

II B.Tech(ccc) Regular Examinations, December 2007
COMPUTER ORGANISATION AND OPERATING SYSTEMS
(Electronics & Communication Engineering)

Time: 3 hours

Max Marks:100

Answer any FIVE Questions
All Questions carry equal marks

1. Explain with a block diagram the general structure of a CPU along with registers and ALU. Also, explain what is a control word and relate it with the functioning of the CPU. [20]
2. (a) Support or oppose the statement "If we want to add a new machine language instruction to a processors instruction set, simply write a C program and compile and store the resultant code in control memory".
(b) Why do we need subroutine register in a control unit?. Explain. [10+10]
3. (a) What is Flynn's classification? Categorize [8]
(b) Explain each stream of the Flynn's classification with an example. [12]
4. Explain the following Cache Mapping Techniques
(a) Direct Mapping
(b) Set Associative Mapping [10+10]
5. (a) Distinguish between the following terminology: [4×4]
 - i. Uniprogramming and multiprogramming
 - ii. Uniprocessing and multiprocessing
 - iii. Unitasking and multitasking
(b) Distinguish between batch-processing and time-sharing operating systems. [4]
6. (a) State the criteria for evaluating CPU scheduling algorithms. Also state whether the criteria is to be optimized for minimal or maximal value.
(b) What is meant by 'convoy effect' in the context of FCFS scheduling algorithm. [12+8]
7. (a) Explain the concept of deadlocks avoidance. [8]
(b) Elaborate the deadlock recovery methods. [12]
8. (a) Write about monitor (CSP solution) concept. [8]
(b) Write the solution to dining-philosophers problem using monitors concept. [12]
