UNIT 1 : BASICS OF COMPUTER

QUESTIONS

Section 1.2

1. Define an analog computer and a digital computer.

2. Give an example each of analog computer and digital computer.

Section 1.3

3. List the main characteristics of the computer.

4. Describe the characteristics of the computer.

5. List three significant limitations of the computer.

Section 1.4

6. Explain briefly the developments in computer technology starting from a simple calculating machine to the first computer.

7. What is a calculating machine?

8. What is the key feature of the Jacquard's punch card?

9. Name the first calculating device for the counting of large numbers.

10. Who is called the Father of Computer?

Section 1.5.1

11. The first generation computers used_____for circuitry.

12. Describe the first generation computer based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance, and (e) Their applications.

13. Give two examples of first generation computers.

14. List the drawbacks of the first generation computers.

Section 1.5.2

15. The second generation computers used_____for circuitry.

16. Describe the second generation computer based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance and (e) Their applications.

17. Give two examples of second generation computers.

18. List the drawbacks of the second generation computers.

Section 1.5.3

19. The third generation computers used_____for circuitry.

20. Describe the third generation computer based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance, and (e) Their applications.

21. Give two examples of third generation computers.

22. List the drawbacks of the third generation computers.

Section 1.5.4

23. The fourth generation computers used_____for circuitry.

24. Describe the fourth generation computer based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance and (e) Their applications.

25. Give two examples of fourth generation computers.

26. List the drawbacks of the fourth generation computers.

Section 1.5.5

27. The fifth generation computers used_____for circuitry.

28. Describe the fifth generation computer based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance and (e) Their applications.

29. Give two examples of fifth generation computers.

30. Compare in detail the five generations of computers based on the (a) Hardware (b) Software (c) Computing characteristics (d) Physical appearance and (e) Their applications. Also give at least one example of each generation of computer.

Section 1.6.1

31. Define microcomputer.

32. Give two examples of microcomputer.

33. List three categories of microcomputers.

Section 1.6.2

34. Define minicomputers.

35. Give two examples of minicomputer.

Section 1.6.3

36. Define mainframe computer.

37. Give two examples of mainframe computer.

38. Define a dumb terminal.

39. Define an intelligent terminal.

Section 1.6.4

40. Define a supercomputer.

41. Give two examples of supercomputer.

42. The speed of supercomputer is generally measured in_____.

43. List two uses of the supercomputer.

44. Name the supercomputer assembled in India.

45. Highlight the differences between microcomputer, minicomputer, mainframe computer and supercomputer.

Section 1.7

46. Define a computer.

47. Define (1) Program (2) Software (3) Hardware (4) ALU (5) CU (6) CPU (7) Data.

48. Differentiate between software, data and hardware.

49. List the components of computer hardware.

50. Explain in detail the components of computer hardware.

51. List the steps in the working of the computer.

52. Explain the working of the computer.

53. Explain the input-process-output cycle.

Section 1.8

54. List some areas where the computers are used.

55. Explain briefly the use of computers in the following areas—(a) Education, (b) Advertising, and (c) Government.

Extra Questions

56. Give full form of the following abbreviations

1. CPU
2. I/O
3. ALU
4. CU
5. LSI
6. VLSI
7. PC
8. GUI
9. SLSI
10. ES
11. NLP
12. AI
13. PDA
14. FLOPS
15. UNIVAC
16. ENIAC
17. EDVAC

57. Write short notes on

1. Components of Computer
2. Input-Process-Output
3. I/O Unit
4. Central Processing Unit
5. Storage Unit
6. History of Computers
7. First Generation Computer
8. Second Generation Computer
9. Third Generation Computer
10. Fourth Generation Computer
11. Fifth Generation Computer
12. Microcomputers
13. Minicomputers
14. Mainframe Computers
15. Supercomputer
16. Personal Computer (PC)
17. Notebook Computer
18. Tablet Computer
19. Netbook
20. Personal Digital Assistant (PDA)
21. Applications of Computer

58. Give differences between the following:

1. Analog and Digital Computer
2. Dumb Terminal and Intelligent Terminal
3. Microcomputer and Minicomputer
4. Minicomputer and Mainframe Computer
5. Mainframe computer and Supercomputer
6. First Generation Computers and Second Generation Computers
7. Second Generation Computers and Third Generation Computers
8. Third Generation Computers and Fourth Generation Computers
9. Fourth Generation Computers and Fifth Generation Computers
10. Desktop Computer and Notebook Computer

THE COMPUTER SYSTEM HARDWARE

QUESTIONS

Section 2.1

1. Define computer architecture, computer organization and computer design.

2. Give a brief description of the working of the computer.

Section 2.2

3. CPU is also often called the_____of computer.

4. Define a microprocessor.

5. Define a motherboard.

6. The different parts of the CPU are_____, _____ and _____.

7. _____ and _____ are the main memory.

8. What is the purpose of the main memory?

9. List the main functions of the CPU.

Section 2.2.1–2.2.3

10. ALU consists of the _____ unit and _____ unit.

11. What are the functions of the ALU?

12. _____ is also called the working memory of the CPU.

13. List five important registers of the CPU. Also state the purpose of each register.

14. Why are Registers used in the CPU?

15. Define word size.

16. “This is a 64–bit processor”. Explain its meaning.

17. The size of the register is also the _____ size.

18. Which is faster—a 32-bit processor or a 64-bit- processor?

19. What are the functions of the control unit?

Section 2.3–2.3.3

20. Explain the need of the cache memory?

21. The _____ memory is placed between the RAM and the CPU.

22. There are _____ levels of cache memory.

23. Explain the three levels of the cache memory.

24. State three important features of the cache memory.

25. The size of the cache memory is generally in the range _____.

26. What is the purpose of RAM?

27. List the features of the primary memory.

28. List the key features of the secondary memory.

Section 2.4

29. Define the stored program concept.

30. Describe the format of an instruction.

31. The common fields of an instruction are _____ code and _____ code.

32. What is the function of the operand code and the operation code?

Section 2.5

33. Define an Instruction set.

34. What is the significance of the Instruction set in the CPU?

35. “Two processors are compatible”. How do you deduce this statement?

36. Define microarchitecture.

Section 2.6

37. Define an instruction cycle.

38. Give a detailed working of the instruction cycle.

39. Name the four steps involved in an instruction cycle.

40. The number of instructions executed in a second by the CPU, is measured in _____.

Section 2.7

41. The microprocessors are classified as _____ and _____ on the basis of the instruction set.

42. The x86 instruction set of the original Intel 8086 processor is of the _____ type.

43. Describe the features of the CISC architecture.

44. Give two examples of the CISC processor.

45. Describe the features of the RISC architecture.

46. Give two examples of the RISC processor.

47. What is the use of parallel processing and pipelining?

Section 2.8

48. Define a bus.

49. Define a system bus.

50. Define an expansion bus.

51. Why is a bus used?

52. Define—control bus, address bus and data bus.

53. A system bus or expansion bus comprises of three kinds of buses _____, _____ and _____.

54. Name the bus connecting CPU with memory?

55. Name the bus connecting I/O devices with CPU?

Section 2.8.1

56. In a system bus, what is the significance of the control bus, address bus and data bus?

57. The _____ of data bus affects the speed of computer.

58. Name the bus whose width affects the speed of computer?

59. The _____ of address bus determines the maximum number of memory locations the computer can address.

60. Name the bus whose width determines the maximum number of memory locations the computer can address?

Section 2.8.2–2.8.3

61. What are the functions of data bus, address bus and control bus in the expansion bus?

62. Where is the expansion card fixed on the motherboard?

63. What is an expansion slot?

64. Name three common bus technologies.

65. What kind of devices is attached to the PCI bus, AGP bus and USB bus?

Section 2.9

66. List the factors that affect the performance of the computer.

67. Explain in detail the factors that affect the performance of the computer.

68. What is the use of the system clock?

69. The clock frequency is measured in _____.

Section 2.10–2.10.1

70. "The motherboard is characterized by the form factor, chipset and the type of processor socket used". Explain.

