

Fundamental of computer sciences

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Sections

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3. Data Storage
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Exam A

QUESTION 1

The _____ model is the basis for today's computers.

- A. Leibnitz
- B. von Neumann
- C. Pascal
- D. Charles Babbage

Answer: B

Section: Introduction

Explanation/Reference:

QUESTION 2

In a computer, the _____ subsystem stores data and programs.

- A. ALU
- B. input/output
- C. memory
- D. control unit

Answer: C

Section: Introduction

Explanation/Reference:

QUESTION 3

In a computer, the _____ subsystem performs calculations and logical operations.

- A. ALU
- B. input/output
- C. memory
- D. control unit

Answer: A

Section: Introduction

Explanation/Reference:

QUESTION 4

In a computer, the _____ subsystem accepts data and programs and sends processing results to output devices.

- A. ALU
- B. input/output
- C. memory

D. control unit

Answer: B

Section: Introduction

Explanation/Reference:

QUESTION 5

In a computer, the _____ subsystem serves as a manager of the other subsystems.

- A. ALU
- B. input/output
- C. memory
- D. control unit

Answer: D

Section: Introduction

Explanation/Reference:

QUESTION 6

According to the von Neumann model, _____ are stored in memory.

- A. only data
- B. only programs
- C. data and programs
- D. neither data nor programs

Answer: C

Section: Introduction

Explanation/Reference:

QUESTION 7

A step-by-step solution to a problem is called _____.

- A. hardware
- B. an operating system
- C. a computer language
- D. an algorithm

Answer: D

Section: Introduction

Explanation/Reference:

QUESTION 8

FORTRAN and COBOL are examples of _____.

- A. hardware
- B. operating systems
- C. computer languages
- D. algorithms

Answer: C

Section: Introduction

Explanation/Reference:

QUESTION 9

A 17th-century computing machine that could perform addition and subtraction was the _____.

- A. Pascaline
- B. Jacquard loom
- C. Analytical Engine
- D. Babbage machine

Answer: A

Section: Introduction

Explanation/Reference:

QUESTION 10

_____ is a set of instructions in a computer language that tells the computer what to do with data.

- A. An operating system
- B. An algorithm
- C. A data processor
- D. A program

Answer: D

Section: Introduction

Explanation/Reference:

QUESTION 11

_____ is the design and writing of a program in structured form.

- A. Software engineering
- B. Hardware engineering
- C. Algorithm development
- D. Instructional architecture

Answer: A

Section: Introduction

Explanation/Reference:

QUESTION 12

The first electronic special-purpose computer was called _____.

- A. Pascal
- B. Pascaline
- C. ABC
- D. ENIAC

Answer: C

Section: Introduction

Explanation/Reference:

QUESTION 13

One of the first computers based on the von Neumann model was called _____.

- A. Pascal
- B. Pascaline
- C. ABC
- D. EDVAC

Answer: D

Section: Introduction

Explanation/Reference:

QUESTION 14

The first computing machine to use the idea of storage and programming was called _____.

- A. the Madeline
- B. EDVAC
- C. the Babbage machine
- D. the Jacquard loom

Answer: D

Section: Introduction

Explanation/Reference:

QUESTION 15

_____ separated the programming task from computer operation tasks.

- A. Algorithms
- B. Data processors
- C. High-level programming languages
- D. Operating systems

Answer: C

Section: Introduction

Explanation/Reference:

Exam B

QUESTION 1

The base of the decimal number system is ____.

- A. 2
- B. 8
- C. 10
- D. 16

Answer: C

Section: Number Systems

Explanation/Reference:

QUESTION 2

The base of the binary number system is ____.

- A. 2
- B. 8
- C. 10
- D. 16

Answer: A

Section: Number Systems

Explanation/Reference:

QUESTION 3

The base of the octal number system is ____.

- A. 2
- B. 8
- C. 10
- D. 16

Answer: B

Section: Number Systems

Explanation/Reference:

QUESTION 4

The base of the hexadecimal number system is ____.

- A. 2
- B. 8
- C. 10

D. 16

Answer: D

Section: Number Systems

Explanation/Reference:

QUESTION 5

When converting a decimal integer to base b, we repeatedly _____ b.

- A. divide by
- B. multiply by
- C. add to
- D. subtract from

Answer: A

Section: Number Systems

Explanation/Reference:

QUESTION 6

When converting a decimal fraction to base b, we repeatedly _____ b.

- A. divide by
- B. multiply by
- C. add to
- D. subtract from

Answer: B

Section: Number Systems

Explanation/Reference:

QUESTION 7

Which of the following representations is erroneous?

- A. Binary: 10111
- B. Octal: 349
- C. Hexa: 3AB
- D. Decimal: 256

Answer: B

Section: Number Systems

Explanation/Reference:

QUESTION 8

Which of the following representations is erroneous?

- A. Binary: 10211
- B. Octal: 342
- C. Hexa: EEE
- D. Decimal: 145

Answer: A

Section: Number Systems

Explanation/Reference:

QUESTION 9

Which of the following representations is erroneous?

- A. Binary: 111
- B. Octal: 346
- C. Hexa: EEG
- D. Decimal: 221

Answer: C

Section: Number Systems

Explanation/Reference:

QUESTION 10

Which of the following representations is erroneous?

- A. Binary: 110
- B. Octal: 141
- C. Hexa: EF
- D. Decimal: 22A

Answer: D

Section: Number Systems

Explanation/Reference:

QUESTION 11

Which of the following is equivalent to 12 in decimal?

- A. Binary: 1110
- B. Octal: 15
- C. Hexa: C
- D. None of the other

Answer: C

Section: Number Systems

Explanation/Reference:

QUESTION 12

Which of the following is equivalent to 12 in decimal?

- A. Binary: 11000
- B. Octal: 31
- C. Hexa: 1A
- D. None of the other

Answer: A

Section: Number Systems

Explanation/Reference:

Exam C

QUESTION 1

A byte consists of _____ bits.

- A. 2
- B. 4
- C. 8
- D. 16

Answer: C

Section: Data Storage

Explanation/Reference:

QUESTION 2

In a set of 64 symbols, each symbol requires a bit pattern length of _____ bits.

- A. 4
- B. 5
- C. 6
- D. 7

Answer: C

Section: Data Storage

Explanation/Reference:

QUESTION 3

How many symbols can be represented by a bit pattern with ten bits?

- A. 128
- B. 256
- C. 512
- D. 1024

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 4

If the ASCII code for E is 1000101, then the ASCII code for e is _____. Answer the question without consulting the ASCII table.

- A. 1000110
- B. 1000111
- C. 0000110

D. 1100101

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 5

A 32-bit code called _____ represents symbols in all languages.

- A. ANSI
- B. Unicode
- C. EBCDIC
- D. Extended ASCII

Answer: B

Section: Data Storage

Explanation/Reference:

QUESTION 6

An image can be represented in a computer using the _____ method.

- A. bitmap graphic only
- B. vector graphic only
- C. Excess system only
- D. either bitmap or vector graphic

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 7

In the _____ graphic method of representing an image in a computer, each pixel is assigned a bit patterns.

- A. bitmap
- B. vector
- C. quantized
- D. binary

Answer: A

Section: Data Storage

Explanation/Reference:

QUESTION 8

In the _____ graphic method of representing an image in a computer, the image is decomposed into a combination of geometrical figures.

