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Total Number of Pages: 02

**B.Tech**  
**PCCS4301**

**5<sup>th</sup> Semester Regular / Back Examination 2016-17**

**COMPUTER ORGANIZATION**

**BRANCH(S): CIVIL, EEE**

**Time: 3 Hours**

**Max Marks: 70**

**Q.CODE:Y382**

**Answer Question No.1 which is compulsory and any five from the rest.  
The figures in the right hand margin indicate marks.**

- Q1 Answer the following questions: (2 x 10)**
- a) Which Addressing mode?
  - b) What is WMFC? What is its function?
  - c) What are the functions of register Y & Z in single bus organization?
  - d) What is the function of control store in micro programmed control unit?
  - e) What is thrashing?
  - f) What is rotational latency?
  - g) How to calculate the performance factor of a computer?
  - h) What is cache hit and cache miss?
  - i) Subtract  $0.2513 \times 10^3$  &  $0.02513 \times 10^2$
  - j) What is computer organisation?
- Q2**
- a) What is computer architecture? (2)
  - b) Explain the the Von-Neuman architecture with a suitable diagram? (8)
- Q3**
- a) Explain the BOOTH's algorithm with a flow chart. Show how  $(+13) \times (-12)$  by using BOOTH's algorithm. (5)
  - b) What is the function of I/O processor? Show how data is transferred CPU to a printer. (5)
- Q4**
- a) Show the cache read operation using a flow chart. (5)
  - b) Draw a memory containing 08 number of registers and each register capacity is if 01 byte. (5)
- Q5**
- a) Explain about the basic organization of Hardware Control Unit. How it is advantages over Micro Programmed Control Unit? (5)
  - b) Explain about the risk processor? (5)

**Q6 a)** Consider a 02 word instruction “LOAD to AC” stored at location 2000 and 2001 with address field of 5000. The content PC=2000, CPU register R1=4000 and instruction register IR=1000. Find out the content of AC & (Effective Address) EA. **(7)**

**b)** How to calculate the effective address for relative addressing mode. **(3)**

**Q7 a)** Differentiate between static RAM & dynamic RAM? **(5)**

**b)** What is page replacement? Find out the page fault in FIFO, LRU & optimal page replacement algorithm for the string: 1 2 3 4 1 2 5 1 2 3 4 5 for the page frame size of 3. **(5)**

**Q8 Write short answer on any two: (5 x 2)**

**a)** Cache Memory

**b)** HDD

**c)** De-bouncing circuit of a keyboard.