



BRAINWARE UNIVERSITY

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Term End Examination 2023

Programme - B.Tech.(ECE)-2019/B.Tech.(ECE)-2020

Course Name – Computer Architecture
Course Code - PCC-EC502

(Semester V)

Full Marks: 60

Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

- Choose the correct alternative from the following :
- (i) Tell Zero address instruction format is used for
 - a) RISC architecture

- b) CISC architecture
- c) Von-Neumann architecture
- d) Stack organized architecture
- (ii) Select that CALL 2030H is an example of
 - a) Arithmetic instruction

b) Logical instruction

c) Branching instruction

- d) Machine Control instruction
- (iii) Identify PUSH and POP is associated with
 - a) Stack

b) Queue

c) Linked list

- d) Array
- (iv) Select which of the following is not a mandatory requirement of a digital computer
 - a) ALU

b) Main Memory

c) Cache Memory

- d) CU
- (v) Select in which category Operating System falls
 - a) System software

b) Application software

c) Compiler

- d) None of these
- (vi) Apply signed-magnitude binary division and find the result if the dividend is (11100)2 and divisor is (10011)2
 - a) 10100

b) 100

c) 11001

- d) 1100
- (vii) Choose which one is faster than its counterpart
 - a) Carry Propagate Adder

b) Carry Save Adder

c) Carry Look Ahead Adder

- d) Both (Carry Propagate Adder) and (Carry Save Adder)
- (viii) Select what an address of main memory is called
 - a) Logical address

b) Physical Address

c) Virtual Address

- d) None of these
- (ix) Calculate if a multiplexer has 16 input lines, then how many select lines it will have?

a) 2	b) 4	
c) 6	d) 8	
 (x) Categorize the techniques that automate physical main memory when they are re 		o the
a) Paging	b) Swapping	
c) Virtual Memory	d) Cache Memory	
(xi) Select the memories that consist of circle power is applied are known as	uits capable of retaining their state as lor	ng as
a) Static memory	b) Power memory	
(c), Dynamic Memory d) Circuit Memory		
(xii) If a system is 64-bit machine, then the le	ength of each word will be	
a) 4 bytės	b) 8 bytes	
c) 16 bytes d) 12 bytes		
(xiii) Write Dynamic RAM is used as main me	mory in a computer system as it	
a) Consumes less power	b) has higher speed	
c) has lower cell density d) needs refreshing circuitry		
(xiv) Write which of the following registers is	used to keep track of address of the mer	mory
location where the next instruction is lo	cated?	
a) Memory Address Register	b) Memory Data Register	
c) Instruction Register d) Program Counter		
(xv) Select which of the following translates of machine instruction	a high-level language program into seque	ence
a) Compiler	b) Interpreter	
c) Both (Compiler) and (Interpreter)	d) Program translator	
	Group-B	
(Short Answer Type Questions)		3 x 5=15
2. Explain page fault, cache miss and hit ratio		(3)
3. Explain Memory Latency and Memory Access Time		(3)
4. Explain Von Neumann architecture.		(3)
5. Write about properties of memory hierarchy?		(3)
6. Explain software interrupts		(3)
	OR	
Explain the Locality of reference		(3)
	Group C	
Group-C (Long Answer Type Questions)		5 x 6=30
(Long Ansv	wer Type Questions)	3 X 0-30
7. Explain with examples Differentiate RISC a	and CISC	(5)
8. Define how Harvard architecture is different from Von Neumann architecture		(5)
9. Write about memory management unit (MMU)		(5)
10. Explain Flynn classification		(5)
		(5)
11. Justify cache coherency		(5)
12. Explain Ripple carry adder with diagram	OR	(3)
Differentiate between multi computers and multiprocessor		(5)