71. Define form factor.

72. Define chipset.

73. _____ is the most common design of the motherboard for desktop computers.

74. What is the significance of the chipset?

75. What is the function of the BIOS?

76. What is the function of the CMOS chip?

77. Explain the booting process when the computer is switched on.

78. What is POST?

Section 2.10.2–2.10.7

79 . List five ports and interfaces available on the backside of the computer to connect the devices.

80. What devices are attached to—(a) Serial Port, (b) Parallel Port, (c) USB Port, (d) Firewire, (e) RJ45 connector, (f) VGA connector, (g) Audio plugs (Line-In, Line-Out and microphone), (h) PS/2 Port, and (h) SCSI Port.

81. List five expansion slots available in the computer.

82. What devices are attached to—(a) ISA slots, (b) PCI slot, (c) AGP slot, (d) PCI Express slot, and (e) PC Card.

83. What is the purpose of the Ribbon cables?

84. Two types of memory chips _____ and _____ are used in desktop computers.

85. List any three storage devices that are attached to the computer.

Extra Questions

86. Give full form of the following abbreviations

1. IC
2. MIPS
3. EISA
4. PCI
5. USB
6. AGP
7. BIPS
8. SIMM
9. DIMM
10. GHz
11. MHz
12. PCB
13. BIOS
14. CMOS
15. POST
16. ISA
17. ROM
18. ACC
19. IR
20. PC
21. MAR
22. MBR
23. DR
24. RISC

25. CISC
26. ATX
27. SATA

87. Write short notes on—

1. Working of computer
2. Central processing unit
3. Registers
4. Cache memory
5. RAM
6. Control unit
7. ALU
8. Instruction format
9. Instruction set
10. Instruction Cycle
11. Microprocessor
12. System bus
13. Expansion bus
14. Performance of computer
15. System clock
16. Motherboard
17. BIOS
18. CMOS chip
19. Ports and interfaces in computer
20. Expansion slots
21. Main components in a computer case

88. Give differences between the following—

1. Registers and cache memory
2. Cache memory and RAM
3. RISC and CISC
4. System bus and expansion bus
5. Data bus, address bus and control bus

COMPUTER MEMORY

QUESTIONS

Section 3.1–3.2

1. _____ is the basic unit of memory.

2. What is the unit of memory representation in a computer?

3. A bit is a single binary digit _____ or _____.

4. Define a bit.

5. Define a byte.

6. Define a word.

7. What is the significance of a byte?

8. One byte can store _____ different combination of bits.

9. 1 Byte = _____bits

10. 1 Kilobyte (KB) = _____bytes

11. 1 Megabyte (MB) = _____KB

12. 1 Gigabyte (GB) =_____ MB =_____ KB

13. 1 Terabyte (TB) = _____GB = _____KB

Section 3.3

14. What are the two key factors that characterize the memory?

15. Defi ne (1) Capacity of memory, (2) Access time of memory.

16. The memory is fundamentally divided into two types _____ and _____.

17. List the key features of the internal memory

18. List the key features of the main memory.

19. The registers are located inside the _____.

20. Which is the fastest memory?

21. Arrange the memories in increasing order of speed_____ Register, RAM, Hard Disk Drive, Magnetic Tape, Cache Memory

22. Give the approximate speed and size of the Registers, Cache memory, RAM and Magnetic disk.

23. Show the memory hierarchy.

24. List the different memories available in the computer in order of their hierarchy with respect to the CPU.

25. Why is primary memory faster than the secondary memory?

Section 3.4–3.5

26. Define a cache hit and cache miss.

27. What is the purpose of the Registers?

28. What is the purpose of the cache memory?

Section 3.3

Section 3.6–3.6.1

29. _____ and _____ are the two main types of primary memory.

30. What is the unit to measure the size of RAM?

31. List the characteristic features of the RAM.

32. What is the meaning of volatile memory? Also give an example of volatile memory.

33. “The performance of RAM is affected by the access speed and the data transfer unit size”. Explain.

34. Name the two categories of RAM chips.

35. _____ memory chip is used for main memory and _____ memory chip is used for cache memory.

36. List the features of the DRAM memory chip.

37. Explain the working of the DRAM memory chip.

38. List the features of the SRAM memory chip.

39. Which is faster—SRAM or DRAM?

40. Define a memory module.

41. _____ and _____ are the two types of RAM modules.

42. What is the difference between the SIMM and DIMM memory modules?

Section 3.6.2

43. What are the functions of Bootstrap loader, POST and CMOS chip?

44. What is a bootstrap loader?

45. List the different kinds of ROM memory.

46. How are these different—PROM, EPROM and EEPROM?

47. What is a flash memory?

48. What are the features of the flash memory?

Section 3.7–3.8.2

49. What do you mean by sequential access?

50. What is the meaning of direct access?

51. Give an example of sequential access device and direct access device.

Section 3.9

52. Explain briefly the working of the magnetic tape.

53. What is the significance of track and frame in a magnetic tape?

54. What is the purpose of Inter-Record Gap in a magnetic tape?

55. Data is stored on tape in the form of _____.

56. How does a magnetic tape drive work?

57. List the features of a magnetic tape.

Section 3.10

58. Explain briefly the working of the magnetic disk.

59. What is the significance of track and sector in a magnetic disk?

60. Define (i) seek time, (ii) latency time, (iii) data transfer rate, and (iv) access time of the magnetic disk.

61. How is the access time of disk calculated? Explain in detail?

62. List the features of the magnetic disk.

63. What is the need of formatting the disk?

64. Name the four areas that are created when the disk is formatted using FAT.

65. Define (i) Boot sector, and (ii) File Allocation Table.

66. How do you find data on a magnetic disk?

67. What is the need of the root directory in a magnetic disk?

68. Name two types of magnetic disk.

Section 3.10.1–3.10.3

69. List the key features of the floppy disk.

70. Floppy disk comes in two basic sizes_____inch and_____inch.

71. List the key features of the hard disk.

72. List the key features of the zip disk.

73. What are the approximate storage capacity ranges of the floppy disk, hard disk and the zip disk?

74. Zip disk has the capacity of _____ disk and portability of _____ disk.

Section 3.11–3.13

75. List the key features of the optical disk.

76. Why is optical disk generally slower than hard disk?

77. List the key features of CD-ROM.

78. List the key features of DVD-ROM.

79. What are the approximate storage capacity ranges of the CD-ROM and DVD-ROM?

80. _____, _____ and are recordable optical disks.

