Roll No. ……..

BCA–C-205

Bachelor of Computer Applications
(Second Semester)
EXAMINATION, 2022-23

FUNDAMENTALS OF COMPUTER ORGANIZATION

Time : $2\frac{1}{2}$ *Hours*

Maximum Marks : 60

Note : All questions have to be attempted.

Section—A

1. Multiple choice questions : 1 each

(a) Convert the binary 10101 to its decimal :

(CO1, BL-3)

(i) 21

(ii) 12

(iii) 22

(iv) 31

(b) Secondary memory is ..... type of memory.

(CO4, BL-1)

(i) Associative Memory

(ii) Virtual Memory

(iii) Auxiliary Memory

(iv) Read Only Memory

(c) What does ASCII stand for ? (CO1, BL-6)

(i) American Standard Code for Information Interchange

(ii) American Scientific Code for Information Interchange

(iii) American Scientific Code for Interchanging Information

(iv) American Standard Code for Interchanging Information.

(d) Which of the following is the full form of CISC ? (CO5, BL-1)

(i) Complex Instruction Sequential Compilation

(ii) Complete Instruction Sequential Compilation

(iii) Computer Integrated Sequential Compiler

(iv) Complex Instruction Set Computer

(e) Which of the following are the universal gates ? (CO2, BL-2)

(i) OR, NOR

(ii) NAND, NOR

(iii) AND, NOT

(iv) NOR, XOR

(f) ..... are different types of generating control signal. (CO3, BL-1)

(i) Hardwired

(ii) Micro-instructions

(iii) Micro-programmed

(iv) Both Micro-programmed and Hardwired

(g) What is the output of A+A and A.A ? (CO2, BL-2)

(i) 0 and 0

(ii) A and A

(iii) 1 and 1

(iv) None of the above

(h) Which method offers higher speeds of I/O transfer ? (CO5, BL-2)

(i) Interrupts

(ii) Memory Mapping

(iii) Program-controlled I/O

(iv) DMA

(i) In zero-address instruction method operands are stored in : (CO5, BL-2)

(i) Registers

(ii) Accumulators

(iii) Push down stack

(iv) Cache

(j) The fastest data access is provided using .....

(CO3, BL-2)

(i) Caches

(ii) DRAMs

(iii) SRAMs

(iv) Registers

(k) The decoded instruction is stored in .....

(CO3, BL-3)

(i) IR

(ii) PC

(iii) Registers

(iv) MDR

(l) The DMA differs from the interrups made by :

(CO5, BL-4)

(i) The involvement of the processor for the operation

(ii) The method of accessing the I/O devices

(iii) The amount of data transfer possible

(iv) None of the mentioned

2. Attempt any *four* of the following : 3 each

(a) Compare the concept of Multiplexer and De-multiplexer. (CO2, BL-4)

(b) Solve $(E56)_{16} = (?)_8$ and $(110.11)_2 = (?)_{10}$.

(CO1, BL-6)

(c) Explain instruction cycle with diagram.

(CO3, BL-2)

(d) Compare the differences between RISC and CISC. (CO5, BL-4)

(e) What is memory hierarchy ? Inspect with diagram. (CO4, BL-4)

Section—B

3. Attempt any *two* questions : 6 each

(a) Discuss the differences between Static and Dynamic RAM. (CO4, BL-6)

(b) Examine the different types of addressing modes.

(CO3, BL-4)

(c) Evaluate the Boolean function in POS form and draw logic diagram : (CO2, BL-5)

$F(A, B, C, D) = \Sigma\ (0, 1, 2, 3, 7, 8, 10) + \Sigma d$

(5, 6, 11, 15)

4. Attempt any *two* questions : 6 each

(a) Explain all logic gates with truth table and diagram. Also realise AND, OR, NOT gates using only NAND gates. (CO1, BL-4)

(b) Discuss strobe and handshaking method of data transfer. (CO5, BL-6)

(c) What do you understand by instruction format ? Demonstrate its types with example. (CO3, BL-3)

5. Attempt any *two* question : 6 each

(a) Write short notes on any *three* of the following : (CO5, BL-2)

(i) Direct Memory Address

(ii) Priority Interrupt

(iii) Programme I/O

(iv) I/O Interface

(v) RISC

(b) What do you understand by auxiliary memory ? Give examples. (CO4, BL-2)

(c) What do you mean by Hit/Miss ratio ? Why is it used and how ? (CO4, BL-1)