

G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE

AUTONOMOUS

(FOR WOMEN)

Department of Computer Science and Engineering

Methodology: VIVA

Faculty Name: **Mrs. Jayashree S Patil**
 Mr. Ch. Sudarshan Reddy
 Mrs. D. Naga Swetha

Class/Sem: III B.Tech I Sem

Academic Year: 2021-2022

Subject: Computer Networks Lab

1.What do you mean by data communication?

Ans: It is the exchange of data between two devices via some form of transmission medium such as wire cable. The communicating system must be part of a communication system made up of a combination of hardware and software. The effectiveness of a data communication system depends on three fundamental characteristics: delivery, accuracy and timeliness.

2.What is simplex?

Ans: It is the mode of communication between two devices in which flow of data is unidirectional. i.e. one can transmit and other can receive.

E.g. keyboard and monitor.

3.What is half-duplex?

Ans: It is the mode of communication between two devices in which flow of data is bi-directional but not at the same time. ie each station can transmit and receive but not at the same time.

E.g walkie-talkies are half-duplex system.

4.What is full duplex?

Ans: It is the mode of communication between two devices in which flow of data is bi-directional and it occurs simultaneously. Here signals going in either direction share the capacity of the link.

E.g. telephone

5.What is a network?

Ans: It is a set of devices connected by communication links. A node can be a computer or any other device capable of sending and/or receiving data generated by other nodes on the network.

6.What is distributed processing?

Ans: It is a strategy in which services provided by the network reside at multiple sites.

7.What is point to point connection?

Ans:It provides a dedicated link between two devices. The entire capacity of the link is reserved for transmission between the two devices

e.g. when we change the TV channels by remote control we establish a point to point connection between remote control and TV control system.

8.What is multipoint connection?

Ans: In multipoint connection more than two specific devices share a single link.

Here the capacity of the channel is shared either separately or temporally.

9.What is a topology?

Ans: Topology of a network is defined as the geometric representation of the relationship of all the links and linking devices (node) to one another. Four basic topologies are star, bus, ring and mesh.

Star – Here each device has a dedicated point to point link only to a central controller called hub.



Bus -It is multipoint. One long cable acts as a backbone to link all the devices in the network.
Ring -Here each device has a dedicated point to point connection only with the two devices on either side of it.
Mesh -Here every device has a dedicated point to point link to every other device.

10. Define LAN, MAN and WAN.

Ans: LAN- A local area network (LAN) is a privately owned and links the devices in a single office, building or campus.

It allows resources to be shared between personal computers and work stations.

MAN- A metropolitan-area network (MAN) spreads over an entire city.

It may be wholly owned and operated by a private company, eg local telephone company.

WAN – A wide area network (WAN) provides long distance transmission of data, voice, image and video information over large geographic areas that comprise a country, a continent or even whole world.

11. Define internet?

Ans: It is a network of networks.

12. What is a protocol?

Ans: It is a set of rules that governs data communication. A protocol defines what is communicated, how it is communicated, and when it is communicated. The key elements of protocol are syntax, semantics and timing.

13. What is TCP/IP protocol model?

Ans: It is a five layered model which provides guidelines for the development of universally compatible networking protocols.

The five layers are physical, data link, network, transport and application.

14. Describe the functions of five layers?

Ans: Physical- It transmits raw bits over a medium. It provides mechanical and electrical specification.

Data link- It organizes bits into frames. It provides hop to hop delivery.

Network-It moves the packets from source to destination. It provide internetworking.

Transport-It provides reliable process to process message delivery and error recovery.

Application-It allows ti access to network resources.

15. What is ISO-OSI model?

Ans: Open Systems Interconnection or OSI model was designed by the International Organization for Standardization (ISO) .It is a seven layer model. It is a theoretical model designed to show how a protocol stack should be implemented.

It defines two extra layers in addition to TCP/IP model.

Session -It was designed to establish, maintain, and synchronize the interaction between communicating system.



G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE

AUTONOMOUS (FOR WOMEN)
Department of Computer Science and Engineering

Methodology: VIVA

Faculty Name: Mrs. Ch. Radhika, Mr. Ch. Sudarshan Reddy, Mr. G. Nagababu

Class/Sem: II B. Tech II Sem

Academic Year: 2020-2021

Subject: Computer Organization and Microprocessor Lab

1. What is a Microprocessor?

Microprocessor is a CPU fabricated on a single chip, program-controlled device, which fetches the instructions from memory, decodes and executes the instructions.

