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

**BCA –VI SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**CA6118 – COMPUTER ORGANISATION AND ARCHITECTURE**

**Time: 2 ½ Hours Max Marks: 70**

**This paper contains \_\_\_2\_\_\_ printed pages and \_\_3\_\_\_ parts**

**PART-A**

**Answer all 10 questions (10 \*2 = 20marks)**

1. Mention the uses of registers in computers.
2. Define ROM. Write any one application of the same.
3. Define flip flops. give the names of any two types of flip flops
4. Write a note on internal interrupts.
5. Convert from gray code to binary: 0110
6. Define the term content addressable memory.
7. Give two differences between seek time and transfer time.
8. Define handshaking in asynchronous data transfer.
9. List two conditional and two unconditional shift instructions.
10. Mention the salient features of multiprocessors

**PART B**

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

1. . Give a detailed note on the following registers (2+2+2)
2. Program counter.
3. Accumulator.
4. Data register.
5. Illustrate the instruction cycle in detail with a flow chart.
6. Explain the CPU-IOP communication.
7. Illustrate with an example the optimal page replacement algorithm to find the page fault and page hit .
8. Explain the working of three address and zero address instruction with an example.
9. Draw the timing diagrams and explain the concept of handshaking in asynchronous data transfer.
10. Differentiate between multiprogramming vs multitasking vs multiprocessing vs multi-threading .

**PART C**

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

1. Explain the floating point and fixed point representations with an example each .
2. Write a detailed note on DMA, DMA controller with a block diagrams.
3. With a neat block diagram explain the general register organization of a computer. Explain the concept of control word.