mean by state transition diagrams? Explain with the example of Chess Game Designing. (10)

Section – B

4. (a) Explain in detail the various CPU Registers available in PIC Microcontroller. (10)
(b) Explain in detail the following instructions of PIC Microcontroller (10)
   A) SLEEP
   B) IORLW
   C) CLRWDW
   D) BTFSC
   E) INCFSZ

5. (a) Explain in detail the various memory types. (10)
(b) Explain in detail the example of Digital Camera Embedded System. (10)

6. (a) What are Real Time Operating Systems (RTOS)? What are its classifications? (7)
(b) What are Tasks and Task States in an RTOS? (6)
(c) What do you mean by Memory Management in RTOS? (7)