2. What is Instruction Set?

It is the set of the instructions that the Microprocessor can execute.

3. What is Bandwidth ?

The number of bits processed by the processor in a single instruction.

4. What is Clock Speed ?

Clock speed is measured in the MHz and it determines that how many instructions a processor can processed. The speed of the microprocessor is measured in the MHz or GHz.

5. What are the features of Intel 8086 ?

Features:

- Released by Intel in 1978
- Produced from 1978 to 1990s
- A 16-bit microprocessor chip.
- Max. CPU clock rate: 5 MHz to 10 MHz
- Instruction set: x86-16
- Package: 40 pin DIP
- 16-bit Arithmetic Logic Unit
- 16-bit data bus (8088 has 8-bit data bus)
- 20-bit address bus - $2^{20} = 1,048,576 = 1 \text{ meg}$

6. What is Logical Address:?

- A memory address on the 8086 consists of two numbers, usually written in hexadecimal and separated by a colon, representing the segment and the offset. This combination of segment and offset is referred to as a logical address.
- Logical address = segment: offset

7. What is The Effective Address:

- In general, memory accesses take the form of the following example:
- `Mov ax, [baseReg + indexReg + constant]`
- This example copies a word sized value into the register AX.

- Combined, the three parameters in brackets determine what is called the effective address, which is simply the offset referenced by the instruction

8. What is Physical Address?

Physical memory address pointed by SEGMENT:OFFSET pair is calculated as:

Physical address = (<Segment Addr> * 10) + <Offset Addr>

9. What are the flags in 8086?

In 8086 Carry flag, Parity flag, Auxiliary carry flag, Zero flag, Overflow flag, Trace flag, Interrupt flag, Direction flag, and Sign flag.

10. Why crystal is a preferred clock source?

Because of high stability, large Q (Quality Factor) & the frequency that doesn't drift with aging. Crystal is used as a clock source most of the times.

11. What is Tri-state logic?

Three Logic Levels are used and they are High, Low, High impedance state. The high and low are normal logic levels & high impedance state is electrical open circuit conditions. Tri-state logic has a third line called enable line.

12. What happens when HLT instruction is executed in processor?

The Micro Processor enters into Halt-State and the buses are tri-stated.

13. What is Program counter?

Program counter holds the address of either the first byte of the next instruction to be fetched for execution or the address of the next byte of a multi byte instruction, which has not been completely fetched. In both the cases it gets incremented automatically one by one as the instruction bytes get fetched. Also Program register keeps the address of the next instruction.

14. What is 1st / 2nd / 3rd / 4th generation processor?

The processor made of PMOS / NMOS / HMOS / HCMOS technology is called 1st / 2nd / 3rd / 4th generation processor, and it is made up of 4 / 8 / 16 / 32 bits.

15. How many bit combinations are there in a byte?

Byte contains 8 combinations of bits.

16. Have you studied buses? What types of Buses are there?

There are three types of buses.

Address bus: This is used to carry the Address to the memory to fetch either Instruction or Data.

Data bus : This is used to carry the Data from the memory.

Control bus : This is used to carry the Control signals like RD/WR, Select etc.

17. What is the Maximum clock frequency in 8086?

An 5 Mhz is the Maximum clock frequency in 8086.

18.What is meant by Maskable interrupts?

An interrupt that can be turned off by the programmer is known as Maskable interrupt.

19.What is Non-Maskable interrupts?

An interrupt which can be never be turned off (ie. disabled) is known as Non-Maskable interrupt

20.What are the different functional units in 8086?

Bus Interface Unit and Execution unit, are the two different functional units in 8086.

21.What are the various segment registers in 8086?

Code, Data, Stack, Extra Segment registers in 8086.

22.What does EU do?

Execution Unit receives program instruction codes and data from BIU, executes these instructions and store the result in general registers.

23.what is the principle of stack used in 8086?

FIFO (First In First Out) stack is used in 8086.In this type of Stack the first stored information is retrieved first.

24.What are the flags in 8086?

