

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- February 2020

B.Tech IT IV Semester

COURSE CODE: 10B22CI421

MAX. MARKS: 15

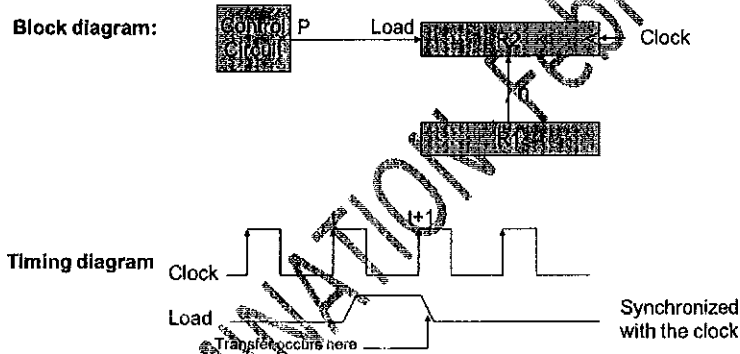
COURSE NAME: COMPUTER ORGANISATION

COURSE CREDITS: 04

MAX. TIME: 1Hr

*Note: All questions are compulsory. Each question carries equal marks. Carrying of mobile phone during examinations will be treated as case of unfair means.*

1. (a) Explain the following Register Transfer Language



(b) Give the examples for following basic Symbols for Register Transfers

Basic Symbols for Register Transfers		
Symbol	Description	Examples
Letters & numerals	Denotes a register	
Parenthesis ( )	Denotes a part of a register	
Arrow ←	Denotes transfer of information	
Comma ,	Separates two microoperations	

2. (a) Draw and explain the common bus system using four registers and four 4X1 Mux  
(b) Draw and explain the Logic Microoperations Hardware Implementation

3. Implement the following Arithmetic Microoperations in a single Arithmetic Circuit

Select			Input $Y$	Output $D = A + Y + C_{in}$	Microoperation
$S_1$	$S_0$	$C_{in}$			
0	0	0	$B$	$D = A + B$	Add
0	0	1	$B$	$D = A + B + 1$	Add with carry
0	1	0	$\overline{B}$	$D = A + \overline{B}$	Subtract with borrow
0	1	1	$\overline{B}$	$D = A + \overline{B} + 1$	Subtract
1	0	0	0	$D = A$	Transfer $A$
1	0	1	0	$D = A + 1$	Increment $A$
1	1	0	1	$D = A - 1$	Decrement $A$
1	1	1	1	$D = A$	Transfer $A$

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