G 491

Reg. No............................

Name............................

B.TECH. DEGREE EXAMINATION, MAY 2014

Sixth Semester

Branch : Electrical and Electronics Engineering

COMPUTER ORGANIZATION (E)

(Old Scheme—Supplementary/Mercy Chance)

[Prior to 2010 admissions]

Time : Three Hours
Maximum : 100 Marks

Part A

Answer all questions briefly.
Each question carries 4 marks.

1. If a computer A runs a program in 8 seconds and another computer B runs the same program in 13 seconds, how much faster is A than B ? Justify your answer.

2. What is microinstruction ? Explain the format of microinstruction.

3. Explain the construction of 1 bit ALU.

4. How the carry look ahead adder is better than ripple carry adder ? Explain.

5. What is the role of Cache memory in improving system performance ? Explain.

6. Explain the principle of operation of a flash memory.

7. What is a virtual memory ? Explain.

8. What is Cache miss ? State two techniques to reduce cache miss penalty.

9. Explain the function of $C/\overline{BE}$ signals on the PCI bus.

10. What are the parallel port status signals returned by BIOS printer service routines ?

(10 × 4 = 40 marks)

Part B

Answer all questions.
Each full question carries 12 marks.

11. Explain clearly, the various steps involved in the execution of a complete instruction.

Or

12. Explain the different bus structures and their organisations and important features.

13. How a floating point division can be carried out in a computer ? Draw a block diagram and explain with the help of an example.

Or

Turn over

14. Clearly explain, with suitable examples, the various techniques used by high performance processors to reduce the time needed for multiplication.

15. Explain the architecture of a E^2PROM. Describe how a data is read, stored and erased and again programmed.

Or

16. What is FPLA ? Explain its principle with a neat functional diagram. Discuss its applications.

17. With the help of neat diagrams, explain associative memory organization.

Or

18. (a) Explain memory hierarchy associated with a computer system. Discuss speed versus size of different memory types.

(6 marks)

(b) Explain different Cache mapping techniques.   (6 marks)

19. Describe an SCSI transaction. List and explain different phase used by an SCSI transaction.

Or

20. Describe the GPIB IEEE 488 Instrumentation bus standard and its applications.

(5 × 12 = 60 marks)