

AR—2500

Faculty of Engineering & Technology

M.C.A./P.G.D.C.S. (First Year) Semester—I (CGS) Examination

COMPUTER ORGANISATION

(15501)

Paper—1 MCA 1

Time : Three Hours]

[Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

- (1) All questions carry marks as indicated.
 - (2) Assume suitable data wherever necessary.
 - (3) Illustrate your answers wherever necessary with the help of neat sketches.
1. (a) List and explain important features of 4th generation computer. 7
 - (b) Explain the following features of advance operating system :
 - (i) Multiprogramming
 - (ii) Protection
 - (iii) Virtual Memory. 6
- OR**
2. (a) State and explain AMDAHL's Law. 6
 - (b) Explain Computer Organization with the help of function block diagram. 7
3. (a) Explain steps to perform addition on BCD numbers with example. 6
 - (b) Explain Bit Slice processor performing ALU operation. 7
- OR**
4. (a) Explain with example, 2's compliment of number is -ve representation of given number. 6
 - (b) Explain packed and unpacked format of BCD numbers. 7

5. (a) Explain different instruction formats used in Computer System. 7
(b) Draw and explain the functional block diagram of a complete processor of Advance Computer System. 6

OR

6. (a) Explain all addressing modes of data processing instruction. 7
(b) Explain recent innovations in execution unit design with reference to :
(i) Xeon HT
(ii) VME™. 6
7. (a) Explain pipelining in super scalar processor. 7
(b) Explain Very Long Instruction Word (VLIW) processor with their advantages and disadvantages. 7

OR

8. (a) Explain ARM processor pipelining. 7
(b) Explain thread level parallelism in multithreaded processor. 7
9. (a) Explain different levels in the memory hierarchy in Computer System. 7
(b) Explain construction and working of Optical Disk or CDROM Memory. 6

OR

10. (a) Explain internal organization of semiconductor main memory chip. 7
(b) Explain function of different levels in multilevel cache. 6
11. (a) Explain segmentation and address translation process in segmentation. 7
(b) Explain bus arbitration process for sharing bus services for different controller. 7

OR

12. (a) Explain demand paging and swapping in virtual memory system. 7
(b) Explain memory mapped I/O and I/O mapped I/O device organization. 7