# COMBINED TECHNICAL SERVICES EXAMINATION

# (NON-INTERVIEW POSTS)

# COMPUTER BASED TEST

# PAPER – II – COMPUTER APPLICATION

# (PG DEGREE STANDARD) (CODE: 289)

1. Relocatable programs

(A) cannot be used with fixed partitions
(B) can be loaded almost anywhere in memory
(C) do not need a linker
(D) can be loaded only at one specific location
(E) Answer not known

2. A linker program

(A) places the program in the memory for the purpose of execution
(B) relocates the program to execute from the specific memory area allocated to it
(C) link the program with other programs needed for its execution
(D) interfaces the program with the entities generating its input data
(E) Answer not known

3. In an absolute loading scheme, which loader function is accomplished by assembler

(A) linking
(B) loading
(C) allocation
(D) reallocation
(E) Answer not known

4. The following ———— file is an output of the assembler.

(A) Program file
(B) Object file
(C) Date file
(D) Task file
(E) Answer not known

5. Choose the option of task not performed by the macro processor

(A) Recognize macro definition
(B) Recognize calls
(C) Compile the macro
(D) Expand calls and substitute arguments
(E) Answer not known

6. In a two pass assembler, the task of the second pass is to

(A) separate the symbol, mnemonic opcode and operand fields
(B) build symbol table
(C) construct intermediate code
(D) synthesize the target program
(E) Answer not known

7. PL/I provides the following mechanisms for reserving the data space, match it :

| | |
|---|---|
| (a) Static | 1. Allows the programmer to control the space allocation |
| (b) Automatic | 2. Scope of declaration of variables |
| (c) Controlled | 3. Compile time |
| (d) Block structure | 4. Storage is allocated when block is referenced |

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (A) | 4 | 1 | 2 | 3 |
| (B) | 3 | 1 | 2 | 4 |
| (C) | 3 | 4 | 1 | 2 |
| (D) | 4 | 2 | 1 | 3 |

(E) Answer not known

8. A Graph which depicts the flow of information among the attributes instances in a parse tree is

(A) Weighted Graph
(B) Structured Graph
(C) Dependency Graph
(D) Finite Graph
(E) Answer not known

9. A symbol is said to be ———————— if it has different meanings depending on its context.

(A) Overrided
(B) Overloading
(C) Coercions
(D) Cohesion
(E) Answer not known

10. DAG stands for ————————

(A) Discontinued Acyclic Graph
(B) Designated Acyclic Graph
(C) Differently Acyclic Graph
(D) Directed Acyclic Graph
(E) Answer not known

11. In code generation, the size of heap cannot be determined at

(A) Compile time
(B) Run time
(C) Access time
(D) Transfer time
(E) Answer not known

12. Synthesized attributes can be evaluated during a single ———————— of a parse tree

(A) Post order traversal
(B) Pre order traversal
(C) Bottom-up traversal
(D) Top-down traversal
(E) Answer not known

13. Identify the operator grammar

(A) $E \rightarrow E+E/E-E/E*E/AB$
$A \rightarrow -E$
$B \rightarrow id$

(B) $E \rightarrow EAE/-E/id$
$A \rightarrow +/-/*$

(C) $E \rightarrow E+E/E-E/E*E/-E/id$
$E \rightarrow AB$

(D) $A \rightarrow E+E/E-E/E*E/-E/E$
$B \rightarrow id$

(E) Answer not known

14. In canonical collection of items, if I is the set of items $\{[E' \rightarrow E\cdot], [E \rightarrow E\cdot+T]\}$, then GoTo (I, +) consists of

(A) $E \rightarrow E+\cdot T$
$T \rightarrow \cdot T*F/\cdot F$
$F \rightarrow \cdot(E)/\cdot id$

(B) $E \rightarrow E\cdot+T$
$T \rightarrow T\cdot*F/\cdot F$
$F \rightarrow (\cdot E)/id\cdot$

(C) $E \rightarrow E+\cdot T$
$T \rightarrow T*\cdot F/F\cdot$
$F \rightarrow (\cdot E)/id\cdot$

(D) $E \rightarrow E+\cdot T$
$T \rightarrow T\cdot*F/F\cdot$
$F \rightarrow (\cdot E)/\cdot id$

(E) Answer not known

15. Is the language of finite automata

(A) Type 0
(B) Type 1
(C) Type 2
(D) Type 3
(E) Answer not known

16. An NFA's transition function returns

(A) A Boolean value
(B) A State
(C) A set of Sates
(D) An edge
(E) Answer not known

17. Consider the grammar defined by the following production rules, with two operators * and +

$S \rightarrow T + P$

$T \rightarrow U/T * U$

$P \rightarrow Q + P/Q$

$Q \rightarrow id$

$U \rightarrow id$ which one of the following is TRUE?