81. What is a WORM disk?

82. Write two features each of CD-R,atures each of CD-R, CD-RW and DVD-R.

83. What are magneto-optical disk?

84. List the steps the computer performs when it is switched on till from the time it is ready for use.

85. When you write a program and the electricity goes off, your program is lost if you have not saved it. Why?

Extra Questions

86. Give full form of the following abbreviations

1. RAM
2. ROM
3. CD-ROM
4. SRAM
5. DRAM
6. PROM
7. EPROM
8. EEPROM
9. FAT
10. FDD
11. HDD
12. ZD
13. CD-ROM
14. WORM

15. CD-R
16. CD-RW
17. DVD-R
18. bit
19. KB
20. MB
21. GB
22. TB
23. ns
24. SIMM
25. DIMM
26. SO DIMM
27. BIOS
28. CMOS
29. POST
30. IRG
31. NTFS
32. DVD-ROM

87. Write short notes on:

1. Memory representation
2. Memory hierarchy
3. Internal Memory
4. Primary Memory
5. Secondary memory
6. Registers
7. Cache memory
8. RAM
9. Memory chips
10. Memory modules
11. ROM
12. Flash memory
13. Access types of storage
14. Working of mag devices netic tape
15. Working of magnetic
16. Finding data on disk magnetic disk
17. Floppy disk
18. Hard disk
19. Zip disk
20. Optical disk
21. CD-ROM
22. DVD-ROM
23. Recordable optical
24. Computer start-up process

88. Give differences between the following:

1. Bit and Byte
2. Primary memory and Secondary memory
3. RAM and ROM
4. DRAM and SRAM
5. SIMM and DIMM
6. PROM, EPROM and EEPROM
7. Sequential access devices and Direct access devices
8. Floppy disk and hard disk
9. CD-ROM and DVD-ROM
10. CD-R, CD-W and DVD-R

INPUT AND OUTPUT DEVICES

QUESTIONS

Section 4.1–4.2

1. Define peripheral devices.

2. Explain in detail the input unit of the computer.

3. What is the purpose input interface?

4. Explain in detail the output unit of the computer.

5. What is the purpose of output interface?

6. Name three input-output devices.

Section 4.3–4.4.1

7. Show the classification of the input devices.

8. Describe the features of the keyboard.

9. Give a description of the keyboard.

10. What is a cursor?

11. Explain the working of a keyboard

12. Name the different sections of a keyboard.

Section 4.4–4.4.2.4

13. Name three pointing devices.

14. Describe the features of the mouse.

15. Give a description of the mouse.

16. Explain the working of a physical mouse and optical mouse.

17. Describe a physical mouse.

18. Give description of an optical mouse.

19. What is right click, left click and double click when you use a mouse?

20. What is the purpose of drag and drop when you use a mouse?

21. Describe the features of trackball.

22. What is a trackball?

23. In which areas is joystick mostly used?

24. Give a brief description of joystick along with its features.

25. Name an application of digitizing tablet.

26. Describe a digitizing tablet.

Section 4.4.3–4.5.3.5

27. Name an application where a light pen is used.

28. Describe a touch screen. Give its features and explain its working.

29. Name some applications where you use a touch screen.

30. Explain the working of audio input devices.

31. Why is a sound card used?

32. Define speech recognition.

33. _____ and_____are examples of video input devices.

34. Name an application where computer vision is used.

35. Name three optical scanner devices.

36. Why is a scanner used?

37. Describe hand-held scanners and flat-bed scanners.

38. What is the purpose of OCR software in optical character recognition?

39. An application where MICR is commonly used is_____.

40. Name an application of OMR.

41. How does optical character reader recognize characters?

42. How does magnetic ink character reader recognize the magnetic characters?

43. How does optical mark reader recognize marks?

44. What is the use of barcode reader?

Section 4.6–4.6.1.1

45. Dot Matrix printers come in two sizes_____ column printer and _____ column printer.

46. The sharpness and clarity of print of the printer is determined by the _____ of printer.

47. Resolution of printer is measured in_____.

48. Describe a dot-matrix printer.

49. Describe a daisywheel printer.

50. Dot matrix and daisy wheel printers are character printer but drum printer is a _____ printer and laser printer is a _____ printer.

51. Describe non-impact printers.

Section 4.6.1.2–4.6.2.4

52. What is the use of a plotter?

53. Plotters are of two kinds— _____plotter _____ and _____ plotter.

54. Name two applications where plotters are used.

55. Define a microfilm.

56. When do we use a microfilm?

57. Give a description of the monitor.

58. Define the resolution of the screen.

59. Define the refresh rate of the screen.

60. Define the dot pitch of the screen.

61. The common resolution of computer screen is _____ and_____.

62. Describe the three factors on which the clarity of image on the computer screen depends.

63. Name the three factors on which the clarity of image on the computer screen depends.

64. Name some color adapters.

65. What is a visual display terminal?

66. Why are screen image projectors used?

67. Describe how the audio response system works.

68. Name two applications of audio response system.

Section 4.7–4.8

69. Name the different types of I/O ports.

70. Name at least one device each that can be connected to the serial port, parallel port, USB port, MIDI port and firewire.

71. Explain the working of the I/O system.

72. What is the purpose of ports, buses and controllers in the I/O system?

73. What is a device driver?

74. What is the use of the device driver?

75. Is device controller a hardware or software?

76. Is device driver a hardware or software?

Extra Questions

77. Give full form of the following abbreviations

    1. I/O

2. LED
3. CAD
4. ATM
5. MICR
6. OMR
7. OCR
8. dpi
9. cps
10. CAM
11. COM
12. CRT
13. LCD
14. VDT
15. USB
16. MIDI

78. Write short notes on

1. Input-iutput unit
2. Input Unit
3. Output unit
4. Keyboard
5. Mouse
6. Trackball
7. Joystick
8. Digitizing tablet
9. Light pen
10. Touch screen
11. Input devices
12. Audio input device
13. Video input device
14. Optical input devices
15. Scanner
16. MICR
17. OMR
18. OCR
19. Printer
20. Impact printers
21. Non-impact printers
22. Plotter
23. Computer output on microfilm
24. Monitor
25. Visual display terminal
26. Video output
27. Audio response
28. I/O ports

29. Working of the I/O system

79. Give differences between the following

1. Input unit and output unit
2. Physical mouse and Optical mouse
3. Pointing devices and Pick devices
4. Hand-held scanners and Flat-bed scanners
5. Impact printers and Non-Impact printers
6. Dot matrix printers and Daisy wheel printers
7. Ink-jet printers and Laser printers

DATA REPRESENTATION

QUESTIONS

Section 5.2–5.3.3

1. What is the significance of the base of the number?

2. Explain the significance of the face value and position value of a number. Give an example.

3. What is the position value of a digit?

4. The decimal number system is in base _____.

5. The binary number system is in base _____.

6. The octal number system is in base _____.

7. The hexadecimal number system is in base _____.

8. Give the valid digits in the number systems—(a) decimal, (b) binary, (c) octal, and (d) hexadecimal.

9. Write the largest digit in the number systems—(a) decimal, (b) binary, (c) octal, and (d) hexadecimal.

10. How many valid digits are there in the number systems—(a) decimal, (b) binary, (c) octal, and (d) hexadecimal?

11. Show the octal, binary and hexadecimal equivalent of the decimal number 11.

12. Convert the following decimal numbers into binary, octal and hexadecimal.

1. 24
2. 47
3. 675
4. 89
5. 34.24
6. 150.64
7. .98
8. .29
9. 24.14
10. 16.1
11. 22.33

Section 5.4

13. Convert the following binary numbers into decimal numbers.

1. 110000111
2. 110011
3. 1001111
4. 11000001
5. 1100110.1110
6. 11110.0000
7. 01001.0101
8. 1010.10101
9. 11000011.111
10. 11001.1101
11. 100.111
12. 101.0111