- A. bitmap
- B. vector
- C. quantized
- D. binary

Answer: B

Section: Data Storage

Explanation/Reference:

QUESTION 9

In the _____ graphic method of representing an image in a computer, re-scaling of the image creates a ragged or grainy image.

- A. bitmap
- B. vector
- C. quantized
- D. binary

Answer: A

Section: Data Storage

Explanation/Reference:

QUESTION 10

When we want to store music in a computer, the audio signal must be _____.

- A. sampled only
- B. quantized only
- C. coded only
- D. sampled, quantized, and coded

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 11

A floating-point value after normalization is $(1.0101) \times 2^{(-4)}$.

What is the value of exponent section in the Excess-127 representation?

- A. 4
- B. -4
- C. 127

D. 123

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 12

Assume a new Excess system uses 17 bits to represent the exponent section. What is the bias value in this system?

A. 17

B. 16

C. 65535

D. 65536

Answer: C

Section: Data Storage

Explanation/Reference:

QUESTION 13

Which number representation method is often used to store the exponential value of a fractional part?

A. unsigned integers

B. two's complement

C. Excess

D. ten's complement

Answer: C

Section: Data Storage

Explanation/Reference:

QUESTION 14

In an Excess conversion, we _____ the number to be converted.

A. add the bias number to

B. subtract the bias from

C. multiply the bias number by

D. divide the bias number by

Answer: A

Section: Data Storage

Explanation/Reference:

QUESTION 15

When a fractional part is normalized, the computer stores the _____.

- A. only the sign
- B. only the exponent
- C. only the mantissa
- D. the sign, exponent, and mantissa

Answer: D

Section: Data Storage

Explanation/Reference:

QUESTION 16

The precision of the fractional part of a number stored in a computer is defined by the _____.

- A. sign
- B. exponent
- C. mantissa
- D. last digit

Answer: C

Section: Data Storage

Explanation/Reference:

QUESTION 17

The combination of sign and mantissa of a real number in IEEE standard floating point format is stored as an integer in the _____ representation.

- A. unsigned
- B. sign and magnitude
- C. two's complement
- D. one's complement

Answer: B

Section: Data Storage

Explanation/Reference:

Exam D

QUESTION 1

_____ is an arithmetic operation.

- A. The exclusive OR
- B. The unary NOT
- C. Subtraction
- D. The binary AND

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 2

_____ is a logical bit operator.

- A. The exclusive OR
- B. The unary NOT
- C. exclusive OR, unary NOT, or binary AND
- D. The binary AND

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 3

The _____ method of integer representation is the most common method for storing integers in computer memory.

- A. sign-and-magnitude
- B. one's complement
- C. two's complement
- D. unsigned integers

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 4

In two's complement addition, if there is a final carry after the left most column addition, _____.

- A. add it to the right most column
- B. add it to the left most column
- C. discard it

D. increase the bit length

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 5

For an 8-bit allocation, the smallest decimal number that can be represented in two's complement form is _____.

- A. -8
- B. -127
- C. -128
- D. -256

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 6

For an 8-bit allocation, the largest decimal number that can be represented in two's complement form is _____.

- A. 8
- B. 127
- C. 128
- D. 256

Answer: B

Section: Operations on Data

Explanation/Reference:

QUESTION 7

In two's complement representation with a 4-bit allocation, we get _____ when we add 1 to 7.

- A. 8
- B. 1
- C. -7
- D. -8

Answer: D

Section: Operations on Data

Explanation/Reference:

QUESTION 8

In two's complement representation with a 4-bit allocation, we get _____ when we add 5 to 5.

- A. -5
- B. -6
- C. -7
- D. -10

Answer: B

Section: Operations on Data

Explanation/Reference:

QUESTION 9

If the exponent in Excess_127 is binary 10000101, the exponent in decimal is _____.

- A. 6
- B. 7
- C. 8
- D. 9

Answer: A

Section: Operations on Data

Explanation/Reference:

QUESTION 10

If we are adding two numbers, one of which has an exponent value of 7 and the other an exponent value of 9, we need to shift the decimal point of the smaller number _____.

- A. one place to the left
- B. one place to the right
- C. two places to the left
- D. two places to the right

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 11

_____ operator (s) takes two inputs to produce one output.

- A. Only AND
- B. Only OR
- C. Only NOT

D. AND, OR, or NOT

Answer: D

Section: Operations on Data

Explanation/Reference:

QUESTION 12

The unary _____ operator inverts its single input.

- A. AND
- B. OR
- C. NOT
- D. XOR

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 13

_____ operator (s), if the input is two 0s, the output is 0.

- A. In only AND
- B. In only OR
- C. In only XOR
- D. In AND, OR, or XOR

Answer: D

Section: Operations on Data

Explanation/Reference:

QUESTION 14

_____ operator (s), if the input is two 1s, the output is 0.

- A. In only AND
- B. In only OR
- C. In only XOR
- D. In AND, OR, or XOR

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 15

For the binary AND operation, only an input of _____ gives an output of 1.

- A. two 0s
- B. two 1s
- C. one 0 and one 1
- D. two 2s

Answer: B

Section: Operations on Data

Explanation/Reference:

QUESTION 16

For the binary OR operation, only an input of _____ gives an output of 0.

- A. two 0s
- B. two 1s
- C. one 0 and one 1
- D. two 2s

Answer: A

Section: Operations on Data

Explanation/Reference:

QUESTION 17

We use a bit pattern called a _____ to modify another bit pattern.

- A. mask
- B. carry
- C. float
- D. byte

Answer: A

Section: Operations on Data

Explanation/Reference:

QUESTION 18

To flip all the bits of a bit pattern, make a mask of all 1s and then _____ the bit pattern and the mask.

- A. AND
- B. OR
- C. XOR
- D. NOT

Answer: C

Section: Operations on Data

Explanation/Reference:

QUESTION 19

To un-set (force to 0) all the bits of a bit pattern, make a mask of all 0s and then _____ the bit pattern and the mask.

- A. AND
- B. OR
- C. XOR
- D. NOT

Answer: A

Section: Operations on Data

Explanation/Reference:

QUESTION 20

To set (force to 1) all the bits of a bit pattern, make a mask of all 1s and then _____ the bit pattern and the mask.

- A. AND
- B. OR
- C. XOR
- D. NOT

Answer: B

Section: Operations on Data

Explanation/Reference:

Exam E

QUESTION 1

The _____ is a computer subsystem that performs operations on data.

- A. CPU
- B. memory
- C. I/O hardware
- D. bus system

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 2

_____ is a stand-alone storage location that holds data temporarily.

- A. An ALU
- B. A register
- C. A control unit
- D. A tape drive

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 3

_____ is a unit that can add two inputs.

- A. An ALU
- B. A register
- C. A control unit
- D. A tape drive

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 4

A register in a CPU can hold _____.

- A. only data
- B. only instructions
- C. only program counter values

D. data, instruction, or program counter values

Answer: D

Section: Computer Organization

Explanation/Reference:

QUESTION 5

A control unit with five wires can define up to _____ operations.

- A. 5
- B. 10
- C. 25
- D. 32

Answer: D

Section: Computer Organization

Explanation/Reference:

QUESTION 6

A word can be _____ bits.

- A. only 8
- B. only 16
- C. only 32
- D. 8, or 16, or 32

Answer: D

Section: Computer Organization

Explanation/Reference:

QUESTION 7

If the memory address space is 16 MB and the word size is 8 bits, then _____ bits are needed to access each word.