(A) + is left associative, while * is right associative
(B) + is right associative, while * is left associative
(C) Both + and * are right associative
(D) Both + and * are left associative
(E) Answer not known

18. The address of the actual parameter is passed to the callee as the value of the corresponding formal parameter is called as

(A) Call by value
(B) Call by reference
(C) Call by result
(D) Call by name
(E) Answer not known

19. The second phase of a compiler is known as

(A) Code optimization
(B) Semantic analysis
(C) Syntax analysis
(D) Lexical analysis
(E) Answer not known

20. The following parser is most powerful

(A) Operator precedence
(B) Canonical LR
(C) LALR
(D) SLR
(E) Answer not known

21. In HTML, ———————— tag is used to display the bullet-style list that does not order its item by letter or number.

(A) <ol> tag not in uppercase
(B) <dl>
(C) <ul>
(D) <li>
(E) Answer not known

22. Which tag is used to add columns to table?

(A) <th>
(B) <td>
(C) <tr>
(D) <tc>
(E) Answer not known

23. In HTML, the values assigned to ———————— and ———————— attributes specify the number of rows (or) columns occupied by a cell.

(A) rowspan, colspan
(B) rspan, cspan
(C) colspan, rowspan
(D) cspan, rspan
(E) Answer not known

24. In Email, BCC stands for

(A) Blue Carbon Copy
(B) Bind Carbon Copy
(C) Bit Carbon Copy
(D) Blind Carbon Copy
(E) Answer not known

25. Which of the following is mandatory for sending an email?

(A) Body
(B) Sender mail ID
(C) Subject
(D) Attachment
(E) Answer not known

26. Which of the following statements about email are false?

(1) Using the CC feature will hide all other recipients from each other.

(2) You can only send emails from a laptop computer.

(3) You can add attachments of any file size to an email.

(4) You can add signatures to your emails to give personal contact details.

(A) (1), (2), (3)
(B) (1), (3), (4)
(C) (1), (4)
(D) (2), (3), (4)
(E) Answer not known

27. How many frames need to be displayed to achieve the effect of smooth motions of objects?

(A) 20 fps
(B) 24 fps
(C) 28 fps
(D) 32 fps
(E) Answer not known

28. ———————— provide an integrated environment for combining text, graphics, audio, video and animation into an interactive presentation.

(A) Creating
(B) Morphing
(C) Scheduling
(D) Authoring
(E) Answer not known

29. Which of the following is a term that applies to the spacing between characters of text?

(A) Leading
(B) Kerning
(C) Tracking
(D) Points
(E) Answer not known

30. Which is the actual visual element provides an entry point to another document?

(A) Anchor
(B) Pointer
(C) Architecture
(D) Abstraction
(E) Answer not known

31. Multimedia includes

(1) Text
(2) Graphics
(3) Sound
(4) Animation
(5) Memory

(A) (1), (2), (3), (4)
(B) (2), (3), (4)
(C) (1), (2), (3), (4), (5)
(D) (3), (4)
(E) Answer not known

32. Optical character recognition system consists of a scanner and some

(A) Hardware
(B) Firmware
(C) Middleware
(D) Software
(E) Answer not known

33. In which, information is accessed through a touch screen and viewed on a monitor?

(A) Information Kiosk
(B) Digital representation
(C) Analog representation
(D) Information sharing
(E) Answer not known

34. What is frame rate?

(A) It measures number of frames per second
(B) It measures number of frames per minute
(C) It measures number of frames per word
(D) It measures number of frames per sentence
(E) Answer not known

35. Which one is correct to the given statement?

"From the microphone (or) audio cassette player a sound card receives a sound as an analog signal?

(A) MIDI files
(B) WAV files
(C) PDF files
(D) Ordinary files
(E) Answer not known

36. The branch of science dealing with the study of sound is

(A) Soundology
(B) Acoustics
(C) Waveology
(D) Sonateology
(E) Answer not known

37. Which one of the following is the search engine?

(A) Windows
(B) Google
(C) Linux
(D) MS Word
(E) Answer not known

38. Which among these is not a web browser?

(A) Chrome
(B) WWW
(C) Opera
(D) Netsurf
(E) Answer not known

39. ———————— is not a search engine.

(A) Google
(B) Yandex
(C) Gmail
(D) Bing
(E) Answer not known

40. Which of the following is not a browser?

(A) Android
(B) Safari
(C) Chrome
(D) Opera
(E) Answer not known

41. If n people to meet each day for lunch at a round table. If n is even the number of possible ways such that each day no two people sit together, who have sat together before is

(A) $\frac{n-1}{2}$ (B) $\frac{n+1}{2}$

(C) $\frac{n-2}{2}$ (D) $\frac{n+2}{2}$

(E) Answer not known

42. The size of an $r$-regular $(p, q)$ graph is given by

(A) $q = \frac{p \times r}{2}$ (B) $q = p \times r$

(C) $q = p + r$ (D) $q = \frac{p + r}{2}$

(E) Answer not known

43. Consider the following two statements and choose the correct option:

S1 : Let N be the set of Natural numbers. Then (N, +) and (N, X) are monoids.

S2 : The set of all semi group endomorphisms of a semi group is a semi group under the operation of composition.

