Faculty of Engineering & Technology

P.G.D.C.S./M.C.A. (First Semester) (First Year)

Examination

COMPUTER ORGANIZATION

Paper—1MCA1/1CS1

Sections—A & B

Time—Three Hours] [Maximum Marks—80

INSTRUCTIONS TO CANDIDATES

(1) Due credit will be given to neatness and adequate dimensions.

(2) Illustrate your answers wherever necessary with the help of neat sketches.

SECTION—A

1. (A) Explain :— 9

(i) Uniprogramming

(ii) Multiprogramming

(iii) Multiprocessing.

(B) State and explain evolution of computers and computer generations. 4

OR

2. (A) Explain what are measuring performance in detail. 7

(B) Explain the function of operating sys tems. 6

3. (A) Explain the expressible numbers in typical 32-bit format with density off flo ating point numbers. 7

(B) How positive integers are represen ted in binary form ? 7

OR

4. (A) Explain :— 9

(i) ALU

(ii) Bit Slice Processors

(iii) Radix Point.

(B) Explain the operations of fixed point arithmetic on negative integers (signed). 5

5. (A) What are the addressing techniques ? Explain in detail. 7

(B) Explain instruction format with different types of format. 6

OR

6. (A) Explain fetch and decoding unit. 6

(B) Describe :— 2+2+3=7

(i) Processor organisation

(ii) Register organisation

(iii) Stack based organisation.

SECTION—B

7. (A) Discuss CISC *V/s* RISC characteristics. 6

(B) Explain instruction set design influence on pipelining. 7

OR

8. (A) Describe :

(i) Vector processors

(ii) Multithreaded processors. 6

(B) What are advantages of instruction pipeline ? Explain its hazards. 7

9. (A) Explain and differentiate between RAM and ROM. 6

(B) State and explain basic characteristics of semi-conductor memory. 7

OR

10. (A) What are the features of describing a cache and cache implementations ? 6

(B) Explain secondary storage memory with example of optical disks CD-ROM. 7

11. (A) What is meant by Bus ? Explain Bus arbitration methods. 7

(B) Describe exactly how, in general a virtual address generated by the CPU is translated into a physical main memory address. 7

OR

12. (A) Explain three basic principles of I/O modules. 6

(B) Explain I/O interfaces in detail. 5

(C) What is meant by cycle stealing in DMA ? 3