- A. 8
- B. 16
- C. 24
- D. 32

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 8

The data in _____ is erased if the computer is powered down.

- A. RAM
- B. ROM
- C. a tape drive
- D. a CD-ROM

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 9

_____ is a memory type with capacitors that need to be refreshed periodically.

- A. SRAM
- B. DRAM
- C. ROM
- D. CROM

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 10

_____ is a memory type with traditional flip-flop gates to hold data.

- A. SRAM
- B. DRAM
- C. ROM
- D. CROM

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 11

There are _____ bytes in 16 Terabytes.

- A. 2^{16}
- B. 2^{40}
- C. 2^{44}
- D. 2^{56}

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 12

_____ can be programmed and erased using electronic impulses but can remain in a computer during erasure.

- A. ROM
- B. PROM
- C. EPROM
- D. EEPROM

Answer: D

Section: Computer Organization

Explanation/Reference:

QUESTION 13

_____ is a type of memory in which the user, not the manufacturer, stores programs that cannot be overwritten.

- A. ROM
- B. PROM
- C. EPROM
- D. EEPROM

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 14

Main memory in a computer usually consists of large amounts of _____ speed memory.

- A. high
- B. medium
- C. low
- D. very high speed

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 15

A _____ is a storage device to which the user can write information only once.

- A. CD-ROM
- B. CD-R
- C. CD-RW
- D. CD-RR

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 16

A _____ is a storage device that can undergo multiple writes and erasures.

- A. CD-ROM
- B. CD-R
- C. CD-RW
- D. CD-RR

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 17

The smallest storage area on a magnetic disk that can be accessed at one time is a _____.

- A. track
- B. sector
- C. frame
- D. head

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 18

If the memory has 2^{32} words, the address bus needs to have _____ wires.

- A. 8
- B. 16
- C. 32
- D. 64

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 19

A control bus with eight wires can define _____ operations.

- A. 8
- B. 16
- C. 256
- D. 512

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 20

A _____ controller is a high-speed serial interface that transfers data in packets.

- A. SCSI
- B. USB
- C. FireWire
- D. USB and FireWire

Answer: D

Section: Computer Organization

Explanation/Reference:

QUESTION 21

The three steps in the running of a program on a computer are performed in the specific order _____.

- A. fetch, execute, and decode
- B. decode, execute, and fetch
- C. fetch, decode, and execute
- D. decode, fetch, and execute

Answer: C

Section: Computer Organization

Explanation/Reference:

QUESTION 22

In the _____ method for synchronizing the operation of the CPU with an I/O device, the I/O device informs the CPU when it is ready for data transfer.

- A. programmed I/O
- B. interrupt-driven I/O
- C. DMA
- D. isolated I/O

Answer: B

Section: Computer Organization

Explanation/Reference:

QUESTION 23

In the _____ method for synchronizing the operation of the CPU with an I/O device, the CPU is idle until the I/O operation is finished.

- A. programmed I/O
- B. interrupt-driven I/O
- C. DMA
- D. isolated I/O

Answer: A

Section: Computer Organization

Explanation/Reference:

QUESTION 24

In the _____ method for synchronizing the operation of the CPU with an I/O device, a large block of data can be passed from an I/O device to memory directly.

- A. programmed I/O
- B. interrupt-driven I/O
- C. DMA
- D. isolated I/O

Answer: C

Section: Computer Organization

Explanation/Reference:

Exam F

QUESTION 1

The TCP/IP model has _____ layers.

- A. five
- B. six
- C. seven
- D. eight

Answer: A

Section: Computer Network

Explanation/Reference:

QUESTION 2

The _____ layer of the TCP/IP protocol suite provides services for end users.

- A. datalink
- B. session
- C. application
- D. transport

Answer: C

Section: Computer Network

Explanation/Reference:

QUESTION 3

The _____ layer of the TCP/IP protocol suite transmits a bit stream over a physical medium.

- A. datalink
- B. transport
- C. network
- D. physical

Answer: D

Section: Computer Network

Explanation/Reference:

QUESTION 4

The _____ layer of the TCP/IP protocol suite is responsible for node-to-node delivery of a frame between two adjacent nodes.

- A. datalink
- B. session
- C. network

D. transport

Answer: A

Section: Computer Network

Explanation/Reference:

QUESTION 5

The _____ layer of the TCP/IP protocol suite is responsible for source-to-destination delivery of the entire message.

- A. datalink
- B. session
- C. network
- D. transport

Answer: C

Section: Computer Network

Explanation/Reference:

QUESTION 6

What is the domain name in the email address *longnq9@fpt.edu.vn*?

- A. longnq9
- B. longnq9@fpt.edu.vn
- C. fpt.edu.vn
- D. edu

Answer: C

Section: Computer Network

Explanation/Reference:

QUESTION 7

Which physical topology uses a hub or switch?

- A. bus
- B. ring
- C. star
- D. bus and ring

Answer: C

Section: Computer Network

Explanation/Reference:

QUESTION 8

IP addresses are currently _____ bits in length.

- A. 4
- B. 8
- C. 32
- D. 40

Answer: C

Section: Computer Network

Explanation/Reference:

QUESTION 9

_____ protocol (s) is one of the protocols in the transport layer.

- A. Only TCP
- B. Only UDP
- C. Only SCTP
- D. TCP, UDP and SCTP

Answer: D

Section: Computer Network

Explanation/Reference:

QUESTION 10

_____ is a protocol for file transfer.

- A. FTP
- B. SMTP
- C. TELNET
- D. HTTP

Answer: A

Section: Computer Network

Explanation/Reference:

QUESTION 11

_____ is a protocol for email services.

- A. FTP
- B. SMTP
- C. TELNET
- D. HTTP

Answer: B

Section: Computer Network

Explanation/Reference:

QUESTION 12

_____ is a protocol for accessing and transferring documents on the WWW.

- A. FTP
- B. SMTP
- C. TELNET
- D. HTTP

Answer: D

Section: Computer Network

Explanation/Reference:

Exam G

QUESTION 1

_____ is a program that facilitates the execution of other programs.

- A. An operating system
- B. Hardware
- C. A queue
- D. An application program

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 2

_____ supervises the activity of each component in a computer system.

- A. An operating system
- B. Hardware
- C. A queue
- D. An application program

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 3

Multi-programming requires a _____ operating-system.

- A. batch
- B. time-sharing
- C. parallel
- D. distributed

Answer: B

Section: Operating System

Explanation/Reference:

QUESTION 4

_____ is multi-programming with swapping.

- A. Partitioning
- B. Paging
- C. Demand paging

D. Queuing

Answer: C

Section: Operating System

Explanation/Reference:

QUESTION 5

_____ is multi-programming without swapping.

- A. Partitioning
- B. Virtual memory
- C. Demand paging
- D. Queuing

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 6

In _____, only one program can reside in memory for execution.

- A. mono-programming
- B. multi-programming
- C. partitioning
- D. paging

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 7

_____ is a multi-programming method in which multiple programs are entirely in memory with each program occupying a contiguous space.

- A. Partitioning
- B. Paging
- C. Demand paging
- D. Demand segmentation

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 8

In paging, a program is divided into equally sized sections called _____.

- A. pages
- B. frames
- C. segments
- D. partitions

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 9

In _____, the program can be divided into differently sized sections.

