

**B.Tech Sem – VI (2007 Course) (Computer Engg.) : SUMMER - 2019**

**SUBJECT: ADVANCED COMPUTER ARCHITECTURE**

Day: Wednesday

Date: 22/05/2019

**S-2019-3112**

Time: 02.30 PM TO 05.30 PM

Max Marks: 80

**N.B.:**

- 1) **Q. No. 1 and Q.No.5 are COMPULSORY.** Out of the remaining attempt **ANY TWO** questions from each section.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answer to both the sections should be written in **SAME** Answer book.
- 4) Use of non-programmable **CALCULATOR** is allowed.
- 5) Draw neat and labeled diagrams **WHEREVER** necessary.
- 6) Assume suitable data if necessary.

**SECTION-I**

- Q.1** a) Explain flynn's classification in detail. (05)  
b) Write different issues towards cluster computing. (05)  
c) Draw and explain pipelined instruction processing. (04)
- Q.2** a) Explain in detail evolution of parallel processor. (07)  
b) Discuss various techniques used to balance the subsystem bandwidth of uniprocessor system. (06)
- Q.3** a) Explain memory contention and arbitration techniques. (07)  
b) What is cache coherence problem? Explain in detail. (06)
- Q.4** a) Explain the various pipeline hazards and how are they resolved. (07)  
b) Write short notes on Very long instruction Word Processor (VLIW). (06)

**SECTION-II**

- Q.5** a) Compare power PC 604 with ultra SPARC (05)  
b) Discuss need for interconnection network in multiprocessor system. (05)  
c) Write short note semaphore for multiprocessing. (04)
- Q.6** a) What are the different architecture configurations of SIMD array processors? (07)  
b) Explain in detail classification of parallel processor. (06)
- Q.7** a) Write difference between loosely coupled and tightly coupled multiprocessor. (07)  
b) Explain in detail time shared bus and pc bus. (06)
- Q.8** Write short notes (13)  
i) Parallel algorithm for multiprocessor  
ii) Code optimization and vectorization.

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