14. Convert the following octal numbers into decimal numbers.

1. 234
2. 36
3. 456
4. 217
5. 25.33

6. 65.34
7. 34.56
8. 267.12

15. Convert the following hexadecimal numbers into decimal numbers.

1. E16
2. 389
3. 2AB
4. FF
5. E4.16
6. 2A.1B
7. 23.89
8. AC.BD

Section 5.5

16. Convert the following binary into octal.

1. 1100011
2. 110011001100
3. 100111100
4. 110000011
5. 110011011
6. 1111000
7. 0010101
8. 101010101

17. Convert the following binary into hexadecimal.

1. 11000011111
2. 1100110011
3. 100111100
4. 1100000100
5. 11001101110
6. 111100000
7. 010010101
8. 101010101

Section 5.6

18. Convert the following octal into binary

1. 25
2. 65
3. 34

4. 267
5. 45
6. 71
7. 150
8. 111

19. Convert the following hexadecimal into binary.

1. A1
2. 2AB
3. 239
4. CCD
5. 45C
6. 71D
7. 150
8. AAA

Section 5.7

20. Perform binary addition on the following binary numbers.

1. 111100, 011011
2. 1001, 1111
3. 0110, 1100
4. 1100, 1010

21. Perform binary subtraction on the following binary numbers.

1. 111000, 011010
2. 1111, 1001
3. 0110, 0010
4. 1100, 1010

Section 5.7.1

22. Find 1's complement of the following binary numbers.

1. 11000011111
2. 1100110011
3. 100111100
4. 1100000100

23. Find 's complement of the following binary numbers.

1. 11000011111
2. 1100110011

3. 100111100
4. 1100000100

24. What is the relation between the 1's complement and 's complement of a binary number?

Section 5.8–5.8.2

25. In addition to the digits, a number may contain a _____ and _____.

26. What is a sign bit?

27. Which bit is considered as a sign bit when representing a number?

28. What is the value of sign bit for a positive number?

29. What is the value of sign bit for a negative number?

30. What is the range of data that can be represented using an 8–bit signed number?

31. What is the range of data that can be represented using an 8–bit unsigned number?

32. _____ representation and _____ representation are the two ways of representing the position of the binary point in the register.

33. Represent the following as 8–bit numbers in (a) Signed Magnitude representation, (b) Signed 1's complement representation, and (c) Signed 's complement representation

1. –22
2. –55
3. –34
4. –67

34. Represent the following as 8-bit numbers in Fixed Point number representation.

1. +22
2. +55
3. +34
4. +67

35. Perform binary addition of the following numbers.

1. (+7) + (–9)
2. (+3) + (+15)
3. (–12) + (+15)
4. (–14) + (+25)
5. (–7) + (–7)

6. (−9) + (−23)
7. (−2) + (+4)
8. (+34) + (−2)

36. Perform binary subtraction of the following numbers

1. (+7) − (−19)
2. (+13) − (+15)
3. (−12) − (+15)
4. (−14) − (+25)
5. (−7) − (−7)
6. (−9) − (−23)
7. (−2) − (+4)
8. (+34) − (−2)

37. Represent the following binary numbers in Floating Point number representation.

1. 1100.011
2. 110.001
3. 11.110
4. 1010.011

Section 5.9

38. Why are binary coding schemes needed?

39. List any four commonly used binary coding schemes.

40. What number of bits is used to represent the following codes—(a) EBCDIC, (b) ASCII-7, and (c) ASCII–8?

41. How many characters can be represented in the following codes—(a) EBCDIC, (b) ASCII-7, and (c) ASCII-8?

42. How is Unicode different from the other Binary coding schemes? (Hint: multilingual, no. of characters)

43. What is UTF-8 character encoding?

Section 5.10

44. Name the basic logic gates.

45. Draw the symbols of the following logic gates—(a) AND, (b) OR, (c) NOT, (d) NAND, (e) NOR, (f) XOR, and (g) XNOR.

46. Write the truth table of the following logic gates—(a) AND, (b) OR, (c) NOT, (d) NAND, (e) NOR, (f) XOR, and (g) XNOR.

47. Write the algebraic function of the following logic gates– (a) AND, (b) OR, (c) NOT, (d) NAND, (e) NOR, (f) XOR, and (g) XNOR.

Extra Questions

48. Give full form of the following abbreviations

1. EBCDIC
2. MSB
3. UTF
4. ASCII

49. Write short notes on

1. Decimal Number System
2. Binary Number System
3. Octal Number System
4. Hexadecimal Number System
5. Binary arithmetic operations
6. 1's complement of Binary number
7. 2's complement of Binary number
8. Fixed Point Number Representation
9. Floating Point Number Representation
10. Addition of signed binary numbers
11. Subtraction of signed binary numbers
12. Binary Coding schemes
13. Logic Gates
14. ASCII coding scheme
15. EBCDIC coding scheme
16. Unicode character encoding

50. Give differences between the following

1. 1's complement and 2's complement of Binary number
2. ASCII coding scheme and EBCDIC coding scheme
3. Decimal Number System and Binary Number System
4. Octal Number System and Hexadecimal Number System
5. Fixed Point Number Representation and Floating Point Number Representation

ANSWERS

12.

1. $(24)_{10} = (11000)_2 = (30)_8 = (18)_{16}$
2. $(47)_{10} = (101111)_2 = (57)_8 = (2F)_{16}$
3. $(675)_{10} = (1010100011)_2 = (1243)_8 = (2A3)_{16}$
4. $(89)_{10} = (10110001)_2 = (131)_8 = (59)_{16}$
5. $(34.24)_{10} = (100010.00111)_2 = (42.1727)_8 = (22.3D7100)_{16}$
6. $(150.64)_{10} = (10010110.1010)_2 = (226.5075)8 = (96.A70A)_{16}$
7. $(.98)_{10} = (.1111)_2 = (.7656)_8 = (FAE1)_{16}$
8. $(.29)_{10} = (.0100)_2 = (.2243)_8 = (.4A3D)_{16}$
9. $(24.14)_{10} = (11000.0010)_2 = (30.1075)_8 = (18.231D)_{16}$
10. $(16.1)_{10} = (10000.0001)_2 = (20.063)_8 = (10.199)_{16}$
11. $(22.33)_{10} = (10110.0101)_2 = (26.250)_8 = (16.547)_{16}$
12. $(24.14)_{10} = (11000.0010)_2 = (30.1075)_8 = (18.231D)_{16}$

13.

1. $(110000111)_2 = (391)_{10}$
2. $(110011)_2 = (51)_{10}$
3. $(1001111)_2 = (79)_{10}$
4. $(11000001)_2 = (193)_{10}$
5. $(1100110.1110)_2 = (102.087)_{10}$
6. $(11110.0000)_2 = (30.0)_{10}$
7. $(01001.0101)_2 = (9.312)_{10}$
8. $(1010.10101)_2 = (10.65)_{10}$
9. $(11000011.111)_2 = (195.875)_{10}$
10. $(11001.1101)_2 = (25.8125)_{10}$
11. $(100.111)_2 = (4.875)_{10}$
12. $(101.0111)_2 = (5.4375)_{10}$

14.

1. $(234)_8 = (156)_{10}$
2. $(36)_8 = (30)_{10}$
3. $(456)_8 = (302)_{10}$
4. $(217)_8 = (143)_{10}$
5. $(25.33)_8 = (21.4218)_{10}$
6. $(65.34)_8 = (53.4375)_{10}$
7. $(34.56)_8 = (28.7187)_{10}$
8. $(267.12)_8 = (183.1562)_{10}$

15.

