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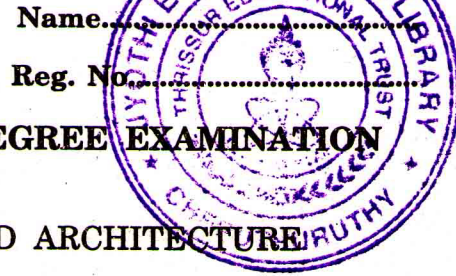
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FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION DECEMBER 2011

AI/BM 04 504—COMPUTER ORGANIZATION AND ARCHITECTURE

(2004 admissions)

Time : Three Hours   Maximum : 100 Marks

I. (a) With neat sketch, explain the structure of a computer.

   (b) Write short notes on Stacks and Queues.

   (c) Explain the Floating-point normalization in IEEE single precision format.

   (d) Briefly explain the virtual memory organization.

   (e) Explain the basic idea of Instruction pipelining.

   (f) Explain the principle of operation of a CD-ROM system.

   (g) What are the three architectural classification schemes for multi processors.

   (h) What are the applications of parallel processing ?

$(8 \times 5 = 40 \text{ marks})$

II. (a) Explain in detail about the various addressing methods with suitable examples.

Or

   (b) (i) Explain in detail about the execution of a complete instruction.

      (ii) Write short notes on Hardwired control and Microprogrammed control.

III. (a) Explain in detail about the Small Computer System Interface (SCSI) controller and its signals.

Or

   (b) With suitable examples, explain the addition and subtraction of signed numbers in the Arithmetic unit.

IV. (a) Explain in detail about :

      (i) Input devices.

      (ii) Output devices.

Or

   (b) (i) Explain the various hazards that cause performance degradation in pipelined processors.

      (ii) Discuss the means for mitigating the effects of hazards.

V. (a) Explain in detail about :

      (i) Pipeline computers.

      (ii) Array processors.

      (iii) Multiprocessor systems.

Or

   (b) Explain in detail about the Flynn's four Machine organizations.

$(4 \times 15 = 60 \text{ marks})$