- A. partitioning
- B. paging
- C. demand paging
- D. demand segmentation

Answer: D

Section: Operating System

Explanation/Reference:

QUESTION 10

In _____, the program can be divided into equally sized sections called pages, but the pages need not be in memory at the same time for execution.

- A. partitioning
- B. paging
- C. demand paging
- D. demand segmentation

Answer: C

Section: Operating System

Explanation/Reference:

QUESTION 11

A process in the _____ state can go to either the ready, terminated, or waiting states.

- A. hold
- B. virtual
- C. running

D. hold or running

Answer: C

Section: Operating System

Explanation/Reference:

QUESTION 12

A process in the ready state goes to the running state when _____.

- A. it enters memory
- B. it requests I/O
- C. it gets access to the CPU
- D. it finishes running

Answer: C

Section: Operating System

Explanation/Reference:

QUESTION 13

A program becomes a _____ when it is selected by the operating system and brought to the hold state.

- A. job
- B. process
- C. deadlock
- D. partition

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 14

Every process is _____.

- A. only a job
- B. only a program
- C. only a partition
- D. a job and a program

Answer: D

Section: Operating System

Explanation/Reference:

QUESTION 15

The _____ scheduler creates a process from a job and changes a process back to a job.

- A. job
- B. process
- C. virtual
- D. queue

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 16

The _____ scheduler moves a process from one process state to another.

- A. job
- B. process
- C. virtual
- D. queue

Answer: B

Section: Operating System

Explanation/Reference:

QUESTION 17

To prevent _____, an operating system can put resource restrictions on processes.

- A. starvation
- B. synchronization
- C. paging
- D. deadlock

Answer: D

Section: Operating System

Explanation/Reference:

QUESTION 18

_____ can occur if a process has too many resource restrictions.

- A. Starvation
- B. Synchronization
- C. Paging
- D. Deadlock

Answer: A

Section: Operating System

Explanation/Reference:

QUESTION 19

The _____ manager is responsible for archiving and backup.

- A. memory
- B. process
- C. device
- D. file

Answer: D

Section: Operating System

Explanation/Reference:

QUESTION 20

The _____ manager is responsible for access to I/O devices.

- A. memory
- B. process
- C. device
- D. file

Answer: C

Section: Operating System

Explanation/Reference:

Exam H

QUESTION 1

_____ is a step-by-step method for solving a problem or doing a task.

- A. A construct
- B. A recursion
- C. An iteration
- D. An algorithm

Answer: D

Section: Algorithms

Explanation/Reference:

QUESTION 2

There are _____ basic constructs in computer science.

- A. one
- B. two
- C. three
- D. four

Answer: C

Section: Algorithms

Explanation/Reference:

QUESTION 3

The _____ construct tests a condition.

- A. sequence
- B. decision
- C. repetition
- D. flow

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 4

The _____ construct uses a set of actions one after another.

- A. sequence
- B. decision
- C. repetition

D. flow

Answer: A

Section: Algorithms

Explanation/Reference:

QUESTION 5

The _____ construct handles repeated actions.

- A. sequence
- B. decision
- C. repetition
- D. flow

Answer: C

Section: Algorithms

Explanation/Reference:

QUESTION 6

_____ is a pictorial representation of an algorithm.

- A. An UML diagram
- B. A program
- C. Pseudocode
- D. An algorithm

Answer: A

Section: Algorithms

Explanation/Reference:

QUESTION 7

_____ is an English-language-like representation of code.

- A. An UML diagram
- B. A program
- C. Pseudocode
- D. An algorithm

Answer: C

Section: Algorithms

Explanation/Reference:

QUESTION 8

_____ is a basic algorithm that adds a list of numbers.

- A. Summation
- B. Product
- C. Smallest
- D. Largest

Answer: A

Section: Algorithms

Explanation/Reference:

QUESTION 9

_____ is a basic algorithm that multiplies a list of numbers.

- A. Summation
- B. Product
- C. Smallest
- D. Largest

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 10

_____ is a basic algorithm that arranges data according to its value.

- A. Inquiring
- B. Sorting
- C. Searching
- D. Recursion

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 11

The items are divided into two lists (sorted and unsorted) _____ sort.

- A. only in a selection
- B. only in a bubble
- C. only in an insertion
- D. in selection, bubble, or insertion

Answer: D

Section: Algorithms

Explanation/Reference:

QUESTION 12

In _____ sort, the item that goes into the sorted list is always the first item in the unsorted list.

- A. selection
- B. bubble
- C. insertion
- D. every

Answer: C

Section: Algorithms

Explanation/Reference:

QUESTION 13

In _____ sort, the smallest item from the unsorted list is swapped with the item at the beginning of the unsorted list.

- A. selection
- B. bubble
- C. insertion
- D. every

Answer: A

Section: Algorithms

Explanation/Reference:

QUESTION 14

In _____ sort, the smallest item moves to the beginning of the unsorted list. There is no one-to-one swapping.

- A. selection
- B. bubble
- C. insertion
- D. every

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 15

_____ is a basic algorithm in which we want to find the location of a target in a list of items.

- A. Sorting
- B. Searching
- C. Product
- D. Summation

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 16

We use a _____ search for an unordered list.

- A. sequential
- B. binary
- C. bubble
- D. insertion

Answer: A

Section: Algorithms

Explanation/Reference:

QUESTION 17

We use a _____ search for an ordered list.

- A. sequential
- B. binary
- C. bubble
- D. insertion

Answer: B

Section: Algorithms

Explanation/Reference:

QUESTION 18

_____ is a process in which an algorithm calls itself.

- A. Insertion
- B. Searching
- C. Recursion
- D. Iteration

Answer: C

Section: Algorithms

Explanation/Reference:

Exam I

QUESTION 1

The only language understood by computer hardware is a _____ language.

- A. machine
- B. symbolic
- C. high level
- D. natural

Answer: A

Section: Programming Language

Explanation/Reference:

QUESTION 2

C, C++, and Java can be classified as _____ languages.

- A. machine
- B. symbolic
- C. high-level
- D. natural

Answer: C

Section: Programming Language

Explanation/Reference:

QUESTION 3

FORTRAN is a(n) _____ language.

- A. procedural
- B. function
- C. declarative
- D. object oriented

Answer: A

Section: Programming Language

Explanation/Reference:

QUESTION 4

Pascal is a(n) _____ language.

- A. procedural
- B. functional
- C. declarative

D. object oriented

Answer: A

Section: Programming Language

Explanation/Reference:

QUESTION 5

Java is a(n) _____ language.

- A. procedural
- B. functional
- C. declarative
- D. object-oriented

Answer: D

Section: Programming Language

Explanation/Reference:

QUESTION 6

LISP is a(n) _____ language.

- A. procedural
- B. functional
- C. declarative
- D. object-oriented

Answer: B

Section: Programming Language

Explanation/Reference:

QUESTION 7

_____ is a common language in the business environment.

- A. FORTRAN
- B. C++
- C. C
- D. COBOL

Answer: D

Section: Programming Language

Explanation/Reference:

QUESTION 8

_____ is a popular object-oriented language.

- A. FORTRAN
- B. COBOL
- C. JAVA
- D. LISP

Answer: C

Section: Programming Language

Explanation/Reference:

QUESTION 9

A _____ program can be either an application or an applet.

- A. Fortran
- B. C++
- C. C
- D. Java

Answer: D

Section: Programming Language

Explanation/Reference:

QUESTION 10

LISP and Scheme are both _____ languages.

