

Seat
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मुख - 008

ELECTIVE - II

**Advanced Embedded System Design
(1123)**

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any five** each question carries equal marks.
5. Draw well label diagram and assume suitable data whenever necessary.

1. a) Describe the processor selection criteria for an Embedded system with four case studies. 10
b) What are different Software and Hardware challenges in development of Embedded system. 10
2. a) Explain different Cache mapping techniques and Cache write techniques.
b) Explain Different Interrupts in detail.
3. a) Explain in detail Standard single-purpose processors peripherals.
i) UART.
ii) Pulse width modulator.
b) Explain in detail Standard single-purpose processors peripherals-Timers, counters, and watchdog timers.
4. a) Write short notes on.
i) memory Access Attribution.
ii) priority Arbiter.
b) Explain wireless protocol IEEE802.11.

5. a) Explain with block diagram architecture of ARM7 core.
b) With block diagram describe the architecture of ARM9 processor.
6. a) What are the advantages and disadvantages of C++, and optimization Of codes in Embedded C++ programs to eliminate the disadvantages.
b) Explain the programme status register in detail for ARM7 processor.
7. a) Which are the elements of algorithm for schedulability of fixed priority for End-to-end periodic task.
b) What is difference between OS and RTOS? Why RTOS is suitable for Embedded ? Explain with suitable example.
8. a) Explain with suitable example interprocess communication (IPC) using mailbox/ queue in RTOS.
b) Write notes on w.r.t RTOS.
 - i) Task management.
 - ii) Race condition.
