

D 51544

Name.....
Reg. No.....



**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, DECEMBER 2008**

EC 2K 505/PTEC 2K 504 – COMPUTER ORGANISATION AND ARCHITECTURE

Time : Three Hours

Maximum : 100 Marks

- I. (a) Explain the design of a computer system.
(b) Write short notes on : (i) RTL schematic ; (ii) Logic circuit level structure.
(c) Briefly explain the memory subsystems.
(d) Write a brief note on Memory array organisation.
(e) How the datas are stored in a disk drive?
(f) What is the average time to read or write a 512-byte sector for a typical disk rotating at 5400 r.p.m. ? The advertised average seek time is 12 ms, the transfer rate is 5 MB/sec, and the controller overhead is 2 ms. Assume that the disk is idle so that there is no waiting time.
(g) What is parallelism and pipelining?
(h) Compare and contrast the features of SIMD and MIMD systems.
- (8 × 5 = 40 marks)
- II. (a) With neat sketch explain the functionality of an ALU.
Or
(b) Explain in detail about the different types of computer systems and their Interfaces.
- III. (a) With an example, compare and contrast the features of Hardwired and Microprorammed control.
Or
(b) Explain in detail about (i) Associative Memory ; (ii) Virtual Memory.
- IV. (a) Explain the data storage mechanism in an optical disk.
Or
(b) Give the classification of the data transfer schemes and justify them with suitable examples.
- V. (a) Explain the following bus Architectures : (i) PCA ; (ii) MCA.
Or
(b) Explain in detail about the crossbar and Multiple Interconnection networks.
- (4 × 15 = 60 marks)