Khoa học / Khoa học máy tính

CSI 104 - FULL

⬈ 19 đang học   ⭐ 4.7 (145 đánh giá)

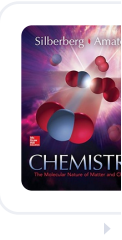## Những người khác cũng đã xem các sách giáo khoa sau   ✕

Introduction to Algorithms

3rd Edition • ISBN: 9780262033848 (4 đầu sách khác)
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✔ 889 lời giải

Silberberg • Amat
CHEMISTR

Tìm kiếm sách giáo khoa hoặc câu hỏi ›

Học sinh cũng đã xem các học phần:

EA201	CSI104 Kì 1	Port economic p3	PRN221
₂20 thuật ngữ	Giáo viên 302 thuật ngữ	14 thuật ngữ	140 thuậ
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Thuật ngữ trong học phần này (264)

The _____ model is the basis for today's computers. a. Leibnitz b. von Neumann c. Pascal d. Charles Babbage	B
In a computer, the _____ subsystem stores data and programs. a. ALU b. input/output c. memory d. control unit	C
In a computer, the _____ subsystem performs calculations and logical opera-tions. a. ALU b. input/output c. memory d. control unit	A

In a computer, the _____ subsystem accepts data and programs and sends pro-cessing results to output devices. a. ALU b. input/output c. memory d. control unit	B
In a computer, the _____ subsystem serves as a manager of the other subsys-tems. a. ALU b. input/output c. memory d. control unit	D
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	C
A step-by-step solution to a problem is called _____. a. hardware b. an operating system c. a computer language d. an algorithm	D
FORTRAN and COBOL are examples of _____. a. hardware b. operating systems c. computer languages d. algorithms	C
A 17th-century computing machine that could perform addition and subtraction was the _____. a. Pascaline b. Jacquard loom c. Analytical Engine d. Babbage machine	A
_____ 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	D

_____ is the design and writing of a program in structured form. a. Software engineering b. Hardware engineering c. Algorithm development d. Instructional architecture	A
The first electronic special-purpose computer was called _____. a. Pascal b. Pascaline c. ABC d. ENIAC	C
One of the first computers based on the von Neumann model was called _____. a. Pascal b. Pascaline c. ABC d. EDVAC	D
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	D
_____ separated the programming task from computer operation tasks. a. Algorithms b. Data processors c. High-level programming languages d. Operating systems	C
1. The base of the decimal number system is ___. a) 2 b) 8 c) 10 d) 16	C
2. The base of the binary number system is ___. a) 2 b) 8 c) 10 d) 16	A
3. The base of the octal number system is ___. a) 2 b) 8 c) 10 d) 16	B

4. The base of the hexadecimal number system is ___. a) 2 b) 8 c) 10 d) 16	D
5. When converting a decimal integer to base b, we repeatedly ___ b. a) divide b) multiply c) add to d) subtract from	A
6. When converting a binary fraction to decimal, we repeatedly ___. a) divide b) multiply c) add to d) subtract from	B
7. Which of the following representations is erroneous? a) (10111)2 b) (349)8 c) (3AB)16 d) 256	B
8. Which of the following representations is erroneous? a) (10211)2 b) (342)8 c) (EEE)16 d) 145	A
9. Which of the following representations is erroneous? a) (111)2 b) (346)8 c) (EEG)16 d) 221	C
10. Which of the following representations is erroneous? a) (110)2 b) (141)8 c) (EF)16 d) 22A	D
11. Which of the following is equivalent to 12 in decimal? a) (1110)2 b) (C)16 c) (15)8 d) None of the others	B