- A. procedural
- B. functional
- C. declarative
- D. object oriented

Answer: B

Section: Programming Language

Explanation/Reference:

QUESTION 11

Prolog is an example of a(n) _____ language.

- A. procedural
- B. functional
- C. declarative
- D. object oriented

Answer: C

Section: Programming Language

Explanation/Reference:

Exam J

QUESTION 1

One phase in system development is _____.

- A. analysis
- B. application
- C. designing
- D. collecting

Answer: A

Section: Software Engineering

Explanation/Reference:

QUESTION 2

Defining the users, requirements, and methods is part of the _____ phase.

- A. analysis
- B. design
- C. implementation
- D. testing

Answer: A

Section: Software Engineering

Explanation/Reference:

QUESTION 3

In the system development process, writing the program is part of the _____ phase

- A. analysis
- B. design
- C. implementation
- D. testing

Answer: C

Section: Software Engineering

Explanation/Reference:

QUESTION 4

In the system development process, structure charts are tools used in the _____ phase.

- A. analysis
- B. design
- C. implementation

D. testing

Answer: B

Section: Software Engineering

Explanation/Reference:

QUESTION 5

Testing a software system can involve _____ testing.

- A. black box
- B. glass box
- C. neither black box nor glass box
- D. both black box and glass box

Answer: D

Section: Software Engineering

Explanation/Reference:

QUESTION 6

_____ is the breaking up of a large project into smaller parts.

- A. Coupling
- B. Incrementing
- C. Obsolescence
- D. Modularization

Answer: D

Section: Software Engineering

Explanation/Reference:

QUESTION 7

_____ is a measure of how tightly two modules are bound to each other.

- A. Modularity
- B. Coupling
- C. Interoperability
- D. Cohesion

Answer: B

Section: Software Engineering

Explanation/Reference:

QUESTION 8

_____ between modules in a software system must be minimized.

- A. Coupling
- B. Cohesion
- C. Neither coupling nor cohesion
- D. Both coupling and cohesion

Answer: A

Section: Software Engineering

Explanation/Reference:

QUESTION 9

_____ between modules in a software system must be maximized.

- A. Coupling
- B. Cohesion
- C. Neither coupling nor cohesion
- D. Both coupling and cohesion

Answer: B

Section: Software Engineering

Explanation/Reference:

Exam K

QUESTION 1

A data structure can be _____.

- A. only an array
- B. only a record
- C. only a linked list
- D. an array, a record, or a linked list

Answer: D

Section: Data Structure

Explanation/Reference:

QUESTION 2

An array that consists of just rows and columns is a _____ array.

- A. one-dimensional
- B. two-dimensional
- C. three-dimensional
- D. multidimensional

Answer: B

Section: Data Structure

Explanation/Reference:

QUESTION 3

Each element in a record is called _____.

- A. a variable
- B. an index
- C. a field
- D. a node

Answer: C

Section: Data Structure

Explanation/Reference:

QUESTION 4

All the members of a record must be _____.

- A. the same type
- B. related types
- C. integer type

D. character type

Answer: B

Section: Data Structure

Explanation/Reference:

QUESTION 5

_____ is an ordered collection of data in which each element contains the location of the next element.

- A. An array
- B. A record
- C. A linked list
- D. A file

Answer: C

Section: Data Structure

Explanation/Reference:

QUESTION 6

In a linked list, each element contains _____.

- A. only data
- B. only a link
- C. neither data or a link
- D. both data and link

Answer: D

Section: Data Structure

Explanation/Reference:

QUESTION 7

The _____ is a pointer that identifies the next element in the linked list.

- A. link
- B. node
- C. array
- D. data

Answer: A

Section: Data Structure

Explanation/Reference:

QUESTION 8

Given a linked list called **children**, the pointer variable **children** identifies _____ element of the linked list.

- A. the first
- B. the second
- C. the last
- D. any

Answer: A

Section: Data Structure

Explanation/Reference:

QUESTION 9

An empty linked list consists of _____.

- A. A node
- B. two nodes
- C. data and a link
- D. a null head pointer

Answer: D

Section: Data Structure

Explanation/Reference:

QUESTION 10

To traverse a list, you need a _____ pointer.

- A. null
- B. walking
- C. beginning
- D. insertion

Answer: B

Section: Data Structure

Explanation/Reference:

Exam L

QUESTION 1

In an abstract data type, _____.

- A. the ADT implementation is known
- B. the ADT implementation is hidden
- C. the ADT public operations are hidden
- D. Nothing is hidden

Answer: B

Section: Abstract Data Types

Explanation/Reference:

QUESTION 2

A stack is a _____ structure.

- A. FIFO
- B. LIFO
- C. DIFO
- D. SIFO

Answer: B

Section: Abstract Data Types

Explanation/Reference:

QUESTION 3

A(n) _____ list is also known as a queue.

- A. LIFO
- B. FIFO
- C. unordered
- D. ordered

Answer: B

Section: Abstract Data Types

Explanation/Reference:

QUESTION 4

If A is the first data element input into a stack, followed by B, C, and D, then _____ is the first element to be removed.

- A. A
- B. B
- C. C

D. D

Answer: D

Section: Abstract Data Types

Explanation/Reference:

QUESTION 5

If A is the first data element input into a queue, followed by B, C, and D, then _____ is the first element to be removed.

A. A

B. B

C. C

D. D

Answer: A

Section: Abstract Data Types

Explanation/Reference:

QUESTION 6

The pop operation _____ of the stack.

A. deletes an item from the top

B. deletes an item from the bottom

C. inserts an item at the top

D. inserts an item at the bottom

Answer: A

Section: Abstract Data Types

Explanation/Reference:

QUESTION 7

The push operation _____ of the stack.

A. deletes an item from the top

B. deletes an item from the bottom

C. inserts an item at the top

D. inserts an item at the bottom

Answer: C

Section: Abstract Data Types

Explanation/Reference:

QUESTION 8

In a binary tree, each node has _____ two subtrees.

- A. more than
- B. less than
- C. at most
- D. at least

Answer: D

Section: Abstract Data Types

Explanation/Reference:

QUESTION 9

In preorder traversal of a binary tree, the _____.

- A. left subtree is processed first
- B. right subtree is processed first
- C. root is processed first
- D. the root is never processed

Answer: C

Section: Abstract Data Types

Explanation/Reference:

QUESTION 10

In _____ traversal of a binary tree, the right subtree is processed last.

- A. preorder
- B. inorder
- C. postorder
- D. any order

Answer: B

Section: Abstract Data Types

Explanation/Reference:

QUESTION 11

In postorder traversal of a binary tree, the root is processed _____.

- A. first
- B. second
- C. last
- D. after the left subtree

Answer: C

Section: Abstract Data Types

Explanation/Reference:

QUESTION 12

In postorder traversal of a binary tree, the left subtree is processed _____.

- A. first
- B. second
- C. last
- D. after the right subtree

Answer: A

Section: Abstract Data Types

Explanation/Reference:

QUESTION 13

In _____ traversal of a binary tree, the right subtree is processed last.

- A. preorder
- B. inorder
- C. postorder
- D. out of order

Answer: A

Section: Abstract Data Types

Explanation/Reference:

QUESTION 14

In an inorder traversal of a binary tree, the root is processed _____.

