ROLL NUMBER

WRITTEN TEST FOR THE POST OF TECHNICAL ASSISTANT (COMPUTER) - A

DATE: 12/04/2023   TIME: 10 To 11.30

DURATION: 90 MINUTES   Total Marks: 100

INSTRUCTIONS TO THE CANDIDATES

1. Write your Roll Number on the top of the Question Booklet and in the answer sheet.

2. Each question carries 1 mark.

3. There will not be any Negative Marking.

4. Darken only the bubble corresponding to the most appropriate answer.

5. Over-writing is not permitted.

6. Candidate should sign in the question paper and answer sheet.

7. No clarifications will be given.

8. Candidate should hand over the answer sheet to the invigilator before leaving the examination hall.

Signature of the Candidate

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12/4/2023

Question Paper for Technical Assistant Computer

1) Which of the following is a type of encryption that uses a single key for both encryption and decryption?

    a. asymmetric encryption
    b. symmetric encryption
    c. public key encryption
    d. private key encryption

2) Codename for SQL Server 2012 is _____

    a.   Kilimanjaro
    b.   Katmai
    c.   Denali
    d.   Hekaton

3). Which exception class Handles errors generated during typecasting?

    a.   System.NullReferenceException
    b.   System.StackOverflowException
    c.   System.InvalidCastException
    d.   System.OutOfMemoryException

4). Abstract class contains _____.

    a.   Abstract methods
    b.   Non-Abstract methods
    c.   Both
    d.   None

5). The programming language that has the ability to create new data types is called____.

    a. Overloaded
    b. Encapsulated
    c. Reprehensible
    d. Extensible

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6) Which of the following is the original creator of the C++ language?

   a. Dennis Ritchie

   b. Ken Thompson

   c. Bjarne Stroustrup

   d. Brian Kernighan

7). If we stored five elements or data items in an array, what will be the index address or the the array's last data item?

     a. 3

     b. 5

     c. 4

     d. 88

8) Which of the following is the correct definition of sorting?

   a. Sorting is a type of process in which the data or information is ordered into a specific

     order - example increasing orders, decreasing orders.

   b. Sorting information or data only in increasing order

   c. Sorting is a type of process in which data elements are modified or manipulated

   d. Sorting information or data only in decreasing order

9). Which of the following offers a programmer the facility of using a specific class object into other classes?

   a. Polymorphism

   b. Abstraction

   c. Inheritance

   b. Composition

10). Which of the following is not a kind of inheritance?
     a.   Distributed
     b.   Multiple
     c.   Multi-level
     d.   Hierarchal

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11). In the JavaScript, which one of the following is not considered as an error?

    a.   Syntax error
    b.   Missing of semicolons
    c.   Division by zero
    d.   Missing of Bracket

12) Regarding Computer architecture, which of the architecture is power efficient?
    a. RISC
    b. ISA
    c. IANA
    d. CISC

13) Which of the following HTML tag is used to display the text with scrolling effect?

    a. <marquee>
    b. <scroll>
    c. <div>
    d. <href>

14) Which of the following architecture is suitable for a wide range of data types?
    a. IA-32
    b. ARM
    c. ASUS firebird
    d. 68000

15) Which Crystal Reports feature can you use to limit the number of records included in a report?

    a.   SQL Expression
    b.   Formula Workshop
    c.   Preview Sample
    d.   Record Selection Formula

16) The data is transferred over the RAMBUS as _____
    a. Blocks
    b. Swing voltages
    c. Bits
    d. Packets

17) Java: How many threads can be executed at a time?

    a. Only one thread
    b. Multiple threads
    c. Only main (main () method) thread
    d. Two threads

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18). During a write operation if the required block is not present in the cache then _____ occurs.

    a. Write miss
    b. Write latency
    c. Write hit
    d. Write delay

19) Which of the following is the correct syntax for referring the external style sheet?

    a.   <style src = example.css>
    b.   <style src = "example.css" >
    c.   <stylesheet> example.css </stylesheet>
    d.   <link rel="stylesheet" type="text/css" href="example.css">