In 8086 Carry flag, Parity flag, Auxiliary carry flag, Zero flag, Overflow flag, Trace flag, Interrupt flag, Direction flag, and Sign flag.

25.What is SIM and RIM instructions?

SIM is Set Interrupt Mask. Used to mask the hardware interrupts.

RIM is Read Interrupt Mask. Used to check whether the interrupt is Masked or not.

26.What are the different types of Addressing Modes?

A:- There are 12 different types of Addressing Modes.They are:-

<1> Immediate:-The Immediate data is a part of instruction, and appears in the form of successive bytes.

<2> Direct:-A 16-bit memory address(offset) is directly specified in the instruction as a part of it.

<3> Register:-Data is stored in a register and it is referred using the particular register (except IP).

<4> Register Indirect:-The address of the memory location which contains data or operand is determined in an indirect way.

<5> Indexed:-offset of the operand is stored in one of the index registers.

<6> Register Relative:-The data is available at an effective address formed by adding an 8-bit or 16-bit displacement with the content of any one of the registers BX,BP,SI and DI in the default (either DS or ES) segment.

<7> Based Indexed:-The effective address of the data is formed,in this addressing mode,by adding content of a base register to the content of an index register.

<8> Relative Based Indexed:- The effective address is formed by adding an 8 or 16-bit displacement with the sum of contents of any one of the base registers and any one of the index registers,in the default segment.

<9> Intrasegment Direct Mode:-In this mode,the address to which the control is to be transferred lies in the segment in which the control transfer instruction lies and appears directly in the instruction as an immediate displacement value.

<10> Intrasegment Indirect Mode:-In this mode,the displacement to which the control is to be transferred,is in the same segment in which the control transfer instruction lies,but it is passed to the instruction indirectly.

<11> Intersegment Direct:-In this mode,the address to which the control is to be transferred is in a different segment.

<12> Intersegment Indirect:-In this mode,the address to which the control is to be transferred lies in a different segment and it is passed to the instruction indirectly sequentially.

27.What are the General Data Registers & their uses?

A:- The Registers AX,BX,CX,DX are the general Purpose 16-bit registers.AX register as 16-bit accumulator.BX register is used as an offset Storage.CX register is used as default or implied counter.Dx register is used as an implicit operand or destination in case of a few instructions.

28.What are Segment Registers & their uses?

A:-There are 4 Segment Registers Code Segment(CS),Data Segment(DS),Extra Segment(ES) & Stack Segment(SS) registers.CS is used for addressing memory location in code.DS is used to point the data.ES refers to a segment which is essentially in another data segment.SS is used for addressing stack segment of memory.

29.What are Flag registers?

A:-Divided into 2 parts:-Condition code or status flags and machine control flags.

S-Sign Flag:-Is to set when the result of any computation is negative.

Z-Zero Flag:-Is to set if the result of the computation or comparison performed by the previous instruction is zero.

C-Carry Flag:-Is set when there is carry out of MSB in case of addition or a borrow in case of subtraction.

T-Trap Flag:-Is set,the processor enters the single step execution mode.

I-Interrupt Flag:-Is set,the maskable interrupts are recognised by the CPU.

D-Direction Flag:-Is set for autoincrementing or autodecrementing mode in string manipulation instructions.

AC-Auxiliary Carry Flag:-Is set if there is a carry from the lowest nibble during addition or borrow for the lowest nibble.

O-Overflow Flag:-Is set if the result of a signed operation is large enough to be accommodated in a destination register.

30.What does the 8086 Architecture contain?

A:-The complete architecture of 8086 can be divided into 2 types :-Bus Interface Unit(BIU) & Execution Unit.

The BIU contains the circuit for physical address calculations and a precoding instruction byte queue & it makes the bus signals available for external interfacing of the devices.

The EU contains the register set of 8086 except segment registers and IP.It has a 16-bit ALU,able to perform arithmetic and Logic operations.

31) What are Data Copy/Transfer Instructions?

A:- Mov

Push

Pop

Xchg

In

Out

Xlat

Lea

Lds/Les

Lahf

Sahf

Pushf

Popf

32. What are Machine Control Instructions?

A:- Nop

Hlt

Wait

Lock

33) What are Flag Manipulation Instructions?