(A) S1 is True and S2 is False

(B) S1 is False and S2 is True

(C) Both S1 and S2 are True

(D) Both S1 and S2 are False

(E) Answer not known

44. Choose the right answer among

(i) A graph which contains a triangle can be bipartite.

(ii) The complete graph $K_n$ is regular of degree $n-1$.

(iii) The max number of edges in a simple graph with $n$ vertices is $\frac{n(n-1)}{2}$

(iv) A complete bipartite graph $K_{m,n}$ is not regular if $m \neq n$.

(A) (i) only
(B) (i), (ii) only
(C) (ii), (iii), (iv) only
(D) (i), (ii), (iv) only
(E) Answer not known

45. Let P, Q and R be three variables. Determine the total number of min terms and max terms produced from these variables.

(A) 8
(B) 16
(C) 32
(D) 64
(E) Answer not known

46. By addition of which property, semi group becomes monoid?

(A) Closure
(B) Associative
(C) Identity
(D) Inverse
(E) Answer not known

47. The identity element of the group of integers with the binary operation $*$ defined by $a*b=a+b+2 \ \forall a,b \in Z$ is

(A) 1
(B) 0
(C) $-1$
(D) $-2$
(E) Answer not known

48. The closed form of generating function for the sequence $1, 0, -1, 0, 1, 0, -1, 0, 1, \ldots$

(A) $\frac{1}{1-x}$
(B) $\frac{x^2}{1-x}$
(C) $\frac{1}{1-x^2}$
(D) $\frac{1}{1+x^2}$
(E) Answer not known

49. Which one of the following statements is FALSE?

(A) The multiplicative group $\{1, -1\}$ is a subgroup of the multiplicative group $\{1, -1, i, -i\}$
(B) Identity element of a subgroup is same as that of the group
(C) The intersection of any two subgroups of a group $(G, *)$ is again a subgroup of $(G, *)$
(D) The union of any two subgroups of a group $(G, *)$ is a subgroup of $(G, *)$
(E) Answer not known

50. Let $T(n)$ denote the worst time units for binary search of a file with $n$ records. Find $T(27)$.

(A) 3
(B) 4
(C) 5
(D) 6
(E) Answer not known

51. If every student gets a separate chair and still some chairs are left vacant, it is an example of

(A) One-One onto function
(B) One-One into function
(C) Many-One onto function
(D) Many-One into function
(E) Answer not known

52. Let $A = \{1,2,3,4,5,6,7\}$ and $B = \{w,x,y,z\}$ then the number of functions from A on to B is

(A) $4^7$
(B) $7^4$
(C) 8400
(D) 4800
(E) Answer not known

53. Which of the following sets are closed with respect to addition and subtraction?

(A) {1, 3, 5, 7, ...}
(B) {1, 2, 3, 4, 5}
(C) The set of all natural numbers
(D) The set of integers
(E) Answer not known

54. Let $X = \{1, 2, 3, 4, 6, 12\}$. Find the least upper bound of {2, 3} under the relation $R = \{(a,b) : a \text{ divides } b\}$

(A) 3
(B) 4
(C) 6
(D) 12
(E) Answer not known

55. Among the following statements, which one does not holds?

(A) If $n$ is a positive integer, then
$$1.2 + 2.3 + 3.4 + \cdots + n(n+1) = \frac{n(n+1)(n+2)}{3}$$

(B) If $n$ is a positive integer greater than 4, than $2^n > n^2$

(C) Whenever $n$ is a non-negative integer, then 5 divides $n^5 - n$

(D) $1^2 + 2^2 + 3^2 + \cdots + n^2 = \left[\frac{n(n+1)}{2}\right]^2 \quad (n \in N)$

(E) Answer not known

56. $P(n) = 10^n + 3.4^{n+2} + 5$ is divisible by ———— for all positive integer values of $n$.

(A) 7
(B) 5
(C) 4
(D) 9
(E) Answer not known

57. The digraph of R, the ———— of a vertex is the number of edges terminating at the vertex and the ———— of a vertex is the number of edges leaving the vertex.

(A) in degree ; out degree
(B) out degree ; in degree
(C) in degree ; in degree
(D) out degree ; out degree
(E) Answer not known

58. How many proper subsets does a set with $n$ elements have?

(A) $n!$ (B) $2^n - 2$

(C) $n$ (D) $n-1$

(E) Answer not known

59. If the function $f : R \to R$ defined by $f(x) = \begin{cases} 3x-4 & , \ x > 0 \\ -3x+2 & , \ x \leq 0 \end{cases}$ then value of $f^{-1}(0)$ and $f^{-1}(2)$ is

(A) $\left\{\frac{4}{3}\right\}$ and $\{0, 2\}$ (B) $\{2\}$ and $\{-4\}$

(C) $\{-3\}$ and $\{2\}$ (D) $\{2, -4\}$ and $\{0\}$

(E) Answer not known

60. Let $N$ be the set of positive integers. If $f$ and $g$ are mapping on $N$.

$f(n) = n + 7$ *for all* $n \in N$

$g(n) = 2n$ *for all* $n \in N$

then $g \circ f$ is

(A) $n + 13$

(B) $2n + 15$

(C) $n - 17$

(D) $2n + 14$

(E) Answer not known

61. Using the two phase locking protocol find the values of $X$ and $Y$ after the transaction $T_1$ and $T_2$ with initial values of X = 20, Y = 30.