1. $(E16)_{16} = (3606)_{10}$
2. $(389)_{16} = (905)_{10}$
3. $(2AB)_{16} = (683)_{10}$
4. $(FF)_{16} = (255)_{10}$
5. $(E4.16)_{16} = (228.0859)_{10}$

6. $(2A.1B)_{16} = (42.1054)_{10}$
7. $(23.89)_{16} = (35.5351)_{10}$
8. $(AC.BD)_{16} = (172.7382)_{10}$

16.

1. $(1100011)_2 = (143)_8$
2. $(110011001100)_2 = (6314)_8$
3. $(100111100)_2 = (474)_8$
4. $(110000011)_2 = (603)_8$
5. $(110011011)_2 = (633)_8$
6. $(1111000)_2 = (170)_8$
7. $(0010101)_2 = (025)_8$
8. $(101010101)_2 = (525)_8$

17.

1. $(11000011111)_2 = (61F)_{16}$
2. $(1100110011)_2 = (333)_{16}$
3. $(100111100)_2 = (13C)_{16}$
4. $(1100000100)_2 = (304)_{16}$
5. $(11001101110)_2 = (66E)_{16}$
6. $(111100000)_2 = (1E0)_{16}$
7. $(010010101)_2 = (095)_{16}$
8. (101010101)2 = (155) 16

18.

1. $(25)_8 = (010101)_2$
2. $(65)_8 = (110101)_2$
3. $(34)_8 = (011100)_2$
4. $(267)_8 = (010110111)_2$
5. $(45)_8 = (100101)_2$
6. $(71)_8 = (111001)_2$
7. $(150)_8 = (001101000)_2$
8. $(111)_8 = (001001001)_2$

19.

1. $(A1)_{16}= (10100001)_2$
2. $(2AB)_{16}= (001010101011)_2$
3. $(239)_{16} = (001000111001)_2$
4. $(CCD)_{16}= (110011001101)_2$
5. $(45C)_{16} = (010001011100)_2$
6. $(71D)_{16} = (011100011101)_2$
7. $(150)_{16} = (000101010000)_2$

8. $(AAA)_{16} = (101010101010)_2$

20.

1. 1919111
2. 11000
3. 10010
4. 10110

21.

1. 11110
2. 0110
3. 0100
4. 0010

22.

1. 00111100000
2. 0011001100
3. 011000011
4. 0011111011

23

1. 00111100001
2. 0011001101
3. 011000100
4. 0011111100

33(a)

1. 10010110
2. 10110111
3. 10100010
4. 11000011

33(b)

1. 01101001
2. 01001000
3. 01011101
4. 00111100

33(c)

1. 01101010
2. 01001001
3. 01011110
4. 00111101

34.

1. 00010110
2. 00110111
3. 00100010
4. 01000011

35.

1. $-2 = (11111110)_2$
2. $+18 = (00010010)_2$
3. $+3= (00000011)_2$
4. $+11 = (00001011)_2$
5. $-14 = (11110010)_2$
6. $-32 = (11100000)_2$
7. $+2 = (00000010)_2$
8. $+32 = (00100000)_2$

36.

1. $+26 = (00011010)_2$
2. $-2 = (11111110)_2$
3. $-27 = (11100101)_2$
4. $-39 = (11011001)_2$
5. $0 = (00000000)_2$
6. $+14 = (00001110)_2$
7. $-6 = (11111010)_2$
8. $+36 = (00100100)_2$

37.

1. $.1100011x2^{+4}$
2. $.110001x2^{+3}$
3. $.11110x2^{+2}$
4. $.1010011x2^{+4}$

Character device driver	Loader	Spreadsheet software
Compiler	Low-level language	System profiling
Cryptographic utility	Machine language	System software
Data compression utility	Network managers	System utility
Demo software	Object code	Translator software
Device driver	OEM software	Web browser software
Disk cleaners	Open-source software	Word processing
Disk compression	Operating system	software
Disk partitioning	Plug and play devices	
Executable code	Presentation Software	

QUESTIONS

Section 6.1–6.3

1. _____ and _____ are the two main categories of software.

2. What is the purpose of system software?

3. What is system software?

4. Give two examples of system software.

5. Describe the two categories of system software.

Section 6.3.1–6.3.3

6. What is the need of an operating system?

7. Describe the functions of an operating system.

8. "OS controls and coordinates the use of hardware among the different application software and the users". Explain.

9. Name any three operating systems.

10. Define a device driver.

11. What are plug and play devices?

12. Give an example of a plug and play device.

13. Where is the device driver of the plug and play device located on the computer?

14. What is the purpose of a device driver?

15. What are character device driver and block device driver?

16. Give an example of a character device driver.

17. Give an example of a block device driver.

18. What are the uses of system utilities?

19. List any five system utilities and also list the purpose of each.

20. Explain the purpose of the following system utilities in one line—(i) Anti-virus, (ii) Data compression, (iii) Cryptographic, (iv) Disk compression, (v) Disk partitioning, (vi) Disk cleaners, (vii) Backup utility, (viii) System Profiling utility, (ix) Network managers.

Section 6.3.4–6.3.4.4

21. Why are programming languages used?

22. What is the need for programming languages?

23. Name the three categories of programming languages.

24. What are low-level languages?

25. Define source code?

26. Define object code?

27. Machine language is hardware dependent—True or False.

28. List the key features of machine language.

29. List the key features of assembly language.

30. List the key features of high-level languages.

31. Why is it difficult to write a program in machine language?

32. State three features of the program written in machine language?

33. Why is it easier to write a program in high-level language than the assembly language?

34. Classify the programming languages based on their generations?

35. COBOL and C are _____ generation languages.

36. Name two high-level languages.

Section 6.3.5–6.3.7

37. What is the purpose of an assembler?

38. What is an executable code?

39. What is the purpose of a compiler?

40. How does an interpreter work?

41. Name two high-level languages that use compiler for translation.

42. Name two high-level languages that use interpreter for translation.

43. What is the purpose of linker?

44. What is the purpose of loader?

45. Draw the cycle from the writing of the program in a high-level language to its execution.

Section 6.4

46. Define a software package.

47. What is the use of application software?

48. Explain the purpose of the following application software in one line—(i) Word processing software, (ii) Image processing software, (iii) Accounting software, (iv)Spreadsheet software, (v) Presentation software, (vi) Web browser software, and (vii) Geographical Information Systems.

49. Give an example each of the following application software—(i) Word processing software, (ii) Image processing software, (iii) Accounting software, (iv) Spreadsheet software, (v) Presentation software, (vi) Web browser software, and (vii) Geographical Information Systems.

50. What are the different ways of acquiring software?

Extra Questions

51. Give full form of the following abbreviations

1. OS
2. MS-DOS

52. Write short notes on:

1. System software
2. Operating System
3. Device driver
4. System utilities
5. Programming Language
6. Machine language
7. Assembly language
8. High-level languages
9. Generation ofProgramming Languages
10. Translator software
11. Assembler
12. Compiler
13. Interpreter
14. Linker and Loader
15. Application Software

53. Give differences between the following:

1. System Software and Application Software
2. Machine language and Assembly language
3. Assembly language and High-level languages
4. Assembler and Compiler
5. Compiler and Interpreter
6. Linker and Loader

OPERATING SYSTEM

QUESTIONS

Section 7.1–7.3

1. Explain the objective of OS.

2. "OS makes it convenient for the user to use the machine". Explain.

3. "OS supervises and manages the hardware of the computer". Explain.

