B.E. (Computer Science & Engineering) Seventh Semester (C.B.S.)
Elective - I : Advanced Computer Architecture

P. Pages : 2

Time : Three Hours

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0259

NRT/KS/19/3574

Max. Marks : 80

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Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Draw and explain basic computer design architecture. **7**

   b) How the computers performance is measured. Explain in detail. **6**

OR

2. a) What are the trends in power in integrated circuits? **7**

   b) Explain the role of compiler in computer performance. **6**

3. a) What is ILP? How it is achieved. **7**

   b) Explain basic compiler techniques for exposing ILP. **7**

OR

4. a) What is speculation? Differentiate between hardware and software speculation. **6**

   b) What are the various types of data dependency? **4**

   c) Discuss various data hazards in ILP. **4**

5. a) Explain SIMD instruction set with example. **5**

   b) Explain three shared memory multi processor model in brief. **8**

OR

6. a) What is loop level parallelism? How it can be detected. **7**

   b) What is coherence? Explain directory based coherence. **6**

7.	a)	What is virtual memory and explain how address translation is done.	7
	b)	Explain memory hierarchy & design functionality of cache.	6

OR

8.	a)	Differentiate between following. i) DRAM & SRAM ii) Cache & Virtual memory	6
	b)	Explain any two miss rate reduction techniques in brief.	7
9.	a)	Explain switching mechanism in message passing.	6
	b)	Draw and explain message passing architecture.	8

OR

10.	a)	What is process granularity? Brief about three types of granularity.	8
	b)	Explain in brief: i) Bus arbitration ii) Classification of Bus	6
11.	a)	What do you mean by aerial density? How can you compute disk power?	7
	b)	Write a note on RAID model.	6

OR

12.	a)	What are the benchmarks in designing and evaluating an I/O system.	7
	b)	What are the advancements in disk storage.	6

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