12. Which of the following is equivalent to 24 in decimal? a) (11000)2 b) (1A)16 c) (31)8 d) None of the others	A
13. Convert the binary number 1001 to decimal. The answer is: a) 7 b) 9 c) 11 d) 15	B
14. Convert the binary number 101010 to hexadecimal: a) 1A b) 1B c) 2A d) 2B	C
15. Convert the hexadecimal number 1B to decimal: a) 21 b) 23 c) 27 d) 29	C
A byte consists of _____ bits. a. 2 b. 4 c. 8 d. 16	C
In a set of 64 symbols, each symbol requires a bit pattern length of _____ bits. a. 4 b. 5 c. 6 d. 7	c
How many symbols can be represented by a bit pattern with ten bits? a. 128 b. 256 c. 512 d. 1024	d
If the ASCII code for E is 1000101, then the ASCII code for e is _____. An-swer the question without consulting the ASCII table. a. 1000110 b. 1000111 c. 0000110 d. 1100101	d

A 32-bit code called _____ represents symbols in all languages. a. ANSI b. Unicode c. EBCDIC d. Extended ASCII	b
An image can be represented in a computer using the _____ method. a. bitmap graphic b. vector graphic c. only d. either bitmap or vector graphic	d
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	a
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	b
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	a
Assume a new Excess system uses 17 bits to represent the exponent section. What is he bias value in this system? a. 17 b. 16 c. 65535 d. 65536	c
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	c

In an Excess conversion, we _____ the number to be converted. a. add the bias number to b. the bias number from c. multiply the bias number by d. divide	a
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	d
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	c
The combination of sign and mantissa of a real number in IEEE standard float-ing point format is stored as an integer in the _____ representation. a. unsigned b. sign-and-magnitude c. two's complement d. one's complement	b
1. _____ is an arithmetic operation. a. The exclusive OR b. The unary NOT c. Subtraction d. The binary AND	c
2. _____ is a logical bit operator. a. The exclusive OR b. The unary NOT c. The binary AND d. exclusive OR, unary NOT, or binary AND	d
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	c
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	c

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	c
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	b
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	d
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	b
9. If the exponent in Excess_127 is binary 10000101, the exponent in decimal is _____. a. 6 b. 7 c. 8 d. 9	a
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	c
11. _____ operator (s) takes two inputs to produce one output. a. Only AND b. Only OR c. Only XOR d. AND, OR, or XOR	d

12. The unary _____ operator inverts its single input. a. AND b. OR c. NOT d. XOR	c
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	d
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	c
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	b
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	a
17. We use a bit pattern called a _____ to modify another bit pattern. a. mask b. carry c. float d. byte	a
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	c
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	a

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	b
1. The TCP/IP model has _____ layers. a. five b. six c. seven d. eight	a
2. The _____ layer of the TCP/IP protocol suite provides services for end users. a. data-link b. transport c. application d. physical	c
3. The _____ layer of the TCP/IP protocol suite transmits a bit stream over a physical medium. a. physical b. data-link c. network d. transport	a
4. The _____ layer of the TCP/IP protocol suite is responsible for node-to-node delivery of a frame between two adjacent nodes. a. transport b. network c. data-link d. session	c
5. The _____ layer of the TCP/IP protocol suite is responsible for source-to-destination delivery of the entire message. a. transport b. network c. data-link d. session	b
6. What is the domain name in the e mail address kayla@nasa.gov? a. kayla b. kayla@nasa.gov c. nasa.gov d. gov	c
7. Which physical topology uses a hub or switch? a. bus b. ring c. star d. bus and ring	c

8. IP addresses are currently _____ bits in length. a. 4 b. 8 c. 32 d. 40	c
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	d
10. _____ is a protocol for file transfer. a. FTP b. SMTP c. TELNET d. HTTP	a
11. _____ is a protocol for e mail services. a. FTP b. SMTP c. TELNET d. HTTP	b
12. _____ is a protocol for accessing and transferring documents on the WWW. a. FTP b. SMTP c. TELNET d. HTTP	d
13. Every computer looking to access the Internet would be known as this a. client b. desktop c. hub d. server	a
14. Identifies company or commercial sites a. .org b. .com c. .gov d. .edu	b
15. what is indicated when the domain name has only two letters like .us, .uk, .au, .mx, or .ca a. invalid domain b. private domain c. secure domain d. country domain	d
1. _____ is a program that facilitates the execution of other programs. a. An operating system b. Hardware c. A queue d. An application program	a

