# GOVERNMENT POLYTECHNIC MUMBAI
## TERM END EXAMINATION

**Programme:** IF-INFORMATION TECHNOLOGY

**E-11-12**

**Course Code:** IF 07304

**Course Title:** Computer Architecture & Organization

**Time Allotted:** 03 Hrs.   •   **Max.Marks:** 80   **Min Marks:** 29

**Instructions:**
1. Use **separate** answer book for section I and section II.
2. Attempt **all the questions** from each section.
3. Illustrate your answers with **neat sketches** wherever necessary.
4. **Use** of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
5. Marks on **Right Hand Side** indicate **full marks** for the question.
6. Assume suitable **additional data**, if necessary.

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## SECTION – I

**Q.1 <u>Attempt any SIX</u>** (6 x 2 marks)   **12 Marks**
   a. Define formatting.
   b. Enlist different buses available in computer.
   c. What are different types of FDD?
   d. Enlist different types of memory.
   e. Enlist any four features of Pentium processor.
   f. Give different components of Pentium motherboard.
   g. What are different computer generation?
   h. What are different number formats?

**Q.2.<u>Attempt any FOUR</u>** (4 x 4 marks)   **16 Marks**
   a. State functions of BIOS.
   b. Give the features of ISA bus
   c. Explain use of various outputs of SMPS.
   d. Give the comparison between 80386 SX and 80386 DX motherboard
   e. What are limitations of computer?
   f. Explain any two number formats.

**Q.3. <u>Attempt any TWO</u>** (2 x 6 marks)   **12 Marks**
   a. Draw and label the diagram for 80486 motherboard.
   b. Describe multimedia hit hardware.
   c. Explain architecture of Pentium processor in brief.

## SECTION- II

**Q.4 Attempt any six** (6 x 2 marks)                                     **12 Marks**

    a) Give advantages of virtual memory.
    b) Define access time for memory.
    c) List the features of 8255 PPI.
    d) State disadvantages of hardwired control unit.
    e) What is microprogrammed control unit?
    f) Define the terms 'Cache hit' and 'Cache miss'.
    g) List functions done by microprograms in CPU.
    h) What are hardwired controllers?


**Q.5 Attempt any four** (4 x 4 marks)                                     **16 Marks**

    a) Explain basic principle of hardwired control unit.
    b) Explain the operation of microprogrammed control unit.
    c) Draw and explain block diagram of 8255 PPI.
    d) Explain the concept of virtual memory. Give any two advantages over other memory scheme.
    e) Give the memory device characteristics.
    f) Define cache memory. Describe the basic structure of cache memory.


**Q.6 Attempt any two** (2 x 6 marks)                                      **12 Marks**

    a) Explain the concept of Interrupts and DMA.
    b) Explain control point and control signal definitions for accumulator based CPU.
    c) Describe associative mapping method for cache memory.

# GOVERNMENT POLYTECHNIC MUMBAI
## TERM END EXAMINATION

**Programme: IF– Information Technology**
**Course Code: IF07404**
**Course Title: System programing Concepts**
**Time Allotted: 03 Hrs.**　　　　　　**Max.Marks: 80**　　　　　　**Min Marks:29**

**Instructions:**
1. Use **separate** answer book for section I and section **II**.
2. Attempt **all the questions** from each section.
3. Illustrate your answers with **neat sketches** wherever necessary.
4. **Use** of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
5. Marks on **Right Hand Side** indicate **full marks** for the question.
6. Assume suitable **additional data**, if necessary.

# SECTION – I

**Q.1 Attempt any SIX (6 x 2 marks)**　　　　　　**12 Marks**
   a. Differentiate between compiler and Assembler.
   b. What is system software?
   c. What are the different phases of assembler?
   d. Define Analysis and synthesis phase of Assembler.
   e. Differentiate between single pass and multi pass Assembler.
   f. What are the different inputs given to Assembler?
   g. Enlist different sorting techniques.
   h. Differentiate between linear search and bianary search.

**Q.2.Attempt any FOUR (4 x 4 marks)**　　　　　　**16 Marks**
   a. Write a short note on macros
   b. Explain Loaders and Linker in brief.
   c. What are the elements of Assembly language programming?
   d. Explain two pass structure of Assembler in brief.
   e. Explain shell sort with suitable example
   f. Explain what factors make a good sorting algorithm.

**Q.3. Attempt any TWO (2 x 6 marks)**　　　　　　**12 Marks**
   a. What is software processor? Explain the components of system Software?
   b. Draw and explain flow – chart for pass–I Assembler.
   c. Explain Address calculation sort with suitable example.

## SECTION- II

**Q.4 <u>Attempt any SIX</u>** (6 x 2 marks)  **<u>12Marks</u>**
   a. State the function of loaders.
   b. List the features of macro facility.
   c. How macros call within macros are implemented?
   d. Define compiler? List the different phases of compiler.
   e. What is meant by dynamic loading.
   f. State the advantages & disadvantages of macro.
   g. Steps of algorithm for the systex anglysis phase
   h. Define MDT ( macro definition table) & MNT (macro name table)

**Q.5. <u>Attempt any FOUR</u>** (4 marks)  **<u>16Marks</u>**
   a. Explain single Pass Macro processor.
   b. Draw a neat diagram for the passes of compiler.
   c. Explain in brief the general loader scheme
   d. Explain assembling phase brief.
   e. Describe the specification of data base used by the two passes
      of the macro processor.
   f. Explain Direct Linking loaders

**Q6. <u>Attempt any TWO</u>** (2 x 6 marks)  **<u>12 Marks</u>**
   a. Write short note on –
       1) assemble & go loader
       2) absolute loader
   b. Describe the one pass macro processor along with flow chart & algorithm.
   c. Explain any two phases of compiler
       1) lexical phase
       2) syntax phase
       3) interpretation phase.

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