

**B.TECH. SEM -VI ( COMPUTER) 2014 COURSE (CBCS) :**  
**SUMMER - 2018**

**SUBJECT : COMPUTER ORGANIZATION & ARCHITECTURE**

Day : **Friday**  
Date : **08/06/2018**

**S-2018-2408**

Time : **02.30 PM TO 05.30 PM**  
Max. Marks : 60

**N.B.:**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.

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- Q.1** a) With neat diagram explain in detail functional units of computer system. [05]  
b) Describe the features of RISC and CISC processors. [05]

**OR**

- a) What is the need of Pentium Processor? How it is interface with CPU. [05]
- b) What are advantages of pipelining? Define latency and throughput of pipeline. [05]

- Q.2** a) Draw flow chart for restoring division algorithm. [05]  
b) Represent the following numbers into single precision and double precision formed. [05]  
i) 309.1873                      ii) 178.1875

**OR**

- a) Show the circuit arrangement for binary division and give the steps involved in Restoring Division. [05]
- b) Using Booth's algorithm multiply the following: [05]  
Multiplicand = 7, Multiplier = 3.

- Q.3** a) Draw and explain single bus organization. [05]  
b) Write the control sequence for an ADD R<sub>1</sub> and R<sub>2</sub>. [05]

**OR**

- a) Differentiate between Hardwired and Micro-programmed control. [05]
- b) Explain the steps involved in fetching the word from memory in detail. [05]

- Q.4** a) How is the data transmitted in DMA? Explain use of DMA controller in computer system. [05]  
b) Explain the synchronous bus in an output operation with timing diagram. [05]

**OR**

- a) What is Bus Arbitration? Explain: [05]  
i) Daisy Chaining    ii) Polling methods of arbitration
- b) Explain synchronous and asynchronous bus in an input operation with timing diagram

- Q.5** a) Explain the concept of cache memory? Draw and explain direct mapped cache. [05]  
b) Enlist the difference between SRAMs and DRAMs. [05]

**OR**

- a) What is the use of memory controller? Explain with diagram. [05]
- b) Compare MUMA and UMA multiprocessors. [05]

- Q.6** a) Describe in detail Flynn's classification for multiprocessor system. [05]  
b) Write a short notes on: [05]  
i) Virtual processors                      ii) Interprocess communication

**OR**

- a) Enlist the difference between closely couples and loosely coupled systems. [05]
- b) What is multicore system? Explain in detail. [05]