A:- Cld

Std

Cli

Sti

34) What are String Instructions?

A:- Rep

MovSB/MovSW

Cmps

Scas

Lods

Stos

35.What is an Interrupt?

Def:- Interrupt is an external signal that causes a microprocessor to jump to a specific subroutine.

An interrupt operation suspends execution of a program so that the system can take special action.The interrupt routine executes and normally returns control to the interrupted procedure, which then resumes execution.BIOS handles Int 00H-1FH, whereas DOS handles INT 20H-3FH.

36. What is an Opcode?

A:-The part of the instruction that specifies the operation to be performed is called the Operation code or Op code.

37.What is an Operand?

A:-The data on which the operation is to be performed is called as an Operand.

38.Explain the difference between a JMP and CALL instruction?

A:-A JMP instruction permanently changes the program counter.

A CALL instruction leaves information on the stack so that the original program execution sequence can be resumed.

39.What is meant by Polling?

A:- Polling or device Polling is a process which identifies the device that has interrupted the microprocessor.

40.What is an Instruction?

A:-An instruction is a binary pattern entered through an input device to command the microprocessor to perform that specific function.

41.What is Assembler?

A:-The assembler translates the assembly language program text which is given as input to the assembler to their binary equivalents known as object code.

The time required to translate the assembly code to object code is called access time.The assembler checks for syntax errors&displays them before giving the object code.

42.Define Pipelining?

A:-In 8086,to speedup the execution program,the instructions fetching and execution of instructions are overlapped each other.this is known as Pipelining.

43.What is the use of HLDA?

A:-HLDA is the acknowledgment signal for HOLD. It indicates whether the HOLD signal is received or not.

HOLD and HLDA are used as the control signals for DMA operations.

44. Explain about "LEA"?

A:-LEA(Load Effective Address) is used for initializing a register with an offset address.

A common use for LEA is to initialize an offset in BX, DI or SI for indexing an address in memory.

An equivalent operation to LEA is MOV with the OFFSET operator, which generates slightly shorter machine code.

45. Difference between "Shift" and "Rotate".

A:-Shift and Rotate commands are used to convert a number to another form where some bits are shifted or rotated.

A rotate instruction is a closed loop instruction. That is, the data moved out at one end is put back in at the other end.

The shift instruction loses the data that is moved out of the last bit locations.

Basic difference between shift and rotate is shift command makes "fall of " bits at the end of the register.

Where rotate command makes "wrap around" at the end of the register.

46. Difference between JMP and JNC?

A:-JMP is Unconditional Branch.

JNC is Conditional Branch.

47. List the String Manipulation Commands?

A:-REP=Repeat.

MOVS=Move Byte/Word

CMPS=Compare Byte/Word

SCAS=Scan Byte/Word

LODS=Load byte/Wd to AL/AX

STOS=Store Byte/Wd from AL/A

48. What is the main use of ready pin?

A:-READY is used by the microprocessor to check whether a peripheral is ready to accept or transfer data.

A peripheral may be a LCD display or analog to digital converter or any other.

These peripherals are connected to microprocessor using the READY pin.

If READY is high then the periphery is ready for data transfer. If not the microprocessor waits until READY goes high.

49. Explain about Direction Flag?

A:-This is used by string manipulation instructions.

If this flag bit is 0, the string is processed beginning from the lowest to the highest address, i.e., Autoincrement mode.

Otherwise, the string is processed from the highest towards the lowest address, i.e., Autodecrementing mode.

50. What are the basic units of a microprocessor?

The basic units or blocks of a microprocessor are ALU, an array of registers and control unit.

**G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE
AUTONOMOUS (FOR WOMEN)
Department of Computer Science and Engineering**

Subject: Web Technologies & Data Mining Lab

Academic Year: 2023-2024

Class/Semester: III B.Tech II Sem

Name of the Faculty: Mrs. K. Gnana Prasuna, Mr. T. Rajesh

Methodology: Viva



**G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE
AUTONOMOUS (FOR WOMEN)
Department of Computer Science and Engineering**

Subject: Programming Lab

Academic Year: 2023-2024

Class/Semester: I B.Tech I Sem

Name of the Faculty: Mrs. K. Sindhura, Mrs. Y. Sravani Devi

Methodology: Viva