2. _____ supervises the activity of each component in a computer system. a. An operating system b. Hardware c. A queue d. An application program	a
3. Multi-programming requires a _____ operating-system. a. batch b. time-sharing c. parallel d. distributed	b
4. _____ is multi-programming with swapping. a. Partitioning b. Paging c. Demand paging d. Queuing	c
5. _____ is multi-programming without swapping. a. Partitioning b. Virtual memory c. Demand paging d. Queuing	a
6. In _____, only one program can reside in memory for execution. a. mono-programming b. multi-programming c. partitioning d. paging	a
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	a
8. In paging, a program is divided into equally sized sections called _____. a. pages b. frames c. segments d. partitions	a
9. In _____, the program can be divided into differently sized sections. a. partitioning b. paging c. demand paging d. demand segmentation	d

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	c
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	c
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	c
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	a
14. Every process is _____. a. only a job b. only a program c. only a partition d. a job and a program	d
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	a
16. The _____ scheduler moves a process from one process state to another. a. job b. process c. virtual d. queue	b
17. To prevent _____, an operating system can put resource restrictions on pro-cesses. a. starvation b. synchronization c. paging d. deadlock	d

18. ____ can occur if a process has too many resource restrictions. a. Starvation b. Synchronization c. Paging d. Deadlock	a
19. The ____ manager is responsible for archiving and backup. a. memory b. process c. device d. file	d
20. The ____ manager is responsible for access to I/O devices. a. memory b. process c. device d. file	c
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	d
2. There are ____ basic constructs in computer -science. a. one b. two c. three d. four	c
3. The ____construct tests a condition. a. sequence b. decision c. repetition d. flow	b
4. The ____ construct uses a set of actions one after another. a. sequence b. decision c. repetition d. flow	a
5. The ____ construct handles repeated actions. a. sequence b. decision c. repetition d. flow	c

6. _____ is a pictorial representation of an algorithm. a. A UML diagram b. A program c. Pseudocode d. An algorithm	a
7. _____ is an English-language-like representation of code. a. A UML diagram b. A program c. Pseudocode d. An algorithm	c
8. _____ is a basic algorithm that adds a list of numbers. a. Summation b. Product c. Smallest d. Largest	a
9. _____ is a basic algorithm that multiplies a list of numbers. a. Summation b. Product c. Smallest d. Largest	b
10. _____ is a basic algorithm that arranges data according to its value. a. Inquiry b. Sorting c. Searching d. Recursion	b
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	d
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	c
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	a

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	b
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	b
16. We use a ____ search for an unordered list. a. sequential b. binary c. bubble d. insertion	a
17. We use a ____ search for an ordered list. a. sequential b. binary c. bubble d. insertion	b
18. ____ is a process in which an algorithm calls itself. a. Insertion b. Searching c. Recursion d. Iteration	c
19. What is a linear search? a. A sequential method for sorting elements within a list. b. A sequential method for sorting and finding an element within a list. c. A sequential method for finding an element within a list. d. A sequential method that reduces the size of a list.	c
20. How many checks will a linear search take to find number 6 in the list? 3, 4, 7, 6, 5, 1 a. 3 b. 7 c. 5 d. 4	d