20) Which of the following is NOT a level of data abstraction?
    a. Physical Level
    b. Critical Level
    c. Logical Level
    d. View Level

21). Which of the following are the five built-in functions provided by SQL?

    a.count, sum, avg, max, min
    b. sum, avg, min, max, mult
    c. sum, avg, mult, div, min
    d. sum, avg, min, max, name

22) To remove duplicate rows from the results of an SQL SELECT statement, the _____ qualifier specified must be included.

    a. only
    b. unique
    c. distinct
    d. single

23) Which of the following is not binary operation?
    a. Union
    b. Project
    c. Set Difference
    d. Cartesian Product

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24) Which of the following is a technique used to ensure the integrity of data during transmission?

    a. encryption
    b. steganography
    c. digital signature
    d. hashing

25) Which of the following is not a logical data-base structure?
    a. Tree
    b. Relational
    c. Network
    d. Chain

26) Which of the following provides access control based on the position an individual fills in an organization?

    a. mandatory access control
    b. role-based access control
    c. discretionary access control
    d. attribute-based access control

27) A large computer information system maintains many different computer files. Which amongst them is called a perpetual file?
    a. Specialized file
    b. Log file
    c. Master file
    d. Update file

28) What is the name given to the database management system which is able to handle full text data, image data, audio and video?
    a. Full media
    b. Graphics media
    c. Multimedia
    d. Hypertext

29) _____ is an internet scam done by cyber-criminals where the user is convinced digitally to provide confidential information.
    a. Phishing attack
    b. DoS attack
    c. Website attack
    d. MiTM attack

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30) Which of the following is a type of encryption that uses two different keys for encryption and decryption?

    a. symmetric encryption
    b. asymmetric encryption
    c. public key encryption
    d. private key encryption

31) Which of the following is a widely used cryptographic hash function that produces a 160-bit hash value?

    a. md5
    b. sha-1
    c. sha-256
    d. hmac

32) Which of the following is a widely used encryption standard that uses a 128-bit block size and key sizes of 128, 192, or 256 bits?

    a. des (data encryption standard)
    b. aes (advanced encryption standard)
    c. blowfish
    d. idea (international data encryption algorithm)

33) Which of the following is a type of encryption that is resistant to attacks by quantum computers?

    a. rsa (rivest-shamir-adleman)
    b. elliptic curve cryptography (ecc)
    c. quantum key distribution (qkd)
    d. post-quantum cryptography (pqc)

34) A data dictionary is a repository that manages .....
    a. Memory
    b. Metadata
    c. Spell Checker
    d. Data Validator

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35) What is the difference between a virus and a worm?

    a. A virus can infect the boot sector but a worm cannot.
    b. A worm spreads by itself but a virus must attach to an e-mail.
    c. A worm spreads by itself but a virus must attach to another program.
    d. A virus is written in C++ but a worm is written in shell code.

36) What is the process of hiding text within an image called?
    a. Steganography
    b. Encryption
    c, Spyware.
    d. Keystroke logging

37) A virus that can cause multiple infections is known as what type of virus?

    a. Multipartite
    b. Stealth
    c. Camouflage
    d. Multi-infection

38) What is not a role of encryption?

    a. It is used to protect data from unauthorized access during transmission
    b. It is used to ensure user authentication
    c. It is used to ensure data integrity
    d. It is used to ensure data corruption doesn't happen

39) Data _____ is used to ensure confidentiality.

    a. Encryption
    b. Locking
    c. Deleting
    d. Backup

40 Which of the following is not one of the three types of access controls?

    a. Administrative
    b. Personnel
    c. Technical
    d. Physical

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41) Devices on one network can communicate with devices on another network via a
    a. File server
    b. Utility server
    c. Printer server
    d. Gateway

42) _____ is a special form of attack using which hackers' exploit – human psychology.
    a. Cross Site Scripting
    b. Insecure network
    c. Social Engineering
    d. Reverse Engineering

