SOMAIYA VIDYAVIHAR UNIVERSITY

Semester: August 2021 – December 2021 **Examination: ESE Examination**		
Programme code: **Programme: B.TECH**	**Class:** SY	**Semester:** III **(SVU 2020)**
Name of the Constituent College: **K. J. Somaiya College of Engineering**	**Name of the Department** COMP	
Course Code: 116U01C303	**Name of the Course: Computer Organization and Architecture**	
Duration : 1 Hour 45 Minutes (15 minutes extra for uploading)	**Maximum Marks : 50**	
Instructions: **1)Draw neat diagrams 2) Assume suitable data if necessary**		

Question No.		**Max Marks**
Q1 (A)	Objective	10
1.1	Which of the following allows simultaneous write and read operation? a. ROM b. EROM c. RAM d. Flash memory	1M
1.2	Computer Address bus is- a. Multidirectional b. Bidirectional c. Unidirectional d. Directional	1M
1.3	Which of the following is a way in which the components of a computer are connected to each other ? a. Computer parts b. Computer Architecture c. Computer hardware d. Computer Organization	1M
1.4	Which of the following memory unit communicates directly with the CPU a. Auxiliary memory b. Main Memory c. Secondary Memory d. Magnetic tapes	1M
1.5	Which of the following is the operation executed on data stored in registers? a. Byte operation b. Bit operation c. Macro operation d. Micro operation	1M
1.6	Which of the following is a function of the control unit in the CPU? a. It stores program instruction b. It decodes program instruction c. It performs logic operations d. It stores Boolean values	1M

1.7	What does a computer bus line consist of ? a. Set of parallel lines b. Accumulators c. Registers d. Transistors.	1M
1.8	Which of the following operations is/are performed by the ALU? a. Data manipulation b. Paging. c. Allocation of registers d. Transfer of memory content between I/O and CPU	1M
1.9	Interrupts form an important part of ____systems. a. Multitasking b. Multi-user c. Batch processing d. Real time processing.	1M
1.10	Which of the following is correct about memory and storage? a. Memory is temporary, Storage is temporary. b. Memory is temporary, Storage is permanent. c. Memory is permanent, Storage is temporary. d. Memory is slow, Storage is fast.	1M
Q1 (B)	Attempt any FIVE questions out of the following (any 5 out of 7) (i) Define Cache Coherence and list the techniques for resolving the same. (ii) What is IAS Computer? State the importance of Von Neumann Model? (iii) Define MAR and MBR. (iv) Draw a neat labelled diagram for Horizontal and Vertical Microinstruction format. (v) What is DMA Controller? List one application of DMA. (vi) Differentiate between Paging and Segmentation. (vii) Differentiate between SRAM and DRAM.	10M
Q. 2	Solve for Booths Recoding using M= 25, Q= 5.Show all steps neatly.	10M
Q. 3	Draw and explain Instruction Cycle State diagram OR Draw & Explain the Pentium instruction format.	10M
Q. 4	Explain need of an I/O Module? List and Explain functions of I/O Module. Support your answer with a diagram OR State and explain principles of designing pipelined processors.	10M