K.S.Institute of Technology, Bangalore

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

ASSIGNMENT QUESTIONS

Academic Year	**2021-2022**		
Batch	**2018-2022**		
Year/Semester/section	**IV/VII 'A' & 'B'**		
Course Code-Title	**18CS733/ Advanced Computer Architectures**		
Name of the Instructors	**Dr. Vijayalaxmi Mekali**	**Dept**	**CSE**

Assignment No: 2 **Total marks:10**
Date of Issue: 21-12-2021 **Date of Submission: 3-1-2022**

Sl.No	Assignment Questions	K Level	CO	Marks
1.	**Model** the Register-to-Register and Memory-to-Memory Architectural types a Vector processors.	Applying (K3)	CO2	1
2.	**List** and Explain the characteristics of Symbolic Processors.	Applying (K3)	CO2	1
3.	**Illustrate** the following **a.** Daisy chained arbitration technique **b.** Distributed arbitration technique	Applying (K3)	CO3	1
4.	**List** the various Cache mapping schemes. **Make use of** a neat diagram to explain all the mapping techniques	Applying (K3)	CO3	1
5.	**Illustrate the following techniques associated with cache and memory architecture** **a.** Low order memory interleaving. **b.** High order memory interleaving. **c.** Memory bandwidth and fault tolerance	Applying (K3)	CO3	1
6.	**Model** the synchronous and Asynchronous bus timing protocols	Applying (K3)	CO3	1
7.	**Illustrate** the features of nonlinear pipeline processor with feed forward and feed backwards connection	Applying (K3)	CO3	1

8.	Consider the following reservation table for a 4-state pipeline with a clock cycle $\tau = 2ns$ **Solve** the following **a.** Forbidden latencies and the initial collision vector **b.** Draw the state transition diagram for scheduling the pipeline. **c.** Determine the MAL(Minimum Average Latency) with shorted greedy cycle **d.** Pipeline throughput corresponding to MAL and to given τ.	Applying (K3)	CO3	1
9	**Model** the hierarchical bus system with neat diagram	Applying (K3)	CO4	1
10.	**Illustrate** the working of crossbar networks and multiport memory with a neat diagram.	Applying (K3)	CO4	1

	1	**2**	**3**	**4**
S1	**X**			**X**
S2		**X**		
S3			**X**	

Course in charge **HOD**