

Code: CS4T5

**II B.Tech - II Semester – Regular/Supplementary Examinations –
April 2017**

**COMPUTER ORGANIZATION
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11 x 2 = 22

1.

- a) Simplify the expression $AB + A(CD + CD^{\prime})$ using Boolean algebra.
- b) Write the characteristic table of SR flipflop.
- c) Define control word.
- d) Differentiate RISC and CISC.
- e) Define basic principle of the two-wire Hand shaking method of data transfer.
- f) Define Programmed I/O mode of transfer.
- g) Define cache memory. Why it is used?
- h) What is page fault? When it occurs?
- i) Write about time shared common bus Organization.
- j) How many switch points are there in a cross bar switch network that connects **P** processors and to **M** memory modules?
- k) What are zero-address instructions?

PART – B

Answer any **THREE** questions. All questions carry equal marks.

$$3 \times 16 = 48 \text{ M}$$

2. a) Simplify the following boolean function using four variables maps $F(A,B,C,D)=\sum(1,3,7,13,14,15)$. 8 M
- b) Write in detail about edge-triggered flip-flops. 8 M
3. a) Write about the addressing modes. Give an example for each. 10 M
- b) Write about Stack organization in detail. 6 M
4. a) What is DMA? Explain DMA transfer in a computer system. 8 M
- b) Write in detail about FIRST-IN FIRST-OUT buffers. 8 M
5. a) Write briefly about auxiliary memory. 7 M
- b) An address space is specified by **24** bits and the corresponding memory space by **16** bits. 9 M
- i) How many words are there in the address space?
- ii) How many words are there in the memory space?
- iii) If a page consist of 4K words, how many pages and blocks are there in the system?

6. a) Explain about mutual exclusion with a semaphore. 8 M
- b) What is Inter Processor Communication and synchronization? Explain. 8 M