

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2022
(Second Semester)

Branch – SOFTWARE SYSTEMS (Five year Integrated)

COMPUTER ORGANIZATION

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. The binary number equivalent to decimal number 1231_{10} is
(i) 10011001111 (ii) 11011001111
(iii) 10011001101 (iv) 10011101111
2. Identify the type of instruction ADD R1, A, B
(i) Zero Address Instruction (ii) One Address Instruction
(iii) Two Address Instruction (iv) Three Address Instruction
3. Choose the memory that is accessed on the basis of data content
(i) Associative Memory (ii) Read Only Memory
(iii) Cache Memory (iv) Magnetic Tape
4. DMA transfers data between
(i) Memory and processor (ii) Processor and I/O devices.
(iii) I/O devices and memory (iv) I/O devices and Cache
5. A Multiprocessor system with common shared memory is classified as
(i) Loosely coupled (ii) Tightly coupled
(iii) Distributed Memory (iv) Hybrid coupled

SECTION.- B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Convert the following decimal numbers into the bases indicated
(i) 78654 to Octal (ii) 2468 to Hexadecimal (iii) 5897 to binary
OR
b Discuss 2's complement Addition and Subtraction with Example.
- 7 a Illustrate Stack Organization.
OR
b Discuss CISC Characteristics.
- 8 a Explain Memory hierarchy of computer system.
OR
b Illustrate RAM and ROM Chips.
- 9 a Show and explain connection of I/O bus to input output devices.
OR
b Differentiate Isolated with Memory-Mapped I/O.
- 10 a Discuss the characteristics of multiprocessors.
OR
b Differentiate loosely coupled system with tightly coupled system.

Cont...

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Explain Instruction Cycle.

OR

b Explain Input-Output and Interrupts in detail.

12 a With a neat sketch explain arithmetic micro operations.

OR

b Elucidate Data Transfer and Manipulation instructions in detail.

13 a Explain Hardware Organization of Associative Memory with block diagram.

OR

b Discuss different types of mapping procedures of cache memory.

14 a Compare I/O versus Memory Bus and explain I/O interface unit.

OR

b Elucidate DMA with appropriate block diagrams.

15 a Justify how Time-Shared Common Bus increases the system cost and complexity also provide the alternate solution.

OR

b Differentiate between Multiport Memory and Crossbar Switch. With a neat sketch illustrate 4X4 Crossbar switch with appropriate block diagram.

Z-Z-Z

END