43) Which of the following is the least secure method of authentication?
    a. Key card
    b. fingerprint
    c. retina pattern
    d. Password

44). Which of the following is a widely used access control model that uses security labels to enforce access policies?

    a. discretionary access control (dac)
    b. role-based access control (rbac)
    c. mandatory access control (mac)
    d. attribute-based access control (abac)

45) A ……. is a method in which computer security mechanism is bypassed untraceable for accessing the computer or its information.
    a. front-door
    b. backdoor
    c. clickjacking
    d. key-logging

46) Which of the following is a type of attack that floods a network or server with traffic in an attempt to disrupt service?

    a. virus attack
    b. trojan attack
    c. denial of service (dos) attack
    d. spyware attack

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47) Which of the following is a network security device that monitors and controls incoming and outgoing network traffic?

    a. router
    b. switch
    c. firewall
    d. hub

48) Which of the following statement best define Vue.js?

    a. Vue.js is an open-source JavaScript library that is used for developing user interfaces.
    b. Vue.js is an open-source front-end JavaScript framework used for developing user interfaces.
    c. Vue.js is an open-source, cross-platform, JavaScript run-time situation that performs the JavaScript program outside a web browser.
    d. Vue.js is a JavaScript library constructed to facilitate HTML DOM tree traversal and administration, event handling, CSS activity, and Ajax.

49). Which of the following is not a variable scope in Hypertext Preprocessor?

    a. Extern
    b. Local
    c. Static
    d. Global

50) Which of the following is not a feature of Yii?

    a. Yii implements the MVC architectural pattern
    b. It is extremely extensible.
    c. Yii provides single-tier caching support.
    d. Yii provides RESTful API development support.

51). Which of the following is a widely used relational database management system?

    a. mongodb
    b. redis
    c. sqlite
    d. mysql

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52). Which of the following is a popular open-source content management system?
- a. drupal
- b. magento
- c. shopify
- d. wix

53)Which of the following is a widely used e-commerce platform based on a content management system?

- a. woocommerce
- b. shopify
- c. magento
- d. prestashop

54) PHP frameworks typically follow the---------design pattern. This concept separates the manipulation of data from its presentation.
- a. Object-Relational Mapping
- b. object random map
- c. Model View Controller
- d. command link interface

55)Which of the following is a PHP framework used for building scalable and maintainable web applications?

- a. codeigniter
- b. laravel
- c. symfony
- d. zend framework

56)Which of the following is a disadvantage of the Waterfall model?

- a. it is easy to understand and implement
- b. it is ideal for projects with well-defined requirements
- c. it does not allow for changes once a phase is completed
- d. it allows for frequent testing and feedback

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57) What is the purpose of requirements analysis in software development?

    a. to determine the feasibility of the project
    b. to determine the cost of the project
    c. to determine the schedule of the project
    d. to determine the needs and constraints of the project

58) Which of the following is NOT a common programming language used for software implementation?

    a. python
    b. java
    c. html
    d. c++

59) When would the testing have been stopped?

    a. When all the tests run
    b. When the faults have been fixed
    c. When the time completed
    d. When all the risk are resolved

60) Which of the following is a software development metric used to measure the size of a project?

    a. lines of code
    b. number of users
    c. number of features
    d. number of bugs

61) Which of the following is a design pattern commonly used in GUI programming that separates the user interface from the application logic?

    a. model-view-controller (mvc)
    b. singleton
    c. observer
    d. factory method

62) Which of the following is NOT a feature of advanced GUI programming?

    a. internationalization
    b. accessibility
    c. multithreading
    d. machine learning

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63) Which of the following is not included in DML (Data Manipulation Language)?
   a. UPDATE
   b. CREATE
   c. INSERT
   d. DELETE

64) Which of the following is a common method for connecting to a database in a GUI application?

   a. odbc
   b. ftp
   c. smtp
   d. http

65). Which of the following is NOT a common format for generating reports?

   a. pdf
   b. csv
   c. html
   d. mp3

66) Programming in C: Which of the following is true about the "volatile" keyword in C programming language?

   a. it specifies that a variable can be modified by multiple threads.
   b. it specifies that a variable should be stored in a register.
   c. it specifies that a variable's value can be changed by hardware or other processes.
   d. it specifies that a variable is constant and cannot be modified.