1. The only language understood by computer hardware is a _____ language. a. machine b. symbolic c. high-level d. natural	a
2. C, C++, and Java can be classified as _____ languages. a. machine b. symbolic c. high-level d. natural	c
3. FORTRAN is a(n) _____ language. a. procedural b. functional c. declarative d. object-oriented	a
4. Pascal is a(n) _____ language. a. procedural b. functional c. declarative d. object-oriented	a
5. Java is a(n) _____ language. a. procedural b. functional c. declarative d. object-oriented	d
6. LISP is a(n) _____ language. a. procedural b. functional c. declarative d. object-oriented	b
7. _____ is a common language in the business -environment. a. FORTRAN b. C++ c. C d. COBOL	d
8. _____ is a popular object-oriented language. a. FORTRAN b. COBOL c. Java d. LISP	c
9. A _____ program can be either an application or an applet. a. FORTRAN b. C++ c. C d. Java	d

10. LISP and Scheme are both _____ languages. a. procedural b. functional c. declarative d. object-oriented	b
1. One phase in system development is _____. a. analysis b. application c. designing d. collecting	a
2. Defining the users, requirements, and methods is part of the _____ phase. a. analysis b. design c. implementation d. testing	a
3. In the system development process, writing the program is part of the _____ phase. a. analysis b. design c. implementation d. testing	c
4. In the system development process, structure charts are tools used in the _____ phase. a. analysis b. design c. implementation d. testing	b
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	d
6. _____ is the breaking up of a large project into smaller parts. a. Coupling b. Incrementing c. Obsolescence d. Modularization	d
7. _____ is a measure of how tightly two modules are bound to each other. a. Modularity b. Coupling c. Interoperability d. Cohesion	b

8. _____between modules in a software system must be minimized. a. Coupling b. Cohesion c. Neither coupling nor cohesion d. Both coupling and cohesion	a
9. _____between modules in a software system must be maximized. a. Coupling b. Cohesion c. Neither coupling nor cohesion d. Both coupling and cohesion	b
10. What is the waterfall model? a. A phase cannot be started until the previous phase is completed b. A phase can be started until the previous phase is completed c. The development phase begins simultaneously d. The development process starts at the design phase	a
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	d
2. An array that consists of just rows and columns is a _____ array. a. one-dimensional b. two-dimensional c. three-dimensional d. multidimensional	b
3. Each element in a record is called _____. a. a variable b. an index c. a field d. a node	c
4. All the members of a record must be _____. a. the same type b. related types c. integer type d. character type	b
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	c

6. In a linked list, each element contains _____. a. only data b. only a link c. neither data nor a link d. data and a link	d
7. The _____ is a pointer that identifies the next element in the linked list. a. link b. node c. array d. data	a
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	a
9. An empty linked list consists of _____. a. a node b. two nodes c. data and a link d. a null head pointer	d
10. To traverse a list, you need a _____ pointer. a. null b. walking c. beginning d. insertion	b
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	b
2. A stack is a _____ structure. a. FIFO b. LIFO c. DIFO d. SIFO	b
3. A(n) _____ list is also known as a queue. a. LIFO b. FIFO c. unordered d. ordered	b
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	d

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	a
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	a
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	c
8. In a binary tree, each node has _____ two subtrees. a. more than b. less than c. at most d. at least	c
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	c
10. In _____ traversal of a binary tree, the right subtree is processed last. a. preorder b. inorder c. postorder d. any order	b
12. In postorder traversal of a binary tree, the left subtree is processed _____. a. first b. second c. last d. after the right subtree	a
14. In an inorder traversal of a binary tree, the root is processed _____. a. first b. second c. last d. two times	b

15. What is a full binary tree? a. Each node has exactly zero or two children b. Each node has exactly two children c. All the leaves are at the same level d. Each node has exactly one or two children	a
1. _____ file can be accessed randomly. a. A sequential b. An indexed c. A hashed d. Any	d
2. _____ file can be accessed sequentially. a. A sequential b. An indexed c. A hashed d. No	a
3. When a sequential file is updated, the _____ file gets the actual update. a. new master b. old master c. transaction d. error report	a
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	d
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	c
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	a
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	a

