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P. Pages : 2

Time : Three Hours

**NRJ/KW/17/4629**

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. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) What are the various trends in power and energy? 9
b) Explain the basic computer design block diagram. 4

OR

2. a) What are the trends in technology. 8
b) Explain the responsibilities and tasks of computer designer. 5
3. a) What is instruction level parallelism? Explain various techniques to implement ILP (Instruction level parallelism). 13

OR

4. a) Explain control dependence with example & Define dependence graph, data dependence & source dependence. 8
b) Give the various limitations of ILP. 5
5. a) Describe Graphics processing unit (GPU). 7
b) Explain centralized shared memory architecture. 6

OR

6. a) Explain SIMD instruction set with example. 6
b) Discuss vector Architecture in detail. 7
7. a) Discuss the different mapping techniques. 8

b) Define.

5

1) Cache hit

2) Miss hit

3) Hit rate

4) Miss rate

5) Miss penalty.

OR

8. What are the advanced cache optimization techniques.

13

9. a) What is process Granularity? Brief about three types of granularity.

7

b) Write a short note on Routing for Broadcasting & Multicasting.

7

OR

10. a) Discuss the switching mechanisms in message passing.

8

b) What are the various potential problems occur in Routing.

6

11. a) What do you mean by Areal density? & How can you compute disk power?

8

b) What are the various types of faults.

6

OR

12. a) Explain the standard five RAID levels.

8

b) Explain real faults & failures with example.

6



~ Chinese Proverb

