

COMPUTER SCIENCE

Paper A-04 : Computer Organization and Architecture

Time Allowed : 3 Hours

Maximum Marks : 65

Note : Attempt *one* question each from Section A, B, C and D and compulsory question in Section E.

SECTION – A

1. (a) Define Number system. Explain Binary, Decimal and Hexadecimal systems. 7
- (b) Explain parity bit method for errors in detail. 6
2. (a) Convert :
 - (i) $(24.73)_{10} = (\dots)_{20} = (\dots)_{16}$ 3
 - (ii) $(111.011)_2 = (\dots)_{10} = (\dots)_{16}$ 3
- (b) Explain Hamming code in detail. 7

SECTION – B

3. (a) Draw difference between half adder and full adder. 6
- (b) What is Microinstruction ? Explain any *two* logical and shift microinstructions with example. 1+6
4. (a) Explain, what is counter ? Also draw difference between synchronous and asynchronous counters. 1+6
- (b) Define Interrupt. Explain its various types. 2+4

SECTION – C

5. (a) Explain the architecture of 8088 microprocessor in detail. 7
- (b) What is Assembly Language ? Explain its features in detail. 6
6. (a) Explain any *three* addressing modes in detail. 6
- (b) Write Assembly program for addition and subtraction. 7

SECTION – D

7. (a) Explain various physical components of a computer. 7
- (b) How viruses are detected and prevented ? Explain. 6
8. (a) Explain various types of displays in detail. 7
- (b) Give functional description of any *two* internal and *two* external cards for a computer. 6

SECTION – E (Compulsory)

9. Explain :
 - (a) Bus 2
 - (b) Character codes 2
 - (c) Boolean Algebra 2
 - (d) Multiplexers 2
 - (e) Registers of microprocessor 2
 - (f) Installing software 3