

BCA/CMO:304 (O)



2025

(3rd Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper : CMO : 304 (Old Course)

(Computer Organization)

Full Marks : 70

Pass Marks : 45%

Time : 3 hours

(PART : B—DESCRIPTIVE)

(Marks : 45)

*The figures in the margin indicate full marks
for the questions*

1. (a) With the help of flow chart, explain instruction cycle. 9
- Or
- (b) What are register reference instruction and input/output instruction? 4
- (c) Explain the timing and control signal generation with a neat diagram. 5

2. (a) Explain RISC pipeline. 5
- (b) Write notes on the following : 4
- (i) Vector processing
- (ii) Array processors
- Or
- (c) Explain arithmetic pipeline. 4
- (d) Explain with a neat block diagram, memory stack. 5
3. (a) List out the different steps to perform division algorithm. 4
- (b) What is Booth's algorithm? Explain the different steps with the help of flow chart. 5
- Or
- (c) Divide 8 by 4 using division algorithm. 4
- (d) Apply Booth's algorithm to multiply decimal 5 by decimal -2. 5
4. (a) What is DMA? Why is it important? Explain the data transfer using DMA with a neat block diagram. 9
- Or
- (b) What is handshaking method? Why is it important? 5

- (c) Explain asynchronous data transfer. 4
5. (a) Draw the hierarchy of memory organization and explain. 5
- (b) What is cache memory? Why is it important? 4
- Or*
- (c) Write short notes on the following : 5
- (i) RAM
 - (ii) ROM
 - (iii) PROM
 - (iv) EPROM
 - (v) EEPROM
- (d) Explain virtual memory concept. 4

2 0 2 5

(3rd Semester)

BACHELOR OF COMPUTER APPLICATIONS

Paper : CMO : 304 (Old Course)

(Computer Organization)

(PART : A—OBJECTIVE)

(Marks : 25)

The figures in the margin indicate full marks for the questions

- 1. Put a Tick (✓) mark against the correct answer in the brackets provided : 1×10=10**

(a) How many decoders are used in control unit of a basic computer?

(i) 1 ()

(ii) 2 ()

(iii) 3 ()

(iv) 4 ()

(b) Which instruction is used to skip next instruction if AC is positive?

(i) SPA ()

(ii) SPE ()

(iii) SPP ()

(iv) SPC ()

(c) A _____ is responsible for controlling the entire working of the ALU.

(i) memory ()

(ii) control unit ()

(iii) input unit ()

(iv) output unit ()

(d) Which instruction is used to input character to AC?

(i) INP ()

(ii) OUT ()

(iii) CLA ()

(iv) None of the above ()

(e) If the opcode value is 111 and I bit is 1, it represents

- (i) input and output instruction ()
- (ii) memory reference instruction ()
- (iii) register reference instruction ()
- (iv) None of the above ()

(f) Add 1111 with 0011.

- (i) 1001 ()
- (ii) 1100 ()
- (iii) 1110 ()
- (iv) 0010 ()

(g) _____ holds the address of next instruction.

- (i) temporary register ()
- (ii) ALU ()
- (iii) program counter ()
- (iv) All of the above ()

(h) A 3-bit operation code is used for specifying the operation like

- (i) addition ()
- (ii) subtraction ()
- (iii) multiplication ()
- (iv) All of the above ()

(i) _____ is done to move bits contained in an electronic register.

- (i) Jump operation ()
- (ii) Shift operation ()
- (iii) Flip operation ()
- (iv) None of the above ()

(j) Subtract binary number 1110 from 1001.

- (i) 1011 ()
- (ii) 0111 ()
- (iii) 0011 ()
- (iv) 0001 ()

2. State whether the following statements are True (T) or False (F) by putting a Tick (✓) mark : 1×5=5

(a) CU does not transfer data between memory and input/output devices.

(T / F)

(b) CMA : Complement Accumulator Content

(T / F)

(c) SUB A : A—the content of AC

(T / F)

(d) The address of operants is also known as the effective address.

(T / F)

(e) SKO : Skip if output flag is on

(T / F)

3. Answer the following questions in short : 2×5=10

(a) What is memory reference instruction?

(b) Define cycle stealing. (c) What is interrupt?

(c) What is interrupt? (10)

(d) What is instruction cycle?

(e) What is addressing mode?