- A. first
- B. second
- C. last
- D. two times

Answer: B

Section: Abstract Data Types

Explanation/Reference:

Exam M

QUESTION 1

_____ file can be accessed randomly.

- A. A sequential
- B. An indexed
- C. A hashed
- D. Any

Answer: D

Section: File Structure

Explanation/Reference:

QUESTION 2

_____ file can be accessed sequentially.

- A. A sequential
- B. An indexed
- C. A hashed
- D. No

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 3

When a sequential file is updated, the _____ file gets the actual update.

- A. new master
- B. old master
- C. transaction
- D. error report

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 4

When a sequential file is updated, the _____ file contains a list of all errors occurring during the update process.

- A. new master
- B. old master
- C. transaction

D. error report

Answer: D

Section: File Structure

Explanation/Reference:

QUESTION 5

When a sequential file is updated, the _____ file contains the changes to be applied.

- A. new master
- B. old master
- C. transaction
- D. error report

Answer: C

Section: File Structure

Explanation/Reference:

QUESTION 6

After a sequential file is updated, the _____ file contains the most current data.

- A. new master
- B. old master
- C. transaction
- D. error report

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 7

If the transaction file key is 20 and the first master file key is 25, then we _____.

- A. add the new record to the new master file
- B. revise the contents of the old master file
- C. delete the data
- D. write the old master file record to the new master file

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 8

If the transaction file key is 20 with a delete code and the master file key is 20, then we _____.

- A. add the transaction to the new master file
- B. revise the contents of the old master file
- C. delete the data
- D. write the old master file record to the new master file

Answer: C

Section: File Structure

Explanation/Reference:

QUESTION 9

An indexed file consists of _____.

- A. only a sequential data file
- B. only an index
- C. only a random data file
- D. an index and random data file

Answer: D

Section: File Structure

Explanation/Reference:

QUESTION 10

The index of an indexed file has _____ fields.

- A. two
- B. three
- C. four
- D. any number of

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 11

In the _____ hashing method, selected digits are extracted from the key and used as the address.

- A. direct
- B. division remainder
- C. modulo division
- D. digit extraction

Answer: D

Section: File Structure

Explanation/Reference:

QUESTION 12

In the _____ hashing method, the key is divided by the file size, and the address is the remainder plus 1.

- A. direct
- B. modulo division
- C. division remainder
- D. digit extraction

Answer: B

Section: File Structure

Explanation/Reference:

QUESTION 13

In the _____ hashing method, there are no synonyms or collisions.

- A. direct
- B. modulo division
- C. division remainder
- D. digit extraction

Answer: A

Section: File Structure

Explanation/Reference:

QUESTION 14

_____ are keys that hash to the same location in the data file.

- A. Collisions
- B. Buckets
- C. Synonyms
- D. Linked lists

Answer: C

Section: File Structure

Explanation/Reference:

QUESTION 15

When a hashing algorithm produces an address for an insertion key and that address is already occupied, it is

called a _____.

- A. collision
- B. probe
- C. synonym
- D. linked list

Answer: D

Section: File Structure

Explanation/Reference:

Exam N

QUESTION 1

In a three-level DBMS architecture, the layer that interacts directly with the hardware is the _____ level.

- A. external
- B. conceptual
- C. internal
- D. physical

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 2

In a three-level DBMS architecture, the _____ level determines where data is actually stored on the storage devices.

- A. external
- B. conceptual
- C. internal
- D. physical

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 3

The _____ level of a three-level DBMS architecture defines the logical view of the data.

- A. external
- B. conceptual
- C. internal
- D. physical

Answer: B

Section: Databases

Explanation/Reference:

QUESTION 4

The data model and the schema of a DBMS are often defined at the _____ level.

- A. external
- B. conceptual
- C. internal

D. physical

Answer: B

Section: Databases

Explanation/Reference:

QUESTION 5

In a three-level DBMS architecture, the _____ level interacts directly with the users.

- A. external
- B. conceptual
- C. internal
- D. physical

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 6

Of the various database models, the _____ model is the most prevalent today.

- A. hierarchical
- B. network
- C. relational
- D. linked list

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 7

Each column in a relation is called _____.

- A. an attribute
- B. a tuple
- C. a union
- D. an attitude

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 8

Each row in a relation is called _____.

- A. an attribute
- B. a tuple
- C. a union
- D. an attitude

Answer: B

Section: Databases

Explanation/Reference:

QUESTION 9

A unary operator is applied to _____ relation(s) and creates an output of _____ relation(s).

- A. one, one
- B. one, two
- C. two, one
- D. two, two

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 10

A binary operator is applied to _____ relations (s) and creates an output of _____ relation(s).

- A. one, one
- B. one, two
- C. two, one
- D. two, two

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 11

The unary _____ operation always results in a relation that has exactly one more row than the original relation.

- A. insert
- B. delete
- C. update
- D. select

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 12

If you want to change the value of an attribute of a tuple, you use the _____ operation.

- A. project
- B. join
- C. update
- D. select

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 13

The operation that takes two relations and combines them based on common attributes is the _____ operation.

- A. project
- B. join
- C. union
- D. intersection

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 14

If you need to delete an attribute in a relation, you can use the _____ operation.

- A. project
- B. join
- C. union
- D. intersection

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 15

You want to create a relation called New that contains tuples that belong to both relation A and relation B. For this, you can use the _____ operation.

- A. project
- B. join
- C. union
- D. intersection

Answer: D

Section: Databases

Explanation/Reference:

QUESTION 16

Which of the following is a unary operator?

- A. project
- B. join
- C. union
- D. intersection

Answer: A

Section: Databases

Explanation/Reference:

QUESTION 17

Which of the following is a binary operator?

- A. select
- B. update
- C. difference
- D. all of the other

Answer: C

Section: Databases

Explanation/Reference:

QUESTION 18

_____ is a declarative language used on relational databases.

- A. PDQ
- B. SQL
- C. LES
- D. PBJ

Answer: C

Section: Databases

Explanation/Reference:

Exam O

QUESTION 1

Data is compressed using a dictionary with indexes to strings. This is _____ .

- A. Huffman encoding
- B. Lempel Ziv encoding
- C. Morse coding
- D. lossy coding

Answer: B

Section: Data Compression

Explanation/Reference:

QUESTION 2

A string of one hundred 0s is replaced by two markers, a 0, and the number 100. This is ____.

- A. Huffman encoding
- B. Lempel Ziv encoding
- C. Morse coding
- D. run-length encoding

Answer: D

Section: Data Compression

Explanation/Reference:

QUESTION 3

____ is an example of lossy compression.

- A. Huffman encoding
- B. Lempel Ziv encoding
- C. Morse coding
- D. JPEG

Answer: D

Section: Data Compression

Explanation/Reference:

QUESTION 4

In a ____ data compression method, the received data is an exact copy of the original message.

- A. lossless
- B. lossy
- C. MPEG

D. JPEG

Answer: A

Section: Data Compression

Explanation/Reference:

QUESTION 5

___ data compression method, the received data need not be an exact copy of the original message.

- A. Only in MP3
- B. Only in JPEG
- C. Only in JPEG
- D. In MP3, JPEG, or MPEG

Answer: D

Section: Data Compression

Explanation/Reference:

QUESTION 6

___ encoding is a lossless data compression method.

- A. Only Huffman
- B. Only Run-length
- C. Only LZ
- D. Huffman, run-length, or LZ

Answer: D

Section: Data Compression

Explanation/Reference:

QUESTION 7

In ___ encoding, the more frequently occurring characters have shorter codes than the less frequently occurring characters.

