



Nagar Yuwak Shikshan Sanstha's
Yeshwantrao Chavan College of Engineering
(An Autonomous Institution Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)
Hingna Road, Wanadongri, Nagpur.

Even Term 2021-2022

14.07.2022

Mid Semester Exam I

Second Semester B.Tech.(AIDS)

AIDS2155 Computer Architecture and Organization

Time: 1 Hr. 30 Min.

Max Marks: 30

Instructions to Examinees

- All questions are compulsory and figures to right indicate marks allotted, CO & Bloom's Level.
- Assume suitable data wherever necessary.

Sr. No.	Question & Description	Marks	CO & Bloom's Level
Q.1	Solve the following.	10	CO mapped
	[A] i) State and prove De Morgan's theorem.	02	CO1(L2)
	ii) Apply the De Morgan's theorem to each of the following expression. a) $((A+BC)'+D(E+F'))'$ b) $(AB' \cdot (A+C))' + A'B \cdot (A+B+C)'$	04	CO1(L2)
	[B] Minimize the following logic function using K-map and Design using NAND gate only $F(A,B,C,D) = \sum m(0,1,2,3,4,7,8,9,10,11,12,14)$ $F(A,B,C,D) = \sum m(1,3,4,11) + d(2,7,8,12,14,15)$	04	CO1(L2)
Q.2	Solve the following.	10	CO mapped
	[A] Explain RS flip flop and RS latches using NOR gate.	05	CO1(L1)
	[B] Compare between combinational and sequential circuits and Explain Register in details..	(2+3) =05	CO1(L2)
Q.3	Solve the following.	10	CO mapped
	[A] State and Explain any three addressing modes with suitable example also identify the addressing modes of the following expression. i) MOV R1, 300 ii) ADD AC, (R1)+	(3+2) =05	CO1(L2)
	[B] Explain three-bus structure of a CPU and write the control sequence for Add R1, R2, R3.	05	CO1(L2)