| $T_1$ | | $T_2$ | |
|---|---|---|---|
| read – lock(Y) | | read – lock(X) | |
| read – item (Y) | write – item (X) | read – item (X) | write – item (Y) |
| unlock (Y) | unlock (X) | unlock (X) | unlock (Y) |
| write – lock (X) | | write – lock (Y) | |
| read – item (X) | | read – item (Y) | |
| X = X + Y | | Y = X + Y | |

(A) X = 50, Y = 70 after $T_1$ followed by $T_2$
X = 70, Y = 50 after $T_2$ followed by $T_1$

(B) X = 80, Y = 50 after $T_1$ followed by $T_2$
X = 70, Y = 50 after $T_2$ followed by $T_1$

(C) X = 50, Y = 80 after $T_1$ followed by $T_2$
X = 70, Y = 50 after $T_2$ followed by $T_1$

(D) X = 20, Y = 70 after $T_1$ followed by $T_2$
X = 70, Y = 80 after $T_2$ followed by $T_1$

(E) Answer not known

62. In object databases (ODBs), the complex type is constructed from other types by nesting of type constructors, choose the correct collection of types

(i) atom

(ii) struct

(iii) union

(iv) collection

(A) (i), (ii), (iii)
(B) (ii), (iii), (iv)
(C) (i), (ii), (iv)
(D) (i), (iii), (iv)
(E) Answer not known

63. The advantages of OODBMS are

(i) Enriched Model Capabilities

(ii) Extensibility

(iii) More Expressive query language

(iv) No support for schema evolution

(A) (i), (iii) and (iv) only
(B) (i), (ii) and (iii) only
(C) (ii) and (iii) only
(D) (iii) and (iv) only
(E) Answer not known

64. In object-oriented database, OID has any one of the characteristics

(i) It is generated by the system

(ii) It is unique

(iii) It is used only by the system

(iv) It is dependent to the state of the object

(A) (i) and (ii) only
(B) (i), (iv) and (ii) only
(C) (i), (ii) and (iii) only
(D) (iv) only
(E) Answer not known

65. ———— is guaranteed by concurrency control protocol.

(A) Cascadeless
(B) Conflictness
(C) Serializability
(D) Reliability
(E) Answer not known

66. A ———— provides a way to describe the design of a database at the physical, logical and view levels.

(A) Data model
(B) Data isolation
(C) Data values
(D) Data independence
(E) Answer not known

67. ———— is a statement that a system executes automatically when there is any modification to the database.

(A) Trigger
(B) Predicates
(C) Views
(D) Tuples
(E) Answer not known

68. Which one consists of a set of atomic values?

(A) Attributes
(B) Tuples
(C) Relations
(D) Domains
(E) Answer not known

69. The main disadvantages of Network data model is ———— and ————

(A) complicated relations and few storage space
(B) simple relations and few storage space
(C) complicated relations and great demand of storage space
(D) simple relations and great demand of storage space
(E) Answer not known

70. Choose the function(s) of advanced DBMS from the following.

(A) Querying the data
(B) Ease use of data by everyone
(C) Access data without synchronization
(D) Unprotect the data
(E) Answer not known

71. 2NF relations are those that are in 1NF with all the attribute types dependent on the ———— key

(A) Primary
(B) Foreign
(C) Composite
(D) Alternate
(E) Answer not known

72. The normal form which is based on the concept of Transitive dependency is ————————

(A) First Normal Form
(B) Second Normal Form
(C) Third Normal Form
(D) Trival Normal Form
(E) Answer not known

73. Third normal form is based on the concept of ————————

(A) Functional dependency
(B) Partial dependency
(C) Transitive dependency
(D) Full functional dependency
(E) Answer not known

74. Choose the DML command from the following:

(A) Create
(B) Grant
(C) Insert
(D) Drop
(E) Answer not known

75. Identify the TRUE statement about normalization.

(i) It plays important role in functional dependencies

(ii) It is based on multivalue dependencies

(iii) It allows redundancy of data

(A) (i) only
(B) (i) and (iii) only
(C) (i) and (ii) only
(D) (ii) and (iii) only
(E) Answer not known

76. Who introduce the relational database rules?

(A) Atul Kahate
(B) James Gorsling
(C) EF Codd
(D) Dennis Ritchie
(E) Answer not known

77. The ———————— allow composite attributes of E-R designs to be represented directly.

(A) Structured types
(B) Inheritance
(C) Complex data types
(D) Persistence
(E) Answer not known

78. Which tree starts with a single root node at level (0) zero?

(A) $B^+$ Tree
(B) B Tree
(C) Search Tree
(D) Sub Tree
(E) Answer not known

79. Consider the following functional dependency $G = \{A \rightarrow BCDE,\ CD \rightarrow E\}$ and choose the minimum cover of G