- A. Huffman
- B. Run-length
- C. LZ
- D. JPEG

Answer: A

Section: Data Compression

Explanation/Reference:

QUESTION 8

In ____ encoding, P15 can be replaced by P15.

- A. Huffman
- B. Run-length
- C. LZ
- D. JPEG

Answer: B

Section: Data Compression

Explanation/Reference:

QUESTION 9

LZ encoding requires ____.

- A. only a dictionary
- B. only a buffer
- C. only an algorithm
- D. a dictionary, a buffer and an algorithm

Answer: D

Section: Data Compression

Explanation/Reference:

QUESTION 10

JPEG encoding involves ____, a process that reveals the redundancies in a block.

- A. blocking
- B. the discrete cosine transform
- C. quantization
- D. vectorization

Answer: B

Section: Data Compression

Explanation/Reference:

QUESTION 11

In JPEG encoding, the ____ process breaks the original picture into smaller blocks and assigns a value to each pixel in a block.

- A. blocking
- B. the discrete cosine transform (DCT)
- C. quantization

D. vectorization

Answer: A

Section: Data Compression

Explanation/Reference:

QUESTION 12

The last step in JPEG, ____, removes redundancies.

- A. blocking
- B. compression
- C. quantization
- D. vectorization

Answer: B

Section: Data Compression

Explanation/Reference:

QUESTION 13

____ is a lossy compression method for pictures and graphics, whereas ____ is a lossy compression method for video.

- A. DCT, MPEG
- B. MPEG, JPEG
- C. JPEG, MPEG
- D. JPEG, DCT

Answer: C

Section: Data Compression

Explanation/Reference:

Exam P

QUESTION 1

Three security goals are _____.

- A. confidentiality, cryptography, and nonrepudiation
- B. confidentiality, encryption, and decryption
- C. confidentiality, integrity, and availability
- D. confidentiality, denial of service, and masquerading

Answer: C

Section: Security

Explanation/Reference:

QUESTION 2

Which of the following attacks is threatening integrity?

- A. Masquerading
- B. Traffic Analysis
- C. Denial of service
- D. Encoding

Answer: A

Section: Security

Explanation/Reference:

QUESTION 3

Which of the following attacks is threatening availability?

- A. Replaying
- B. Modification
- C. Denial of service
- D. Decoding

Answer: C

Section: Security

Explanation/Reference:

QUESTION 4

_____ means concealing the contents of a message by enciphering.

- A. Steganography
- B. Cryptography
- C. Compressing

D. Authentication

Answer: B

Section: Security

Explanation/Reference:

QUESTION 5

_____ means concealing the message by covering it with something else.

- A. Steganography
- B. Cryptography
- C. Compressing
- D. Authentication

Answer: A

Section: Security

Explanation/Reference:

QUESTION 6

In _____ cryptography, the same key is used by the sender and the receiver.

- A. symmetric-key
- B. asymmetric-key
- C. public-key
- D. open-key

Answer: A

Section: Security

Explanation/Reference:

QUESTION 7

In _____ cryptography, the same key is used in both directions.

- A. symmetric-key
- B. asymmetric-key
- C. public-key
- D. open-key

Answer: A

Section: Security

Explanation/Reference:

QUESTION 8

_____ cryptography is often used for long messages.

- A. symmetric-key
- B. asymmetric-key
- C. public-key
- D. open-key

Answer: A

Section: Security

Explanation/Reference:

QUESTION 9

_____ cryptography is often used for short messages.

- A. symmetric-key
- B. asymmetric-key
- C. Secret-key
- D. Open-key

Answer: B

Section: Security

Explanation/Reference:

QUESTION 10

_____ means that the sender and the receiver expect confidentiality.

- A. Nonrepudiation
- B. Integrity
- C. Authentication
- D. encryption and decryption

Answer: D

Section: Security

Explanation/Reference:

QUESTION 11

_____ means that the data must arrive at the receiver exactly as they were sent.

- A. Nonrepudiation
- B. Message Integrity
- C. Authentication
- D. Secrecy

Answer: B
Section: Security

Explanation/Reference:

QUESTION 12

_____ can provide authentication, integrity, and nonrepudiation for a message.

- A. Encryption/decryption
- B. Digital signature
- C. Compression
- D. Key-exchange

Answer: B
Section: Security

Explanation/Reference:

QUESTION 13

In _____, the identity of a party is verified once for the entire duration of system access.

- A. entity authentication
- B. message integrity
- C. message authentication
- D. message encryption

Answer: A
Section: Security

Explanation/Reference:

QUESTION 14

In _____ cryptography, everyone has access to everyone's public key.

- A. symmetric-key
- B. asymmetric-key
- C. secret-key
- D. private-key

Answer: B
Section: Security

Explanation/Reference:

QUESTION 15

In the asymmetric-key method used for confidentiality, which key(s) is (are) publicly known?

- A. encryption key only
- B. decryption key only
- C. both encryption and decryption keys
- D. neither encryption key nor decryption key

Answer: A

Section: Security

Explanation/Reference:

QUESTION 16

The RSA algorithm for confidentiality uses _____ cryptography.

- A. asymmetric-key
- B. symmetric-key
- C. substitution
- D. transposition

Answer: A

Section: Security

Explanation/Reference:

QUESTION 17

In RSA, if user A wants to send an encrypted message to user B, the plaintext is encrypted with the public key of _____.

- A. user A
- B. user B
- C. the network
- D. a third party

Answer: B

Section: Security

Explanation/Reference:

QUESTION 18

The attack that reduces the capability of a computer is called a _____ attack.

- A. penetration
- B. denial of service
- C. either a or b
- D. neither a nor b

Answer: B

Section: Security

Explanation/Reference:

QUESTION 19

Sending a virus to a computer is called an _____ attack.

- A. penetration
- B. denial of service
- C. either a or b
- D. neither a nor b

Answer: A

Section: Security

Explanation/Reference:

Exam Q

QUESTION 1

The _____ statement adds 1 to the variable.

- A. increment
- B. decrement
- C. loop
- D. complement

Answer: A

Section: Theory of Computation

Explanation/Reference:

QUESTION 2

The _____ statement repeats one or more actions.

- A. increment
- B. decrement
- C. loop
- D. complement

Answer: C

Section: Theory of Computation

Explanation/Reference:

QUESTION 3

The _____ statement subtracts 1 from the variable.

- A. increment
- B. decrement
- C. loop
- D. complement

Answer: B

Section: Theory of Computation

Explanation/Reference:

QUESTION 4

To clear a variable, we use the _____ statement(s).

- A. increment
- B. decrement
- C. loop

D. decrement and loop

Answer: D

Section: Theory of Computation

Explanation/Reference:

QUESTION 5

To assign a number to a variable, we use the _____ statement(s).

- A. increment
- B. decrement
- C. loop
- D. decrement and loop

Answer: A

Section: Theory of Computation

Explanation/Reference:

QUESTION 6

To copy the value of one variable to another, we use the _____ statement(s).

- A. increment
- B. decrement
- C. loop
- D. increment, decrement and loop

Answer: D

Section: Theory of Computation

Explanation/Reference:

QUESTION 7

A Turing machine has these components: _____.

