

IV B.Tech I Semester Supplementary Examinations, November 2005
ADVANCED COMPUTER ARCHITECTURE
 (Common to Computer Science & Engineering, Information Technology
 and Electronics & Computer Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain the requirement of large scale computations in substantiate the use of Numerical weather forecasting and large scale computation in Socio economics and Government use.
- (b) Explain the significance and necessity of Super computers in Engineering Design and Automation. [8+8]
2. For the following reservation table of a pipeline processor, give the forbidden list of avoided latencies F, the lower bound on the latency, the collision vector, the state diagram, the minimum average latency and all the greedy cycles.

	T_0	t_1	t_2	t_3	t_4	t_5	t_6	t_7	t_8
S_1	X								X
S_2		X	X					X	
S_3				X					
S_4				X	X				
S_5						X	X		

[8+8]

3. (a) Explain the various configurations of an SIMD array Processors
- (b) List down the similarities and differences between them [10+6]
4. (a) Explain the implementation of SIMD fast Fourier Transform.
- (b) Explain on the connection issues in while using SIMD inter connection networks. [8+8]
5. (a) Describe the desirable architectural features for a processor to be effective in a multiprocessing system.
- (b) Explain the architecture of Honeywell 60/66 multiprocessor system. [8+8]
6. (a) Define the term nonpreemptive scheduling. With an example illustrate the Hu's optimal algorithm
- (b) Explain briefly a simple queueing model for multiprocessor scheduling. [10+6]
7. (a) Explain the organization of a ring structured data flow computer.
- (b) Construct and explain the data flow graph for the function $z = x^n$ [8+8]
8. (a) Explain about the performance evaluation of queueing models of a computer systems.

(b) Explain about stochastic convergence of simulation models.

[8+8]