(A) $\{A \rightarrow BCD,\ CD \rightarrow E\}$
(B) $\{A \rightarrow BC,\ A \rightarrow D,\ C \rightarrow DE\}$
(C) $\{A \rightarrow BCD,\ C \rightarrow DE\}$
(D) $\{A \rightarrow BC,\ A \rightarrow D,\ C \rightarrow D\}$
(E) Answer not known

80. Identify the phases involved in DB design.

(i) Conceptual DB design

(ii) Logical DB design

(iii) Physical DB design

(A) (i) only
(B) (ii) only
(C) (i), (ii) and (iii) only
(D) (ii) and (iii) only
(E) Answer not known

81. A stack-organized computer uses instruction of ————————.

(A) Two-addressing
(B) Indirect addressing
(C) Three-addressing
(D) Zero addressing
(E) Answer not known

82. The pipelining process is also called as ————————

(A) Super scalar operation
(B) Assembly line operation
(C) Von Neumann cycle
(D) Deadlock
(E) Answer not known

83. The ———————— represents an organization that includes many processing unit under the supervision of a common control unit.

(A) Single Instruction stream, Single Data stream (SISD)
(B) Single Instruction stream, Multiple Data stream (SIMD)
(C) Multiple Instruction stream, Single Data stream (MISD)
(D) Multiple Instruction stream, Multiple Data stream (MIMD)
(E) Answer not known

84. The ———————— is a addressing mode, in which the operand value is present in the instruction.

(A) Immediate Addressing
(B) Direct Addressing
(C) Indirect Addressing
(D) Register Addressing
(E) Answer not known

85. Which one of the following is true for a typical RISC architecture?

(A) Makes use of micro programmed control unit
(B) Has much smaller cache than CISC processors
(C) Supports many addressing modes
(D) Make use of hardwired control unit
(E) Answer not known

86. In which computer architecture, programs and Data are stored in the same memory?

(A) Von Neumann architecture
(B) SPARC architecture
(C) Harvard architecture
(D) CISC architecture
(E) Answer not known

87. Find the result of the reverse polish notation 3 4 * 5 6 * +

(A) 34
(B) 56
(C) 42
(D) 36
(E) Answer not known

88. The following one or more are the characteristics of the RISC Architecture

(1) Large variety of Addressing Modes

(2) Fixed length instruction format

(3) Variable length instruction format

(4) Few Addressing Modes

(A) (1), (3)

(B) (2), (4)

(C) (1), (2)

(D) (3), (4)

(E) Answer not known

89. Consider a three–address RISC instruction set architecture. Which one of the following correctly characterizes an effect of doubling the number of registers in the processors?

(A) Instruction size would increase by 1 bit

(B) Instruction size would increase by 2 bits

(C) Instruction size would increase by 3 bits

(D) Instruction size would remain unaffected

(E) Answer not known

90. The Von Neumann bottleneck can be attributed to which one of the following?

(A) Mismatch between the speeds of the secondary and primary storages.

(B) Mismatch between the speeds of the CPU and the primary storage

(C) Slow speed of input / output devices

(D) Low clock speeds

(E) Answer not known

91. Forbidden Latency means ————————

(A) Distance between all the checkmarks

(B) Distance between any two checkmarks in the same row of the reservation table

(C) Distance between all the checkmarks in the same row of the reservation table

(D) Distance between any two checkmarks in the same column of the reservation table

(E) Answer not known

92. The process of efficient allocation of the vectors is known as

(A) Vectorization

(B) Optimization

(C) Code generation

(D) Code motion

(E) Answer not known

93. Vector processors are best classified into which one of the following Flynn's classifications of computers.

(A) SI SD
(B) SI MD
(C) MI SD
(D) MI MD
(E) Answer not known

94. Explore the suitable applications from the given list where vector processing is utmost important.

(1) Aerodynamics and space flight simulations

(2) Artificial intelligence and expert systems

(3) Petroleum explorations

(4) Mapping the human genome

(A) (1) and (2) only
(B) (3) and (4) only
(C) (2) only
(D) All (1), (2), (3) and (4)
(E) Answer not known

95. In an Interprocessor Arbitration process, which bus initiate the transfer of data item accompanied by handshaking control signals to indicate when the data are transferred from the source and received by the destination.

(A) System Bus
(B) Synchronous Bus
(C) Asynchronous Bus
(D) I/O Bus
(E) Answer not known

96. ———————— is set, when an updates are made only in the cache by write back technique.

(A) Tiny bit
(B) Mark bit
(C) Middle bit
(D) Dirty bit
(E) Answer not known

97. Booth algorithm gives a procedure for multiplying binary in signed ———————— representation.

(A) 1's complement
(B) BCD
(C) ASCII
(D) 2's complement
(E) Answer not known

98. The highest hierarchy is given to which series of memory available below due to access speed

(1) Primary memory

(2) Cache memory

(3) Auxiliary memory

(A) (2), (1), (3)
(B) (3), (1), (2)
(C) (1), (2), (3)
(D) (2), (3), (1)
(E) Answer not known

99. Which is designed to combine the memory access time of expensive, High-Speed Memory with the Large Memory Size of Less Expensive, Lower-Speed Memory.

