SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR
(AUTONOMOUS)
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QUESTION BANK (DESCRIPTIVE)

Subject with Code : COMPUTER ORGANIZATION **(18MC9105)** **Branch :** MCA
Year & Sem : I-Year & II-Sem **Regulation :** R18

UNIT – I
NUMBER SYSTEMS AND COMPUTER ARITHMETIC

1. Convert the following: (2×5=10M) [12M]
   (a) $(41)_{10}=(?)_2$
   (b) $(0.6875)_{10}=(?)_2$
   (c) $(10110001101011)_2=(?)_{16}$
   (d) $(B65F)_{16}=(?)_{10}$
   (e) $(306.D)_{16}=(?)_2$

2. a) Subtract the following with neat diagram? [12M]
   i) 1010100-1000011.
   ii) 1001001-(-1000100)
   b) Explain the following:
   i) Decoders ii) Encoders

3. Draw the H/W Flowchart and H/W Algorithm for Multiplication for positive numbers with a suitable example. [12M]

4. Draw the H/W Flowchart for Division with suitable example [12M]

5. Explain about arithmetic operations on floating point numbers with its neat sketch? [12M]
6. Draw the H/W Flowchart and Algorithm for Booth Multiplication with an example [12M]

7. a) Write about logical operations? [06M]
   b) Explain about error detecting codes? [06M]

8. a) solve the following Boolean function to a minimum number of terms
   $x(x^1+y)+x+x^1y$ [06M]
   b) Using K- map simplify the Boolean function [06M]
   $F(w, x, y, z)=\sum(0,1,2,4,6,8,9,12,13,14)$.

9. Discuss about the Multiplexers and Adders? [12M]
10. Write about Boolean algebra and simplification of Boolean expressions [12M]

UNIT – II

ARITHMETIC UNIT & MICRO PROGRAMMED CONTROL

1. What is memory hierarchy? Write about Main memory. [12 M]

2. Explain about RAM & ROM chips of main memory with neat sketch. [12 M]

3. Discuss about the cache memory with different types of mappings? [12 M]

4. Explain about the applications of Logic Micro Operations? [12 M]

5. Explain about Hardwired Control with the help of a neat diagram. [12 M]

6. Explain about Micro Programmed Control with Micro Program Example diagram [12 M]

7. Explain about Address Sequencing with neat diagram? [12 M]

8. Explain in detail about design of control unit? [12 M]

9. Write in detail about Logic Micro Operations with neat representations? [12 M]

10. Explain in details about all 3 types of Shift Register Operations? [12 M]

UNIT – III

BASIC CPU ORGANIZATION & INTEL 8086 ASSEMBLY LANGUAGE INSTRUCTIONS

1. a) Explain about assembler directives? [07 M]
   b) Explain about Data transfer instructions? [05 M]
2. What is input-output instructions and what are the types in it, Explain in detail. [12 M]
3. Explain about Arithmetic instructions in detail with neat diagram? [12 M]
4. Explain about logical instructions in detail with example. [12 M]
5. Explain about shift instructions with example. [12 M]
6. a) Write in detail about Data Transfer Instructions? [05 M]
   b) Write in detail about Program Control Instructions? [07 M]
7. Explain about rotate instructions and its types in detail? [12 M]
8. Describe the conditional and unconditional transfer instructions with example. [12 M]
9. a) What is interrupt? Explain about simultaneous request handling by the processor. [06 M]
   b) Explain about process control instructions? [06 M]
10. Explain about Programming with assembly language instructions with example. [12 M]

UNIT –IV

INPUT OUTPUT ORGANIZATION

1. a) Explain about Peripheral devices? [07 M]
   b) Explain the concept of Pipelining with clear example with neat sketch? [05 M]
2. a) Differentiate between memory mapped I/O and isolated I/O? [12 M]
   b) Differentiate between I/O and Memory bus? [12 M]
3. Explain aboutI/O Bus and interface moules? [12 M]
4. What is DMA? Draw the block diagram for DMA controller and explain about DMA transfer in a computer. [12 M]
5. List out I/O Interfaces and explain about them. [12 M]
6. Explain about modes of transfer and it types? [12 M]
7. Explain about Priority interrupts and it types? [12 M]
8. Explain about Input output processor(CPUIOP)? [12 M]
9. Explain the following.
   a) Programmed I/O, [06 M]
   b) Interrupt-initiated I/O [06 M]
10. Explain the following.
    a) Daisy chaining, [06 M]
    b) Parallel priority [06 M]

UNIT –V

PIPELINE, VECTOR PROCESSING AND MULTI PROCESSORS

1. a) Explain about Parallel Processing and its Types? [07 M]

   b) Explain the concept of Pipelining with clear example with neat sketch? [05 M]

2. Explain briefly about Arithmetic pipeline with neat diagram.
3. What are the major difficulties that cause the instruction pipeline to deviate from its normal operations? Explain.
4. a) Explain briefly about the characteristics of multiprocessors? [06 M]

   b) Explain about inter processor arbitration? [06 M]

5. Explain about Interconnection Structures in detail. [12 M]
6. Explain about Inter Processor Arbitration with neat sketch. [12 M]
7. a) Explain about vector processing? [06 M]

   b) Explain about Array processors? [06 M]

8. Explain about Multiprocessor and its classification in detail [12 M]
9. Explain about Inter Process Communication & Synchronization in detail [12 M]
10. Explain the following.

    a) Cache Coherence, [06 M]
    b) Shared Memory Multiprocessors. [06 M]