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SET - 1

VAAGDEVI ENGINEERING COLLEGE

P.O.BOLLIKUNTA, KHILA WARANGAL (M) WARANGAL - 506 005

(AUTONOMOUS)

II YEAR B.TECH I SEM R23 REG. I - MID TERM EXAMINATIONS SEP - 2024

COMPUTER ORGANIZATION AND ARCHITECTURE

Computer Science and Engineering(AI&ML)

Date: 21.09.2024 **Time:10.00 AM – 12.00 noon**

Session: F N **Max.Marks:30**

Note: This question Paper Contains two parts. Part A & B

Cos	Course Outcomes for Assessment in this Test:
1	Understand the basics of instructions sets and their impact on processor design.
2	Demonstrate an understanding of the design of the functional units of a digital computer system
3	Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory.
4	Design a pipeline for consistent execution of instructions with minimum hazards

PART – A **(10 X 1 = 10 Marks)**

CHOOSE THE CORRECT ANSWER

Q. No.	Questions	Marks	CO	BL
1	A microprogram sequencer ( ) (a) Generates the address of next micro instruction to be executed. (b) Generates the control signals to execute a microinstruction. (c) Sequentially averages all microinstructions in the control memory. (d) Enables the efficient handling of a micro program subroutine.	1	1	1
2	*In STACK structure both addition and removal are called as ( )* *(a) PUSH and POP (b) POP and PUSH* *c) PUSH and PUSH (d) POP and POP*	1	1	2
3	The control unit controls other units by generating ___ ( ) (a) Control signals (b) Timing signals (c) Transfer signals (d) Both A&B	1	1	4
4	8bit registers includes ( ) (a) AR,PC (b)INPR,OUTR (c)AC,IR (d)A& C	1	2	1
5	The instructions which copy information from one location to another either in the processor's internal register set or in the external main memory are called ( ) (a) Data transfer instructions. (b) Program control instructions. (c) Input-output instructions. (d) Logical instructions.	1	2	1

FILL IN THE BLANKS

6	_____holds the address of the location to be accessed	1	2	1
7	Program counter consists of ---------- bits	1	1	1
8	Y=(p+q)*(r+s) is example of ---------- instruction	1	1	1
9	Description for instruction CLA is ----------	1	2	1
10	A control word is represented with -------- and ----------	1	1	1

PART – B (4 X 5 = 20 Marks) ANSWER ANY FOUR OF THE FOLLOWING				
Q. No.	**Questions**	**Marks**	**CO**	**BL**
1	Design a 4 bit binary Adder and Subtractor for A=1010 and B=0100	5	2	3
2	Explain instruction formats for arithmetic micro operation of X=(A+B)*(C+D) in detail	5	2	3
3	Explain data transfer and data manipulation instruction with examples	5	1	2
4	With a neat sketch explain the block diagram of a Digital Computer	5	1	2
5	Identify the function of a address sequencer in micro programmed control unit and explain	5	2	2
6	Explain general register organization	5	1	2

Assessment Summary :							
Cos	**Remember**	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**	**Total**
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