(A) Associative Memory
(B) Auxiliary Memory
(C) Cache Memory
(D) Virtual Memory
(E) Answer not known

100. TLB stands for

(A) Transport Least aside Buffer
(B) Translation Look aside Buffer
(C) Translation Least aside Buffer
(D) Transport Look aside Buffer
(E) Answer not known

101. A list of all elements that hash to the same value is known as

(A) Double hashing
(B) Group chaining
(C) Separate chaining
(D) Linear probing
(E) Answer not known

102. _____ algorithm solves the single source shortest path problem if all edge weights are greater than or equal to zero.

(A) Floyd-Warshall
(B) Warshall
(C) Bellman-Ford
(D) Dijkstra's
(E) Answer not known

103. Mention the name of the traversal method performs the following operations.

(a) Traverse the left subtree of N(L)

(b) Traverse the right subtree of N(R)

(c) Process the root Node (N)

(A) Post order
(B) In order
(C) Pre order
(D) Prepost order
(E) Answer not known

104. ———— finds the location of an element in a data structure without making any comparisons.

(A) Sorting
(B) Searching
(C) Hashing
(D) Recursion
(E) Answer not known

105. Graphs cannot be implemented by which of the following methods.

(A) Adjacency matrix
(B) Path matrix
(C) Adjacency list
(D) Path list
(E) Answer not known

106. Degree of a vertex in a graph is the number of ———— connected to a vertex.

(A) Path
(B) Order
(C) Loop
(D) Edges
(E) Answer not known

107. The average running time of searching an element in a binary search tree is

(A) O(log n)
(B) O(n log n)
(C) O(log2n)
(D) O(nlog2n)
(E) Answer not known

108. Consider the graph have 7(7) vertices. How many number of elements in the.adjacency matrix?

(A) 14
(B) 30
(C) 40
(D) 49
(E) Answer not known

109. Breadth First Search program would be best implemented using ———— data structure.

(A) Queue
(B) Stack
(C) List
(D) Arrays
(E) Answer not known

110. A stack is based on the ———— principle.

(A) Round Robin
(B) FCFS
(C) FIFO
(D) LIFO
(E) Answer not known

111. The order of tasks, to perform pop operation under linked implementation of stack is

(1) Returning the retrieved value

(2) Updating the stack pointer

(3) Checking whether the stack is empty

(4) Retrieving the top element of the stack

(A) (3), (2), (4), (1)

(B) (3), (4), (2), (1)

(C) (4), (3), (2), (1).

(D) (4), (2), (3), (1)

(E) Answer not known

112. A ———— allows insertion and deletion of elements at both ends.

(A) Queue

(B) Circular Queue

(C) Double-ended Queue

(D) Priority Queue

(E) Answer not known

113. Which of the following algorithm is used to solve the merge sort?

(A) Dynamic programming

(B) Divide-and-conquer

(C) Greedy method

(D) Backtracking

(E) Answer not known

114. In Big-oh notations the computing time is represented by 0(1) means

(A) Linear
(B) Cubic
(C) Exponential
(D) Constant
(E) Answer not known

115. Any algorithm which sorts the $n$ number using tree by comparison only must have the worst computing will be

(A) $O(n^2)$
(B) $O(n \log_2 n)$
(C) $O(n \log 2^n)$
(D) $O(\log_2 n)$
(E) Answer not known

116. In file handling sequence of bytes refers to

(A) Text stream
(B) File stream
(C) Binary stream
(D) Character stream
(E) Answer not known

117. ———————— mode can be used to read data from the data file.

(A) "r"
(B) "a"
(C) "w"
(D) None of the above
(E) Answer not known

118. Which one of these is the correct statement about eof( )?

(A) Returns true if a file open for reading has reached the next character

(B) Returns true if a file open for reading has reached next word

(C) Returns true if a file open for reading has reached the end

(D) Returns true if a file open for reading has reached the middle

(E) Answer not known

119. The file organization which is used when logical sequence of record is generally different from physical sequence is

(A) Linked organization

(B) Sequential organization

(C) Random organization

(D) Inverted files

(E) Answer not known

120. Choose the best indexing method for sequentially order file

(A) Hash index

(B) Tree index

(C) Primary key index

(D) Trie index

(E) Answer not known

121. Smart card is a

(A) Plastic embedded with a microchip containing stored-up funds

(B) Scanning device

(C) Device used to listen music

(D) Device used to record audio and video

(E) Answer not known

122. Cell reference in a Spreadsheet represents

(i) A way to reference a website from a cell

(ii) The address of a cell, formed by its column letter and row number

(iii) A reference to a file saved on the computer

(iv) The content of a cell

(A) (i) only
(B) (i) and (ii) only
(C) (ii) only
(D) (iii) and (iv) only
(E) Answer not known

123. The distance between written text and the edge of a paper is called

(A) Alignment
(B) Indent
(C) Ruler line
(D) Margin
(E) Answer not known

124. ———— is characterized by the processing, storage, generation, manipulation and rendition of multimedia information.

