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Register Number :

7866

Name of the Candidate :

**DIPLOMA IN EMBEDDED SYSTEMS AND APPLICATION EXAMINATION
DECEMBER 2013.****120 — EMBEDDED CONTROLLERS**

Time : Three hours

Maximum : 100 marks

Answer any FIVE questions. (5 × 20 = 100)**All questions carry equal marks.**

1. Draw and explain the architecture and logic cell configuration of XILINX FPGA. (20)
2. How will you program the FPGA chip for a multiplexer? (20)
3. (a) Draw the memory map of TMS240 chip indicating the program and data memory regions. (15)
(b) What is Watch-dog? How it is implemented in the C240? (5)
4. What are the instructions in C240 which are specifically used for a filter implementation? Explain one of them in all its addressing modes. (20)
5. Write an assembly language program to find the inverse of a matrix. (20)
6. (a) What are the various building blocks present in the Event Manager section of the F240? (10)
(b) Explain how the PWM generation is done on the chip F240. (10)
7. What is the resolution of a 10 bit 5V ADC? Explain how would you interface on ADC chip to the F240. (20)
8. What is serial ADC? Give an example of such a chip. Indicate how to interface it with the F240 chip.
9. Write short notes on :
(a) Times in F240. (10)
(b) Addressing modes of F240. (10)
10. Describe in detail about the I/O ports in TMS 320 F240. (20)