4. Name any three operating systems.

5. Classify the OS into different types based on their processing capability.

6. What is Single user and Single Task OS?

7. What is Single user and Multitasking OS?

8. What is time sharing?

9. What is a Multiuser OS?

10. What is a Multiprocessing OS.

11. Define parallel processing.

12. What is the purpose of Real time OS?

13. What is the purpose of Embedded OS?

14. Give an example each of the following types of OS (i) Single user and Single Task, (ii) Single user and Multitasking, (iii) Multiuser, (iv) Multiprocessing, and (v) Real time.

Section 7.4

15. List the main function of the OS.

16. Describe in detail the main functions of the OS.

17. List the activities handled by each of the following functions of the OS (i) Process Management, (ii) Memory Management, (iii) File Management, (iv) Device Management, (v) Protection and Security, and (vi) User Interface.

Section 7.5–7.5.4

18. Define a process.

19. List the various states for a process in execution.

20. Why is CPU scheduling needed?

21. Define scheduler.

22. Define pre-emptive scheduling and non-pre- emptive scheduling.

23. List the CPU scheduling algorithms.

24. Explain the working of (i) FCFS, (ii) SJF, and (iii) RR scheduling algorithms.

25. What is the drawback of FCFS algorithm?

26. What is the drawback of SJF algorithm?

27. How does RR algorithm overcome the drawback of FCFS and SJF?

28. Define concurrent processes.

29. When does a race condition occur?

30. Define a deadlock.

31. List the necessary conditions for a deadlock.

32. Deadlock can be handled by deadlock _____ and deadlock _____.

33. What is deadlock avoidance?

34. What is deadlock prevention?

35. Explain the following in context of the deadlock: (i) Mutual Exclusion, (ii) No preemption, (iii) Hold and Wait, and (iv) Circular wait.

Section 7.6–7.6.2

36. What is the need of memory management?

37. Describe the multiple partition allocation memory management scheme.

38. Define a hole.

39. _____, _____ and _____ are the three hole allocation strategies.

40. Explain the three hole allocation strategies.

41. Define memory fragmentation.

42. How is memory fragmentation handled?

43. Describe the paging memory management scheme.

44. What is the use of a page table?

45. “Paging handles the problem of fragmentation”. Explain.

46. Describe demand paging in brief.

47. Define swapping.

Section 7.7–7.8

48. Describe a file.

49. What is the purpose of directory structure?

50. Define a system call.

51. _____is a commonly used structure for the directory.

52. What is the need of device management?

53. What is the purpose of a device driver?

54. Define buffering.

55. Why is buffering needed?

56. Define spooling.

57. Name a spooled device.

58. What is the purpose of spooling?

Section 7.9

59. How is protection different from security?

60. Name few techniques used for ensuring security of a stand-alone computer.

61. List the two kinds of user interfaces.

62. Give one example each of OS using CLI and GUI interfaces.

63. What do you mean by a CLI interface?

64. What do you mean by a GUI interface?

65. Write short note on MS-DOS, Windows family of OS, and Linux OS.

66. Describe briefly, the history of the Windows OS.

Extra Questions

67. Give full form of the following abbreviations:

1. MS-DOS
2. FCFS
3. SJF
4. RR
5. CLI
6. GUI
7. GNOME
8. KDE
9. SPOOL

68. Write short notes on:

1. Objectives of OS
2. Types of OS
3. Functions of OS
4. Process Management
5. Process
6. CPU Scheduling
7. Scheduling algorithms
8. Process Synchronization

9. Deadlock
10. Memory Management
11. Memory allocation
12. Memory Fragmentation
13. Paging
14. Demand paging
15. File Management
16. Device Management
17. Device drivers
18. Protection and Security
19. User Interface
20. MS-DOS
21. Windows family of OS
22. Linux OS

69. Give differences between the following:

1. Multitasking and Multiprocessing
2. Program and Process
3. Pre-emptive scheduling and Non-pre-emptive scheduling
4. FCFS and SJF
5. RR and FCFS
6. Best fit and worst fit memory allocation
7. CLI and GUI

UNIT 8 : NETWORK

QUESTIONS

Section 9.1–9.3.6

1. Explain the importance of networking.

2. "Networking allows sharing of information and resources". Explain.

3. What do you mean by guided and unguided transmission media?

4. Name two guided transmission media.

5. Name an unguided transmission media.

6. Optical wire is a guided media. True or False.

7. _____ and _____ are the two kinds of twisted pair.

8. Cat-5 cable is a _____ twisted pair.

9. How is coaxial cable different from a twisted pair cable?

10. What are the features of a twisted pair cable?

11. What are the features of a coaxial cable?

12. List the advantages and disadvantages of optical wire over a copper wire.

13. Optical fiber transmits data as _____ signals.

14. Coaxial cables transmit data as _____ signals.

15. What are the features of an optical fiber?

16. Describe the following unguided transmission media—(i) RF transmission, (2) Microwave transmission, and (iii) Satellite transmission.

17. What are geosynchronous satellites?

Section 9.4–9.4.2

18. Define: (1) Simplex transmission, (2) Half-duplex transmission, and (3) Full-duplex transmission.

19. Define bandwidth.

20. Define throughput.

21. What is the unit of measuring bandwidth?

22. What is the unit of measuring throughput?

23. What do you mean by broadband technology?

24. ”The bandwidth or the throughput is affected by the distance between the connected computers”. Explain

25. Define attenuation.

26. Define distortion.

Section 9.4.3–9.4.3.4

27. Define a signal.

28. Which is better to use for data transmission—analog signal or digital signal? Why.

29. What is a carrier wave?

30. Why is modulation needed?

31. Explain modulation and demodulation.

32. What is the purpose of a modem?

33. Name the three kinds of modulation.

34. Define multiplexing and demultiplexing.

35. _____ and _____ are the basic multiplexing techniques.

36. What is the difference between the FDM and WDM multiplexing techniques?

37. Define synchronous and asynchronous transmission.

38. Give an example each of synchronous and asynchronous transmission.

Section 9.5

39. Name the three kinds of switching techniques.

40. Describe briefly the circuit switching and message switching techniques.

41. Define a packet.

42. Which switching technique is most commonly used in computer networks? Why?

43. Explain the working of the packet switching technique.

Section 9.6–9.6.3

44. Define computer network.

45. Name the three types of networks classified on the basis of their size.

46. What do you mean by transmission technology?

47. What do you mean by network topology?

48. Describe briefly the LAN, MAN, and WAN transmission technologies.

49. Name three LAN topologies.

50. List the features of the following LAN topologies—(i) Bus, (ii) Star, and (iii) Ring.

51. Name the protocol(s) used to implement bus, ring and star technologies.

52. List the advantages and disadvantages of each of the LAN technology–Bus, Star, and Ring.

53. What is the need of communication protocol?

54. List the seven layers of the OSI model protocol, in order.

55. How does the OSI seven layer protocol work?

56. Describe briefly the function of each layer of the OSI model.

Section 9.6.4–9.6.4.7

57. Define a concentrator.

58. Name three network connecting devices.

59. What is the purpose of the Network Interface Card?

60. Describe the features of —(i) repeater, (ii) hub, (iii) switch, (iv) bridge, (v) router, and (vi) gateway.

61. Name a device used for connecting two LANs.

62. Name a device used for connecting computers in a LAN.

63. Name a device for connecting two WANs.

64. What is the purpose of a gateway?

65. Name a connecting device, each, that works at (i) physical layer, (ii) data link layer, and (iii) network layer.

Section 9.7

66. How is wireless networking different from wired networking.

67. Explain briefly how the wireless network works.

68. What is the use of Bluetooth technology?

69. _____ is a standard for wireless LAN.