67) Which of the following command is used to obtain the structure of an Oracle table?

   a. DESC TABLE [TableName].
   b. STRUCTURE [TableName].
   c. DESCRIBE [TableName].
   d. DESCRIBE STRUCTURE [TableName].

68) Computer Architecture: Which of the following is NOT a function of a control unit in a processor?

   a. decoding instructions
   b. fetching instructions
   c. executing instructions
   d. storing data in registers

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69)Data Communication: Which of the following is true about multiplexing in data communication?

    a. it allows multiple devices to share the same physical medium.
    b. it allows multiple protocols to be used on the same network.
    c. it ensures data integrity by providing error detection and correction mechanisms.
    d. it provides a means of secure communication by encrypting data.

70)Operating Systems: Which of the following is NOT a benefit of virtual memory in a computer system?

    a. it allows programs to use more memory than is physically available.
    b. it increases the speed of the computer by reducing the number of i/o operations.
    c. it protects programs from accessing memory that they should not access.
    d. it allows for the sharing of memory between processes.

71)Data Structures: Which of the following is NOT a common application of a tree data structure?

    a. representing a hierarchy of categories or topics
    b. implementing search algorithms like binary search
    c. storing data in a sorted manner
    d. implementing stacks and queues

72) Computer System Hardware: Which of the following is true about solid-state drives (SSDs) compared to hard disk drives (HDDs)?
    a. ssds are more reliable and have a longer lifespan.
    b. ssds are less expensive than hdds.
    c. ssds have a slower read/write speed than hdds.
    d. ssds have a larger storage capacity than hdds.

73)What is the purpose of the BIOS (Basic Input/Output System) in a computer system?

    a. To manage the computer's memory
    b. To manage the computer's power supply
    c. To manage the computer's input/output devices
    d. To manage the computer's boot process

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74) Which data structure is best suited for implementing a LIFO (Last-In-First-Out) structure?

    a. Queue
    b. Stack
    c. Linked List
    d. Binary Tree

75) Which of the following sorting algorithms has a worst-case time complexity of $O(n^2)$?

    a. Merge Sort
    b. Quick Sort
    c. Insertion Sort
    d. Radix Sort

76) In a binary search tree, which traversal method visits the nodes in ascending order?

    a. In-order traversal
    b. Pre-order traversal
    c. Post-order traversal
    d. Level-order traversal

77) What is the time complexity of inserting an element at the beginning of a singly linked list?

    a. $O(1)$
    b. $O(n)$
    c. $O(\log n)$
    d. $O(n^2)$

78) The SQL statement SELECT SUBSTR('123456789', INSTR('abcabcabc', 'b'), 4) FROM DUAL;
    a. 2345
    b. 456789
    c. 6789
    d. 1234

79) Which data structure is used in Breadth-First Search (BFS) algorithm?

    a. Stack
    b. Queue
    c. Linked List
    d. Binary Tree

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80) Which of the following CSS property is used to make the text bold?
- a. text-decoration: bold
- b. font-weight: bold
- c. font-style: bold
- d. text-align: bold

81) In PHP, which one of the following function is capable of reading a file into a string variable?
- a. file_contents()
- b. file_get_contents()
- c. file_content()
- d. file_get_content()

82) What is a process in an operating system?

- a. A program in execution
- b. A type of computer hardware
- c. A file on the computer
- d. A user account on the computer

83) What is CPU scheduling in an operating system?
- a. The process of deciding which program to run next
- b. The process of storing data in memory
- c. The process of managing files on the computer
- d. The process of managing network connections

84) Which of the following layer of the OSI model is responsible for error detection and correction in data link protocols?