(A) Multimedia elements
(B) Multimedia systems
(C) Multimedia applications
(D) Multimedia tools
(E) Answer not known

125. ———— is a useful feature when printing multiple sets of a document.

(A) Merge
(B) Collate
(C) Multiple pages
(D) Copy
(E) Answer not known

126. ———— is a file that contains the information to be merged with the names and addresses.

(A) Data source
(B) Record
(C) Main document
(D) Field
(E) Answer not known

127. ———— Tally version is best for accounting solution for business management.

(A) Tally. ERP 9
(B) Tally. PRE 9
(C) Tally. EPR 9
(D) Tally. 9EPR
(E) Answer not known

128. The statistical package SPSS will be used for analysing the data using

(1) t-test and chi square test
(2) Segmentation analysis
(3) Cluster analysis
(4) ANOVA

(A) (1), (2), (4)
(B) (1), (3), (4)
(C) (2), (4)
(D) (2), (3), (4)
(E) Answer not known

129. The most desirable form of coupling between modules is a combination ———— and ———— coupling.

(A) content, common
(B) common, control
(C) content, control
(D) stamp, data
(E) Answer not known

130. The primary objective of the analysis phase is to

(i) Analyze the capabilities and structure of the previous system.

(ii) Prioritize the alternatives for a new systems

(iii) Determine the basic structure and approach for the new system

(iv) Understand and document the needs and requirement of the system

(A) (iii) only
(B) (iv) only
(C) (i), (ii) only
(D) (ii), (iv) only
(E) Answer not known

131. A ———— is prepared during or as a result of the interactions that takes place between users and designers at the design reviews.

(A) Workstations
(B) Special forms
(C) Working prototype
(D) Methodology
(E) Answer not known

132. The lower degree of cohesion is

(A) Logical cohesion
(B) Coincidental cohesion
(C) Procedural cohesion
(D) Communicational cohesion
(E) Answer not known

133. Restating or repeating the interviewee's statement to ensure that you have cleanly and correctly received their message. This method is called

(A) Signposting
(B) Summarising
(C) Confirming
(D) Listening
(E) Answer not known

134. A data processing method whereby data about many transactions is collected as a single file which is then processed is called as

(A) Online processing
(B) Batch processing
(C) Remote batch processing
(D) File processing
(E) Answer not known

135. Structured programming is a methodology that involves

(i) The systematic design, development and management of the program.

(ii) Functional modularisation

(iii) Centralized processing

(A) (i) and (ii) only
(B) (ii) and (iii) only
(C) (i) and (iii) only
(D) (i) only
(E) Answer not known

136. ———————— testing is also called behavioral testing.

(A) White-box
(B) Black-box
(C) Gray-box
(D) Blue-box
(E) Answer not known

137. Choose the option which is not a type of system tests?

(A) Recovery testing
(B) Security testing
(C) Stress testing
(D) Production testing
(E) Answer not known

138. ———————— is concerned with exercising the internal logic of a program and traversing particular execution paths.

(A) Performance testing
(B) Acceptance testing
(C) Integrated testing
(D) Structural testing
(E) Answer not known

139. The set of activities that ensure that software correctly implements a specific function

(A) Verification
(B) Validation
(C) Testing
(D) Processing
(E) Answer not known

140. ———————— technique merge the data and process concerns into singular constructs.

(A) Object modeling
(B) Data modeling
(C) Process modeling
(D) Flow modeling
(E) Answer not known

141. COCOMO models defines the relationship between the ———————— of a project.

(A) Size, effort and duration
(B) Inputs and outputs
(C) Computer and personnel attributes
(D) Reliability and accuracy
(E) Answer not known

142. In cost estimation model, ———— is used to measure the project deviations in terms of schedule and costs.

(A) Schedule performance index
(B) Performance index
(C) Cost performance index
(D) Cost variance
(E) Answer not known

143. ———— is the basic equation used to build the COCOMO model.

(A) (effort) = $c(size)^k$
(B) (effort) = $(size)^k$
(C) (size) = $(effort)^k$
(D) (size) = $e(effort)^k$
(E) Answer not known

144. From the given, ———— is not considered as a project resource.

(A) people
(B) reusable software
(C) environmental
(D) application
(E) Answer not known

145. Pick the attributes used to estimate the size of the project

(i) Length

(ii) Functionality

(iii) Complexity

(iv) Reuse

(A) (i), (ii), (iii) only
(B) (i), (ii), (iii), (iv)
(C) (ii) and (iv) only
(D) (i) and (ii) only
(E) Answer not known

146. Find the option(s) that is (are) used to estimate software size

(i) Fuzzy logic sizing

(ii) Function point sizing

(iii) Component sizing

(A) (i) and (ii)
(B) (ii) and (iii)
(C) (i) and (iii)
(D) (i), (ii) and (iii)
(E) Answer not known

147. Product complexity of "Application programs, Utility Programs and System Programs" are derived by

(A) Putnam
(B) Norden
(C) Boehm
(D) Rayleigh
(E) Answer not known

148. Putnam model describes the time and effort required to ———— a software project.

(A) Finish
(B) Start
(C) Deliver
(D) Relate
(E) Answer not known

149. The ———— follows the life cycle of software development and provides a framework for organizing data and information.