70. What is the use of wireless LAN and wireless WAN.

Extra Questions

71. Give full form of the following abbreviations:

1. STP
2. UTP

3. RF
4. Hz
5. bps
6. cps
7. FDM
8. WDM
9. LAN
10. MAN
11. WAN
12. ISO
13. OSI
14. NIC
15. MAC
16. PSTN
17. FDDI

72. Write short notes on:

1. Importance of Networking
2. Data transmission guided media
3. Data transmission unguided media
4. Twisted Pair
5. Coaxial cable
6. Optical Fiber
7. Modulation and Demodulation
8. Multiplexing
9. Packet switching
10. Network Types
11. LAN topology
12. Bus topology
13. Ring topology
14. Star topology
15. OSI model
16. NIC
17. Hub
18. Repeater
19. Bridge
20. Switch
21. Router
22. Wireless networking

73. Give differences between the following:

1. Guided media and Unguided media
2. STP and UTP
3. Optical fibers and copper wires
4. Bandwidth and Throughput
5. Modulation and Demodulation

6. Multiplexing and Demultiplexing
7. Asynchronous and Synchronous Transmission
8. Message switching and Packet switching
9. Bus, Ring and Star LAN topologies
10. Repeater and Bridge
11. Hub and Switch
12. Router and Bridge

UNIT 9 : INETRNET BASICS

QUESTIONS

Section 10.1–10.3

1. Define: (1) Internet, (2) Protocol, and (3) WWW.

2. Describe the history of the Internet.

3. _____ is the protocol for the Internet.

4. Name the scientist who created WWW.

5. The Mosaic browser was developed by _____.

6. Name the first web browser.

7. What is the difference between the Internet and WWW? Explain in one or two sentences.

8. Name the two parts of the Internet protocol.

9. What is the function of TCP in the TCP/IP protocol?

10. What is the function of IP in TCP/IP protocol?

11. Name the technique used by TCP to send messages over the Internet?

12. Describe the packet switching technique?

13. What is the purpose of sequencing information in a packet sent by TCP over the Internet?

14. What is the purpose of error control information in a packet sent by TCP over the Internet?

Section 10.4–10.6

15. Give a brief description of the architecture of the Internet.

16. Define a router.

17. What is the purpose of Network Access Point (NAP)?

18. Who is the owner of the Internet?

19. Name some organizations that manage the Internet.

20. is the organization responsible for domain name registration.

21. Name the governing body of the Internet that is responsible for development of technologies for WWW?

22. What are the basic requirements to connect to the Internet?

23. Define: (1) Modem, and (2) NIC.

Section 10.7

24. Define bandwidth.

25. Name two high speed Internet connections.

26. How does a Dial-up access method for the Internet connection work?

27. List the features of the Dial-up access method for the Internet connection.

28. What kind of users should preferably use the leased line Internet connection?

29. What is the purpose of the gateway in the leased line Internet connection?

30. How does a leased line Internet connection work?

31. List the features of the leased line Internet connection.

32. List the features of the ISDN Internet connection.

33. How does a DSL Internet connection work?

34. Define ADSL.

35. What is the difference between DSL and ADSL?

36. Which is faster—DSL or Dial-up access?

37. List the features of the cable modem Internet connection.

38. Name two broadband Internet connections.

39. How is the cable modem different from DSL connection?

Section 10.8

40. What is the need of the IP address?

41. What does an IP address look like? Give an example.

42. What is the range of numbers used to write an IP address?

43. What is the need of a domain name?

44. Name five top-level domains.

45. Give two examples of domain names.

46. What is the purpose of the DNS server?

47. Explain the parts of the following domain names:

1. yahoo.com
2. du.ac.in (du-delhi university)

Section 10.9–10.9.1

48. Name any five services provided by the Internet.

49. What is the significance of the name World Wide Web?

50. Name the format used to create document on the web.

51. Name the language used to create a hypertext document.

52. What is the use of hyperlink?

53. Name the protocol used to transfer web pages on the Internet.

54. How is uploading different from downloading?

55. Differentiate between homepage and web page.

56. What is the function of web server?

57. What is the use of web browser?

58. How is a web portal different from a web site?

59. What is a web portal?

Section 10.9.1.1–10.9.1.4

60. Define—web browser.

61. Name two web browsers.

62. What is the difference between graphical web browser and text-based browser?

63. Give one example each of graphical web browser and text-based browser.

64. Define browsing.

65. What is the purpose of URL?

66. Explain the syntax of URL?

67. Explain the parts of the following URL:http://www. niit.com/mainpage

68. How is URL different from domain name?

69. Why is there a need of Internet search engine?

70. Give examples of two Internet search engines.

71. How is a search engine different from a metasearch engine?

72. What will be searched if the following strings are entered while searching on Internet Search Engine?

1. software engineering
2. “are engineering”
3. soft*
4. software + engineering
5. software or enginee

73. Name two programming languages used to design and develop the web pages.

74. Write a short note on DHTML.

75. Why are scripting languages needed during the web development?

76. Name two programming languages, each, used for implementing client side and server side interactivity.

Section 10.9.2

77. List four features of e-mail?

78. Explain the syntax of e-mail address with example.

79. What is the difference between Cc and Bcc in an e-mail header?

80. Differentiate between application based e-mail and web based e-mail?

81. Explain the working of e-mail.

82. What information is stored in the e-mail header?

83. Name the TCP/IP port numbers at which computers connect to the following servers: (i) SMTP, (ii) POP3, and (iii) IMAP

84. What is the significance of the SMTP, POP3, and IMAP servers in context of the e-mail?

Section 10.9.3

85. When do you use FTP?

86. List the goals of FTP.

87. Explain the working of the FTP client-server.

88. When is anonymous login used in FTP?

89. What is the purpose of the following commands in FTP: (i) get filename, (ii) mget filename, (iii) put filename, and (iv) mput filename?

90. What is the use of telnet?

91. How is FTP different from telnet?

92. What is the purpose of news service on the Internet?

93. What is the use of IRC?

94. How is chat different from e-mail?

95. List some uses of the Internet.

Extra Questions

96. Give full form of the following abbreviations:

1. DARPA
2. TCP/IP
3. NSF
4. WWW
5. ISP
6. NAP
7. isoc
8. iab
9. ietf
10. IESG
11. IRTF
12. IANA
13. InterNIC
14. W3C
15. NIC
16. DSL
17. ISDN
18. ADSL
19. DNS
20. HTML
21. HTTP
22. URL
23. GUI
24. DHTML
25. XML
26. DOM

27. Perl
28. PHP
29. JSP
30. ASP
31. CGI
32. E-mail
33. POP3
34. SMTP
35. IMAP
36. FTP
37. Telnet
38. IRC

97. Write short notes on:

1. History of Internet
2. TCP/IP
3. Internet Architecture
4. Internet Connections
5. DSL
6. Domain name
7. WWW
8. Web Browser
9. URL
10. Internet Search Engines
11. WWW Development
12. E-mail Languages
13. Working of e-mail
14. FTP
15. Telnet
16. Uses of Internet

98. Give differences between the following:

1. Web site and Web portal
2. Graphical browser and Text-based browser
3. Application based e-mail and Web based e-mail
4. Telnet and FTP
5. E-mail and Chat
6. DSL and Cable modem