- A. tape, memory, and read/write head
- B. disk, controller, and read/write head
- C. tape, controller, and read/write head
- D. disk, memory, and controller

Answer: C

Section: Theory of Computation

Explanation/Reference:

QUESTION 8

In a Turing machine, the _____ holds a sequence of characters.

- A. disk
- B. tape
- C. controller
- D. read/write head

Answer: B

Section: Theory of Computation

Explanation/Reference:

QUESTION 9

The _____ is the theoretical counterpart of the CPU.

- A. disk
- B. tape
- C. controller
- D. read/write head

Answer: C

Section: Theory of Computation

Explanation/Reference:

QUESTION 10

The controller has _____ states.

- A. three
- B. four
- C. a finite number of
- D. an infinite number of

Answer: C

Section: Theory of Computation

Explanation/Reference:

QUESTION 11

A _____ is a pictorial representation of the states and their relationships to each other.

- A. transition diagram
- B. flowchart
- C. transition table
- D. Turing machine

Answer: A

Section: Theory of Computation

Explanation/Reference:

QUESTION 12

A _____ shows, among other things, the movement of the read/write head, the character read, and the character written.

- A. diagram
- B. flowchart
- C. transition table
- D. Turing machine

Answer: C

Section: Theory of Computation

Explanation/Reference:

QUESTION 13

We use _____ to denote a program's complexity.

- A. the Turing number
- B. big-O notation
- C. factorials
- D. the Simple Language

Answer: B

Section: Theory of Computation

Explanation/Reference:

QUESTION 14

The complexity of a problem is $O(\log_{10} n)$ and the computer executes 1 million instructions per second. How long does it take to run the program if the number of operations is 10,000?

- A. 1 microsecond
- B. 2 microseconds
- C. 3 microseconds
- D. 4 microseconds

Answer: D

Section: Theory of Computation

Explanation/Reference:

Exam R

QUESTION 1

The main foundation of thinking machines came from:

- A. Sir Isaac Newton
- B. Gottfried W. Leibniz
- C. Alan Turing
- D. John McCarthy

Answer: D

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 2

The term Artificial Intelligence (AI) was first coined by:

- A. Steven Spielberg
- B. Richard H. Richen
- C. Alan Turing
- D. John McCarthy

Answer: D

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 3

Two programming languages specifically designed for AI are:

- A. C and C++
- B. Java and C++
- C. LISP and PROLOG
- D. FORTRAN and COBOL

Answer: C

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 4

A node in semantic network becomes _____.

- A. a slot in frames
- B. an edge in frames
- C. an object in frames

D. a line in frames

Answer: C

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 5

Which of the following is not a sentence in a propositional logic:

- A. Ford is a car.
- B. If John is home then Mary is at work.
- C. True
- D. Where is John?

Answer: D

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 6

To find the depth of an object, we use:

- A. edge detection
- B. segmentation
- C. stereo vision
- D. shading

Answer: C

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 7

To find the orientation of an object, we use:

- A. motion
- B. segmentation
- C. stereo vision
- D. texture

Answer: D

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 8

In language understanding, parsing a sentence is part of:

- A. speech recognition
- B. syntactic analysis
- C. semantic analysis
- D. pragmatic analysis

Answer: B

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 9

We use brute-force search:

- A. if we have no prior knowledge about the search
- B. if we need to do the search quickly
- C. if we need to do the search thoroughly
- D. after performing heuristic search

Answer: A

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 10

In a biological neuron, the synapse:

- A. holds the nucleus of the cell
- B. acts as input device
- C. is the connecting point between the axon of the neuron and dendrites of other neurons
- D. acts as the output device

Answer: C

Section: Artificial Intelligence

Explanation/Reference:

QUESTION 11

A perceptron:

- A. is a biological neuron
- B. is one of the parts of a biological neuron
- C. is an artificial neuron
- D. applies a weight on signals that pass through the neighboring neuron

Answer: C

Section: Artificial Intelligence

Explanation/Reference:

Exam S

QUESTION 1

In Facebook, friendship is a _____ relationship.

- A. one-to-one
- B. one-to-many
- C. many-to-one
- D. many-to-many

Answer: A

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 2

Communication in Facebook is a _____ relationship.

- A. one-to-one
- B. one-to-many
- C. many-to-one
- D. many-to-many

Answer: B

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 3

The home page in Facebook can be used _____.

- A. only for sign-up
- B. only for log-in
- C. both for sign-up and log-in
- D. neither for sign-up nor log-in

Answer: C

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 4

To find friends in Facebook, the member can _____.

- A. can accept Facebook recommendation
- B. follow email contacts
- C. look for old friends

D. all of the other

Answer: D

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 5

When you are in Facebook, you can _____.

- A. post news
- B. read news
- C. neither post nor read news
- D. both post and read news

Answer: D

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 6

In Twitter, a message can be _____:

- A. of any size
- B. of maximum 100 characters
- C. of maximum 140 characters
- D. of maximum 200 characters

Answer: C

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 7

In Twitter, the relationship between member is based on:

- A. friendship
- B. following
- C. either friendship or following
- D. both friendship and following

Answer: B

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 8

In Twitter, follower-member is a _____ relationship.

- A. one-to-one
- B. one-to-many
- C. many-to-one
- D. many-to-many

Answer: C

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 9

In Twitter, communication between the sender and the receiver of a tweet is a _____.

- A. one-to-one
- B. one-to-many
- C. many-to-one
- D. many-to-many

Answer: B

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 10

In Twitter, when a message is posted, _____

- A. all members in the twitter can see it.
- B. only followers of the sender can see it.
- C. only friends of the sender can see it.
- D. none of the above

Answer: B

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 11

In Twitter, _____.

- A. you find your followers
- B. followers find you
- C. neither a nor b
- D. either a or b

Answer: B

Section: Introduction to Social Media

Explanation/Reference:

QUESTION 12

In Twitter, to refer to another tweet, you can use _____.

- A. an ampersand
- B. a hashtag
- C. neither a nor b
- D. either a or b

Answer: D

Section: Introduction to Social Media

Explanation/Reference:

Exam T

QUESTION 1

The ethical principle that measures the consequences of an act is referred to as _____.

- A. moral rules
- B. utilization
- C. social contract
- D. none of the above

Answer: B

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 2

The ethical principle that dictates that a decision should be made according to the universally accepted principles of morality is referred to as _____.

- A. moral rules
- B. utilization
- C. social contract
- D. none of the above

Answer: A

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 3

The ethical principle that dictates that an act is ethical when a majority of people in society agrees with it is referred to as _____.

- A. moral rules
- B. utilization
- C. social contract
- D. none of the above

Answer: C

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 4

Which of the following is considered an intellectual property?

- A. a trademark
- B. a trade secret

- C. a patent
- D. all of the above

Answer: D

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 5

A company's product or service is identified as a _____.

- A. a trademark
- B. a trade secret
- C. a patent
- D. copyright

Answer: A

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 6

A right to a written or created work is referred to as .

- A. a trademark
- B. a trade secret
- C. a patent
- D. copyright

Answer: D

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 7

Information about a product is that is kept secret by the owner is referred to as a_____.

- A. a trademark
- B. a trade secret
- C. a patent
- D. copyright

Answer: B

Section: Social and Ethical Issues

Explanation/Reference:

QUESTION 8

A right to a monopoly to use a piece of intellectual property is referred to as _____.

- A. a trademark
- B. a trade secret
- C. a patent
- D. copyright

Answer: C

Section: Social and Ethical Issues

Explanation/Reference: