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Shree Damodar College of Commerce & Economics, Margao-Goa
FY BCA Semester-I Repeat, Semester End Examination, Nov 2023
Computer Organization and Architecture (CAC-102)

Duration: 2 Hours   **Max Marks: 60**

Instructions: i) All Questions are compulsory
           ii) Figures to the right indicate full marks

Q1.A) **State TRUE or FALSE**   **(5x1=05)**

  i) In Direct Addressing Mode the actual operand is given in the instruction itself.

  ii) In a parallel interface, there are multiple lines connecting the I/O module and the peripheral, and multiple bits are transferred simultaneously

  iii) Instruction Register (IR) holds the last instruction fetched.

  iv) DRAM doesn't Requires periodic charge refreshing to maintain data storage

  v) Interrupts are provided primarily as a way to improve processing efficiency

Q1.B) **Define the purpose of the following in not more than 20 words.**   **(5x1=05)**

  i) Microprocessor
  ii) Associative mapping
  iii) Microinstruction execution
  iv) Central Processing Unit(CPU)
  v) Opcode

Q.2 **Answer the following**

  a) Explain the meaning of micro operations   **(2)**

  b) Explain the memory hierarchy with a diagram.   **(3)**

  c) Illustrate with a diagram any 2 alternate DMA configurations.   **(5)**

Q3. **Answer the following:**

  a) Explain the working of parallel and serial I/0   **(2)**

  b) Describe any 3 scheduling methods   **(3)**

  c) With the help of a diagram, explain any 3 addressing modes in detail.   **(5)**

Q4. **Answer the following:**

    a) Explain the need of addressing modes in computers.   **(2)**

    b)   Explain Instruction fetch cycle with a diagram.   **(3)**

    c) Illustrate the working of any 3 RAID levels and justify its need.   **(5)**

Q5. **Answer the following.**

    a) Explain write through and write back operations in memory   **(2)**

    b) Explain Instruction pipelining and stages.   **(3)**

    c) Discuss the 4 general categories of techniques that are in common use for device identification.   **(5)**

Q6. **Answer the following.**

    a) Explain the working of control bus in brief   **(2)**

    b) With a help of a diagram, explain von Neumann machine   **(3)**

    c) Explain the Replacement algorithms used in memory   **(5)**