UNIT 10: INFORMATION SYSTEMS

QUESTIONS

Section 11.2–11.4

1. Define: (1) Data (2) Information, and (3) Knowledge.

2. Explain the difference between data, information and knowledge with an example.

3. List the characteristics of the information.

4. Explain the characteristic features of information in detail.

5. Define a system.

6. Define an Information System.

7. List the components of an Information System.

8. Explain the components of an Information System.

9. List the characteristics of an Information System.

10. Explain the characteristics of an Information System.

11. What do you mean by the performance of the information system?

12. Define the efficiency of the information system.

13. Define the effectiveness of the information system.

Section 11.5–11.6

14. List the components of a CBIS.

15. Explain the components of a CBIS in detail.

16. What are the significances of telecommunication, network and Internet in the IS?

17. What is the need for an efficient information system?

18. How does use of information system provide a competitive advantage to an organization?

19. How does information system help the organizations having operations in different countries?

Section 11.7–11.8.2

20. List the different categories of information system.

21. List an IS, each, for low level, middle level and top level management in an organization.

22. What is a TPS?

23. List the features of a TPS.

24. What is an office automation system?

25. List the features of an office automation system.

26. Name three tools used for the automation of the tasks in an office automation system.

Section 11.9

27. What is a MIS?

28. List the features of a MIS.

29. Name the different kinds of reports generated in MIS.

30. Define summary report, exception report and detailed report generated in MIS.

31. What are scheduled reports?

32. What are ad-hoc reports?

33. What is a DSS?

34. List the features of a DSS.

35. How does DSS facilitate the decision making process.

36. What is an EIS?

37. List the features of an EIS.

Section 11.10

38. Define an Artificial Intelligence (AI) system

39. Define an expert system.

40. What is the relation between AI systems and expert systems?

41. Name three applications of the expert system.

42. What is an ERP?

43. List the features of an ERP.

44. What is e-commerce?

45. List the features of e-commerce system.

46. What is on-line shopping?

Section 11.11

47. List the different career opportunities in information systems.

48. What is the role of CIO in information system?

49. What is the role of LAN administrators in information system?

50. What are the roles of system and network operators in information system?

51. What are the roles of system analysts and programmers in information system?

Extra Questions

52. Give full form of the following abbreviations:

1. IS
2. CBIS
3. IT
4. TPS
5. OAS
6. MIS
7. DSS
8. EIS
9. ERP
10. E-commerce
11. AI
12. CIO
13. SAP

53. Write short notes on:

1. Characteristics of information
2. Components of IS
3. Characteristics of IS
4. Components of CBIS
5. Careers in Information Systems
6. Transaction Processing System (TPS)
7. Management Information System (MIS)
8. Office Automation System (OAS)
9. Decision Support System (DSS)
10. Executive Information System (EIS)
11. Expert System
12. Enterprise Resource Planning (ERP)
13. E-commerce system

54. Give differences between the following:

1. Data, Information and Knowledge
2. Operations Support System and Management Support System
3. Transaction Processing System and Management Information System
4. Decision Support System and Executive Information System

UNIT 11 : SECURITY

QUESTIONS

Section 14.2

1. What do you understand by the term Computer security?

2. Define: (i) Security attack, (ii) Security mechanism, and (iii) Security service.

3. Define: (i) Security threat, (ii) Vulnerability, (iii) Passive attack, and (iv) Active attack.

4. A security attack may be a _____ attack or a _____attack.

5. What are the targets of the security attack?

6. List some security attacks that can be made on the users of the computer.

7. List some security attacks that can be made on the computer hardware.

8. What kind of attacks can be made on the computer software?

Section 14.3

9. What is malicious software?

10. Give three examples of malicious programs.

11. List some properties of virus.

12. How can virus harm the computer?

13. Give an example of virus program.

14. Define a worm.

15. Give an example of a worm program.

16. What are Trojan horses?

17. Why is it advisable to keep the active control disabled on your computer?

Section 14.4

18. Define hacking.

19. What is a Denial of Service attack?

20. _____, _____and_____are the methods used to get the username and password of the system to gain unauthorized access to the system.

21. What do you mean by packet sniffing?

22. Name one packet sniffer software.

23. How does a password cracker work?

24. How is e-mail hacked?

Section 14.6

25. Security services ensure_____, _____ _____and _____of the data.

26. Define (i) Confidentiality, (ii) Integrity, (iii) Authentication, and (iv) Non-Repudiation.

27. _____is used for ensuring confidentiality.

28. Name any two methods that are used for authentication.

29. Non-repudiation deals with_____.

30. List three technologies used for implementing the security mechanisms.

Section 14.7

31. Define cryptography.

32. Define (i) Plain text, (ii) Cipher, (iii) Cipher text, (iv) Encryption, and (v) Decryption.

33. Define a key.

34. What is the significance of key in cryptography?

35. Name the three cryptographic schemes.

36. Why secret key cryptography is also called symmetric encryption?

37. Explain the working of Secret key cryptography.

38. What is the difference between a stream cipher and block cipher?

39. Name a secret key cryptography algorithm.

40. In public key cryptography, how is the public key different from the private key?

41. Why public key cryptography is also called asymmetric encryption?

42. Name a public key cryptography algorithm.

43. _____algorithm is used to provide digital signature.

44. What is the purpose of hash function?

45. Name a hash algorithm.

46. What is the function of Certification Authorities (CA)?

Section 14.8

47. What is the use of digital signature?

48. Is digital signature scheme a symmetric cryptography or asymmetric cryptography?

49. Name the three algorithms included in a digital signature scheme.

50. Explain the digital signature creation and verification using hash function.

51. Signer authentication, Message authentication, and Efficiency are three effects accomplished by digital signature. Explain.

Section 14.9

52. What is the purpose of firewall?

53. List the functions of firewall.

54. Explain the working of firewall.

55. Define: (i) Gateway, (ii) Proxy Server, and (iii) Screening Routers.

56. Name the three types of firewall.

57. How does the Packet filter Firewall work?

58. How does the Circuit Filter Firewall work?

59. How does the Application-level Gateway work?

Section 14.10—14.11

60. What is the difference between user identification and user authentication?

61. Name three authentication mechanisms.

62. Explain user identification and authentication.

63. What is the need of user authentication?

64. List some steps to make the password safe.

65. What is a smart card?

66. Name three areas where smart card is commonly used.

67. How does biometric technique help in user authentication?

68. What is the purpose of intrusion detection system?

69. What is the need of installing virus protection software on your computer?

70. What is the need of taking regular data and information backups?

71. How is HTTPS different from HTTP?

72. IPv6 protocol includes network security. Explain.

Section 14.12

73. What is the need of spreading security awareness?

74. What is a security policy?

75. What is the need of a security plan?

76. List the steps followed in formulating the security policy.

77. Explain in detail the formulation of security policy.

78. What IT resources need to be made secure in an organization?

79. What is the purpose of proactive security strategy?

80. What is the purpose of reactive security strategy?

Extra Questions

81. Give full form of the following abbreviations:

1. DoS
2. SKC
3. PKC
4. DES
5. AES
6. DSA
7. sha
8. ca
9. nat
10. SSL
11. IPsec

82. Write short notes on:

1. Security attack
2. Malicious software
3. Viruses
4. Trojan horse
5. Worms
6. Hacking
7. Security services
8. Cryptography
9. Secret key cryptography
10. Public-key cryptography
11. Digital signature
12. Firewall
13. Types of firewall
14. User identification and authentication
15. User authentication mechanisms
16. User name and Password
17. Security awareness
18. Security Policy
19. Formulating a security policy

83. Give differences between the following:

1. Passive security attack and Active security attack
2. Viruses and Worms
3. Malicious software and Hacking
4. Secret Key Cryptography and Public-Key Cryptography
5. Packet filter firewall and Circuit Filter firewall
6. Users identification and User authentication
7. Proactive Security Strategy and Reactive Security Strategy