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	c
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 d. and random data file	d
10. The index of an indexed file has _____ fields. a. two b. three c. four d. any number of	a
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	d
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	b
13. In the _____ hashing method, there are no synonyms or collisions. a. direct b. modulo division c. division remainder d. digit extraction	a
14. _____ are keys that hash to the same location in the data file. a. Collisions b. Buckets c. Synonyms d. Linked lists	c

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	a
16. The address produced by a hashing algorithm is the _____ address. a. probe b. synonym c. collision d. home	d
17. The _____ area is the file area that contains all the home addresses. a. probe b. linked c. hash d. prime	d
18. In the _____ collision resolution method, we try to put data that cannot be placed in location 123 into location 124. a. open addressing b. linked list c. bucket hashing d. random hashing	a
19. Which one of the following explains the sequential file access method? a. random access according to the given byte number b. read bytes one at a time, in order c. read/write sequentially by record d. read/write randomly by record	b
20. The data structure used for file directory is called _____ a. mount table b. hash table c. file table d. process table	b
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	c

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	c
3. The _____ level of a three-level DBMS architecture defines the logical view of the data. a. external b. conceptual c. internal d. physical	b
4. The data model and the schema of a DBMS are often defined at the _____ level. a. external b. conceptual c. internal d. physical	b
5. In a three-level DBMS architecture, the _____ level interacts directly with the users. a. external b. conceptual c. internal d. physical	a
6. Of the various database models, the _____ model is the most prevalent today. a. hierarchical b. network c. relational d. linked list	c
7. Each column in a relation is called _____. a. an attribute b. a tuple c. a union d. an attitude	a
8. Each row in a relation is called _____. a. an attribute b. a tuple c. a union d. an attitude	b
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	a

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	c
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	a
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	c
13. The operation that takes two relations and combines them based on common attributes is the _____ operation. a. join b. project c. union d. intersection	a
14. If you need to delete an attribute in a relation, you can use the _____ operation. a. join b. project c. union d. intersection	b
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. select b. union c. project d. intersection	d
16. Which of the following is a unary operator? a. intersection b. union c. join d. project	d

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	b
2. A string of one hundred 0s is replaced by two markers, a 0, and the number 100. This is __. a. run-length encoding b. Morse coding c. Huffman encoding d. Lempel Ziv encoding	a
3. __ is an example of lossy compression. a. Huffman encoding b. Lempel Ziv encoding c. Run-length encoding d. JPEG	d
4. In a __ data compression method, the received data is an exact copy of the original message. a. lossless b. lossy c. JPEG d. MPEG	a
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 MPEG d. In MP3, JPEG, or MPEG	d
6. __ encoding is a lossless data compression method. a. Only Huffman b. Only Run-length c. Only LZ d. Huffman, run-length, or LZ	d
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	a
8. In __ encoding, PPPPPPPPPPPPPPP can be replaced by P15. a. Huffman b. run-length c. LZ d. MPEG	b

9. LZ encoding requires __. a. only a dictionary b. only a buffer c. only an algorithm d. a dictionary, a buffer, and an algorithm	d
10. JPEG encoding involves __, a process that reveals the redundancies in a block. a. blocking b. the discrete cosine transform c. quantization d. vectorization	b
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. DCT c. quantization d. vectorization	a
12. The last step in JPEG, __, removes redundancies. a. blocking b. quantization c. compression d. vectorization	c
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	c
14. What is compression? a. To convert one file to another b. To reduce the size of data to save space c. To minimize the time taken for a file to be downloaded d. To compress something by pressing it very hard	b
15. Which of these terms is a type of data compression? a. resolution b. zipping c. inputting d. caching	b
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	c

