Register Number: ……

M.E DEGREE EXAMINATIONS: APRIL / MAY2010

Second Semester

POWER ELECTRONICS AND DRIVES

PED508: Advanced Microprocessors and Microcontrollers

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions

PART A (10 x 2 = 20 Marks)

1. What do you mean by Instruction pipeline, pipeline interlock?
2. Give two advantages and disadvantages of large CPU register file.
3. Write the package details of 510 and 610 Pentium processor?
4. List the interrupt priorities in Pentium µP?
5. Draw the ARM CPSR format.
6. State the Thumb-ARM characteristic feature differences.
7. Give the features of 68HC11 µC?
8. How pulse accumulator is configured and mention it modes.
9. How the prescale values is set-in timer1control register of PIC 16C74A?
10. State the registers associated with A/D converter of PIC 16C74A.

PART B (5 x 16 = 80 Marks)

11. a) (i) State different instruction set in most modern µP with one example in each.

(ii) What are the advantages and disadvantages of segmentation?

(OR)

b) (i) Explain Instruction level parallelism.

(ii) Compare RISC Vs CISC (minimum in 8 ways).

12. a) (i) Explain the super scalar architecture using U and V instruction pipeline?

(ii) Write how a 32-bit virtual address is translated into a physical address.

(OR)

b) (i) Draw 32-bit task state segment (TSS) structure of Pentium processor?

(ii) State and explain all Pentium instruction types.

13. a) (i) Describe the principal features of the ARM architecture.

(ii) What are the available standard ARM instructions set? Explain SWP.

(OR)

b) (i) Write a basic ARM ALP to copy first word from one table to the other.

(ii) Sketch ARM710T CPU organization.

14. a) (i) Give different addressing modes of 68HC11 with one example in each?

(ii) Explain the I/O ports of 68HC11µC.

(OR)

b) (i) Mention the programmable timer functions? Explain basic timing operation.

(ii) Explain the terms with respect to A/D converter.

(a) Full scale voltage (b) Resolution

(c) Conversion time and (d) Quantization error

15. a) (i) Sketch and mark and pin configuration of PIC 16C74A µC.

(ii) How the program and data memory is organized in PIC 16C74A µC.

(OR)

b) (i) Draw the synchronous Serial Port block diagram in I^2C mode

(ii) Given data: Desired Baud rate = 9600, Fosc = 16 MHz, SPBRG = 25.

Calculate the Actual Baud rate and Error percentage for low speed Baud rate USART.

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