- a. physical layer
- b. data link layer
- c. network layer
- d. transport layer

85) Which of the following media is an example of guided transmission media?

- a. microwave
- b. fiber-optic cable
- c. satellite
- d. infrared

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86) Which of the following protocols operates at the transport layer of the OSI model?

    a. ftp
    b. arp
    c. icmp
    d. smtp

87) Which of the following is an advantage of digital transmission over analog transmission?

    a. greater noise immunity
    b. simpler encoding and decoding schemes
    c. greater range
    d. lower transmission delay

88) Which of the following is NOT a property of a relation in a relational database?

    a. Atomicity
    b. Consistency
    c. Integrity
    d. Completeness

89) Which variable is used to collect form data sent with both the GET and POST methods?
    a. $_BOTH
    b. $REQUEST
    c. $_REQUEST
    d. $BOTH

90) Which of the following is a valid SQL command to add a column called "phone_number" to a table called "customers"?

    a. ALTER TABLE customers ADD COLUMN phone_number varchar(20);
    b. ALTER TABLE customers MODIFY COLUMN phone_number varchar(20);
    c. ALTER TABLE customers CHANGE COLUMN phone_number varchar(20);
    d. ALTER TABLE customers RENAME COLUMN phone_number TO
       new_phone_number;

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91) Which of the following is a benefit of using transactions in database systems?

a. Improved query performance
b. Reduced data redundancy
c. Improved data security
d. Data consistency and integrity

92) In database design, what is the purpose of normalization?
a. To increase data redundancy
b. To reduce data redundancy
c. To reduce the number of tables in a database
d. To increase the complexity of the database schema

93) Which of the following is a valid SQL command to delete all rows from a table called "employees"?

a. DELETE ALL FROM employees;
b. DELETE employees;
c. TRUNCATE TABLE employees;
d. DROP TABLE employees;

94) What is the function of the control unit in a computer processor?

a. To store data temporarily
b. To control the flow of data between the CPU and other devices
c. To perform arithmetic and logical operations
d. To manage memory access

95) Which component is responsible for executing instructions in a computer?

a. CPU
b. RAM
c. Hard disk
d. Input/output devices

96) What is the purpose of parallel processing in a computer?

a. To improve the performance of the processor
b. To manage memory access
c. To control the flow of data between the CPU and other devices
d. To store data and programs

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97) Which of the following is an example of a one-dimensional array in C?

      a. int matrix[2][2]
      b. char string[10][]
      c. double data[5]
      d. struct employee employees[100]

98) Setting an inline-block in CSS requires which of the following properties?
      a. display
      b. color
      c. block
      d. text

99) Which of the following CSS property specifies the type of list item marker?
      a. list
      b. list-style-type
      c. ul
      d. ol

100) Which of the following is a process of verifying that a user is who they claim to be?
      a. authorization
      b. authentication
      c. encryption
      d. decryption

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FINAL KEY FOR TECHNICAL ASSISTANT COMPUTER

1	b	51	d
2	c	52	a
3	c	53	b
4	c	54	c
5	d	55	b
6	c	56	c
7	c	57	d
8	a	58	c
9	d	59	d
10	a	60	a
11	c	61	a
12	a	62	d
13	a	63	b
14	a	64	a
15	d	65	d
16	b	66	c
17	b	67	c
18	a	68	d
19	d	69	a
20	b	70	b
21	a	71	d
22	c	72	a
23	b	73	d
24.	d	74	b
25	d	75	c
26	b	76	a
27	c	77	a
28	c	78	a
29	a	79	b
30	b	80	b
31	b	81	b
32	b	82	a
33	d	83	a
34	b	84	b
35	c	85	b
36	a	86	a
37	a	87	a
38	d	88	d
39	a	89	c
40	b	90	a
41	d	91	d
42	c	92	b
43	d	93	c
44	c	94	b
45	b	95	a
46	c	96	a
47	c	97	c
48	b	98	a
49	a	99	b
50	c	100	b

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