

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCA DEGREE EXAMINATION DECEMBER 2023
(First Semester)

Branch – COMPUTER APPLICATIONS

COMPUTER ORGANISATION AND ARCHITECTURE

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

| Module No. | Question No. | Question | K Level | CO |
|------------|--------------|---|---------|-----|
| 1 | 1 | The data is transferred over the RAMBUS as _____. a) Blocks b) Swing voltages c) Bits d) Packets | K1 | CO1 |
| | 2 | The _____ format is usually used to store data. a) BCD b) Decimal c) Hexadecimal d) Octal | K2 | CO1 |
| 2 | 3 | Which of the following computer bus connects the CPU to a memory on the system board? a) Expansion bus b) Width bus c) System bus d) Address bus | K1 | CO2 |
| | 4 | What is the content of stack pointer? a) Address of the top element in the stack b) Address of current instruction c) Address of next instruction d) Address of the down element in the stack | K2 | CO2 |
| 3 | 5 | _____ bus structure is usually used to connect I/O devices. a) Single b) Multiple c) Star bus d) Ram | K1 | CO1 |
| | 6 | In a three bus architecture, how many input and output ports are there? a) 2 output and 2 input b) 1 output and 2 input c) 2 output and 1 input d) 1 output and 1 input | K2 | CO1 |
| 4 | 7 | To reduce the memory access time we generally make use of _____. a) Heaps b) Higher capacity RAM's c) SDRAM's d) Cache's | K1 | CO4 |
| | 8 | Cache Memory acts between _____. a) CPU and RAM b) RAM and ROM c) CPU and Hard disk d) CPU and ROM | K2 | CO4 |
| 5 | 9 | The memory unit that communicates directly with the CPU is called the _____ memory. a) Main b) Secondary c) Shared d) Auxiliary | K1 | CO4 |
| | 10 | Systems that do not have parallel processing capabilities are _____. a) SISD b) SIMD c) MIMD d) MISD | K2 | CO5 |

Cont...

SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

| Module No. | Question No. | Question | K Level | CO |
|------------|--------------|---|---------|-----|
| 1 | 11.a. | Explain about registers. | K2 | CO1 |
| | (OR) | | | |
| | 11.b. | Explain the performance of addition and subtraction with signed magnitude data. | | |
| 2 | 12.a. | Discuss about memory operations. | K3 | CO2 |
| | (OR) | | | |
| | 12.b. | Give an overview on assembly language. | | |
| 3 | 13.a. | How to access I/O devices? | K3 | CO3 |
| | (OR) | | | |
| | 13.b. | Explain fundamental concepts on basic processing unit. | | |
| 4 | 14.a. | Discuss different types of memory. | K4 | CO4 |
| | (OR) | | | |
| | 14.b. | What is the size of virtual memory? Explain VM with example. | | |
| 5 | 15.a. | Compare multiprocessing and parallel processing. | K4 | CO5 |
| | (OR) | | | |
| | 15.b. | Compare GPU and CPU. | | |

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

| Module No. | Question No. | Question | K Level | CO |
|------------|--------------|---|---------|-----|
| 1 | 16 | Elaborate basic functional units with neat sketch. | K4 | CO1 |
| 2 | 17 | Narrate Instruction formats with example. | K4 | CO2 |
| 3 | 18 | Explain interface circuit with suitable diagram. | K4 | CO3 |
| 4 | 19 | What is cache memory? Analyze how cache memory is measured. | K4 | CO4 |
| 5 | 20 | Discuss multi-core organization with example. | K4 | CO5 |

Z-Z-Z

END