B.E. Seventh Semester (Computer Science & Engineering) (C.B.S.)

Elective - I : Advanced Computer Architecture

P. Pages : 2 **NKT/KS/17/7490**

Time : Three Hours * 0 1 1 6 * Max. Marks : 80

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. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Explain the roll of compiler in computer performance. **7**

b) What are the responsibilities and tasks of computer designer? **6**

OR

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

b) Draw and explain basic computer design architecture. **6**

3. a) What is instruction level parallelism? How it is achieved? **7**

b) Explain different type of dependencies in brief. **7**

OR

4. a) Explain in brief exploiting ILP using static & dynamic scheduling. **9**

b) Differentiate between implicit and explicit parallelism. **5**

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

b) What is coherence? Explain directory based coherence. **7**

OR

6. a) Explain three shared memory multiprocessor model in brief. **9**

b) Explain SIMD instruction set in short. **5**

7. a) How virtual address mapped to physical address? What is paging? **6**

b) Define. **7**

i) cache hit
ii) cache miss
iii) hit rate
iv) miss rate
v) miss penalty

OR

8. a) Explain in brief. **9**

i) Direct mapping cache
ii) Fully Associative cache
iii) Set Associative cache

b) What is virtual memory? What is its need? **4**

9. a) Draw and explain message passing architecture. **8**

b) Explain in brief. **5**

i) Classification of Bus
ii) Bus arbitration

OR

10. a) Explain switching mechanism in message passing. **7**

b) Write a note on routing for broadcasting and multicasting. **6**

11. a) What are the benchmarks in designing and evaluating an i/o system. **7**

b) What are the various type of faults? **6**

OR

12 a) What are the Advancements in disk storage. **7**

b) Write a note on I/O performance. **6**

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