

Date:

Registration number:

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

**BCA– VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2022**

**(Examination conducted in July 2022)**

**CA 6118 - Computer Organisation and Architecture**

Time- 2 ½ hrs Max Marks-70

This question paper contains TWO printed pages and THREE parts

**Part A**

 **Answer the following questions (10\*2=20 marks)**

1. What are logic gates? Explain the working of EX-OR gate.
2. Define the term program control instructions.
3. Draw the logic diagram for the Boolean expression **F=XY’Z+X’Y’Z+XYZ**
4. What are registers? List the basic computer registers.
5. Write a note on daisy chaining interrupts.
6. Write a short note on binary and error detection codes.
7. Define the term content addressable memory.
8. Write a short note on cache memory.
9. Define handshaking in asynchronous data transfer.
10. What is difference between loosely coupled and tightly coupled multiprocessors?

**PART B**

**Answer any five of the following questions (5\*6=30 marks)**

1. Write a note on decoders and explain the working of 3-to-8-line decoder with a diagram and truth table.
2. Explain in detail about LRU and FIFO replacement algorithm .
3. Simplify the following Boolean function using K- maps

F (w, x, y,z) = ∑(0,1,2,4,5,7,11,15)

1. Explain in detail about the different types of addressing modes.
2. Explain in detail about basic computer registers and their common bus system
3. With a neat block diagram write a note on input output configuration.
4. With a suitable example describe the one address, two address, three address instructions

**PART C**

**Answer any two of the following questions (2\*10= 20 marks**)

1. With a neat block diagram explain the general register organization of a computer. Explain the concept of control word.
2. Write a note on direct memory access transfer.
3. Explain the differences between multi programming vs multi-processing vs multithreading vs multitasking.