2. Which of the following attacks is threatening integrity? a. Masquerading b. Traffic Analysis c. Denial of service d. Encoding	a
3. Which of the following attacks is threatening availability? a. Replaying b. Modification c. Denial of service d. Decoding	c
4. _____ means concealing the contents of a message by enciphering. a. Steganography b. Cryptography c. Compressing d. Authentication	b
5. _____means concealing the message by covering it with something else. a. Cryptography b. Steganography c. Compressing d. Authentication	b
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	a
7. In _____ cryptography, the same key is used in both directions. a. symmetric-key b. asymmetric-key c. public-key d. open-key	a
8. _____ cryptography is often used for long messages. a. Symmetric-key b. Asymmetric-key c. Public-key d. Open-key	a
9. _____ cryptography is often used for short messages. a. Symmetric-key b. Asymmetric-key c. Secret-key d. Open-key	b

10. _____means that the sender and the receiver expect confidentiality. a. Nonrepudiation b. Integrity c. Authentication d. encryption and decryption	d
11. _____ means that the data must arrive at the receiver exactly as they were sent. a. Nonrepudiation b. Message integrity c. Authentication d. Secrecy	b
12. _____ can provide authentication, integrity, and nonrepudiation for a message. a. Encryption/decryption b. Digital signature c. Compression d. Key-exchange	b
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	a
14. In _____ cryptography, everyone has access to everyone's public key. a. symmetric-key b. asymmetric-key c. secret-key d. private-key	b
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	b
1. The _____ statement adds 1 to the variable. a. increment b. decrement c. loop d. complement	a
2. The _____ statement repeats one or more actions. a. increment b. decrement c. loop d. complement	c

3. The _____ statement subtracts 1 from the variable. a. increment b. decrement c. loop d. complement	b
4. To clear a variable, we use the _____ statement(s). a. increment b. decrement c. loop d. decrement and loop	d
5. To assign a number to a variable, we use the _____ statement(s). a. increment b. decrement c. loop d. decrement and loop	a
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	d
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	c
8. In a Turing machine, the _____ holds a sequence of characters. a. disk b. tape c. controller d. read/write head	b
9. The _____ is the theoretical counterpart of the CPU. a. disk b. tape c. controller d. read/write head	c
10. The controller has _____ states. a. three b. four c. a finite number of d. an infinite number of	c

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	a
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	c
13. We use ____ to denote a program's complexity. a. the Turing number b. big-O notation c. factorials d. the Simple Language	b
14. The complexity of a problem is O (log10 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	d
15. When does the code block following while(x<100) execute? a. When x is less than one hundred b. When x is greater than one hundred c. When x is equal to one hundred d. While it wishes	a
1. The main foundation of thinking machines came from: a. Sir Isaac Newton b. Gottfried W. Leibniz c. Alan Turing d. John McCarthy	d
2. The term Artificial Intelligence (AI) was first coined by: a. Alan Turing b. John McCarthy c. Steven Spielberg d. Richard H. Richen	b
3. Two programing languages specifically designed for AI are: a. C and C++ b. Java and C++ c. LISP and PROLOG d. FORTRAN and COBOL	c

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	c
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?	d
6. Two quantifiers " and $ are used in: a. propositional logic b. predicate logic c. atomic sentences d. conclusion of any argument	b
7. To find the depth of an object, we use: a. edge detection b. segmentation c. stereo vision d. shading	c
8. To find the orientation of an object, we use: a. stereo vision b. motion c. texture d. segmentation	c
9. In language understanding, parsing a sentence is part of: a. speech recognition b. syntactic analysis c. semantic analysis d. pragmatic analysis	b
10. 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	a
1. In Facebook, friendship is a _____ relationship. a. one-to-one b. one-to-many c. many-to-one d. many-to-many	a
2. Communication in Facebook is a _____ relationship. a. one-to-one b. one-to-many c. many-to-one d. many-to-many	b

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 for log-in	c
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 above	d
5. When you are in Facebook, you can _____. a. post news. b. read news c. neither a nor b d. both a and b	d
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	c
7. In Twitter, the relationship between member is based on: a. friendship b. following c. either a or b d. both a and b	b
8. In Twitter, follower-member is a _____ relationship. a. one-to-one. b. one-to-many c. many-to-one d. many-to-many	c
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	b
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	b