(A) Risk clinic
(B) Risk software
(C) Risk Taxonomy
(D) Risk plan
(E) Answer not known

150. In software risk management, the risk which is associated with the overall size of the software to be built or modified is identified by

(A) Business impact
(B) Process definition
(C) Technology to be built
(D) Product size
(E) Answer not known

151. ———— risks threaten the quality and timeliness of the software to be produced.

(A) Technical
(B) Project
(C) Business
(D) Budget
(E) Answer not known

152. Risk Management Approach is classified into

(A) Reactive and Proactive
(B) Positive and Negative
(C) Certain and Uncertain
(D) Biased and Unbiased
(E) Answer not known

153. Among the below listed points, choose the correct one which is suitable to categorize as the benefits of risk management

(1) It provides minimum – cost downside protection

(2) Takecare's the control of stakeholders

(3) Ensure the work of software engineer's

(4) It isolates the failure of a sub project

(A) (1) only
(B) (1) and (3) only
(C) (3) and (4) only
(D) (1) and (4) only
(E) Answer not known

154. Choose the indirect approach used to estimate the size of the software.

(A) LOC
(B) Work breakdown structure
(C) COCOMO model
(D) Function points
(E) Answer not known

155. Identify the three different stages of COCOMO II model

(i) Entry, Exit and Read

(ii) Analysis, Design and Construction

(iii) Application composition, Early design and Post architecture

(iv) Organic, embedded and semi-detached

(A) (i) and (ii) only
(B) (ii) and (iv) only
(C) (iii) only
(D) (i), (ii), (iii) and (iv) only
(E) Answer not known

156. ———— is "an uncertain event, that if it occurs, has a positive or negative effect on a project's objectives"?

(A) Risk
(B) Activity
(C) Effort
(D) Plan
(E) Answer not known

157. Select the objective(s) of using risk management tool in a software project from the following :

(1) Defining risks

(2) Identifying risks

(3) Assessing their impact and probability

(4) Tracking risks

(A) (1) and (2) only
(B) (3) only
(C) (1) and (4) only
(D) (1), (2), (3) and (4)
(E) Answer not known

158. Software project planning is an

(A) Time consuming process
(B) Continuous process
(C) Iterative process
(D) Conventional process
(E) Answer not known

159. From the given options, identify the project management standard used in project planning stages

(A) PRINCE
(B) PRINCE 1
(C) PRINCE 2
(D) PRINCE 3
(E) Answer not known

160. The total difference between the total cost and the total income over the life of the project is called as

(A) Return on investment
(B) Net present value
(C) Net profit
(D) Payback period
(E) Answer not known

161. The clipping process in computer graphics is used for

(A) Adding graphics
(B) Copying
(C) Zooming
(D) Removing objects and lines
(E) Answer not known

162. The algorithm of hidden surface are

(A) Object-space method
(B) Image-space method
(C) Both (A) and (B)
(D) None of the above
(E) Answer not known

163. In which of the following are true with respect to the Bresenham's algorithm?

(A) It produces smooth polygons
(B) The results of this algorithm are 100 percent accurate
(C) Due to integer operations it's complexity gets reduced
(D) All of the above
(E) Answer not known

164. A viewing transformation maps a picture represented by,

(A) WCS → PDCS
(B) NDCS → PDCS
(C) WCS → PDCS → NDCS
(D) WCS → NDCS → PDCS
(E) Answer not known

165. The technique for not showing that part of the drawing in which one is not interested is called as

(A) Clipping
(B) Windowing
(C) Viewing
(D) Morphing
(E) Answer not known

166. ———— strategy is used by the Cohen-Sutherland's algorithm.

(A) Recursion
(B) Incremental
(C) Midpoint division
(D) Divide and Conquer
(E) Answer not known

167. In computer graphics, a technique of transforming one object into another is called as

(A) Translation
(B) Scaling
(C) Morphing
(D) Double buffering
(E) Answer not known

168. The segment names are usually taken as

(A) Characters
(B) Boolean
(C) Numbers
(D) Alphanumeric
(E) Answer not known

169. The value of the determinant for each reflection matrix is identically equal to –1 called as

(A) Pure reflection
(B) Reflection
(C) Refraction
(D) Pure refraction
(E) Answer not known

170. The process of applying a tangential force to any object which distorts the shape of the object known as

(A) Scaling
(B) Shearing
(C) Shrinking
(D) Morphing
(E) Answer not known

171. The Hardware devices which give position information are known as

(A) Selectors
(B) Projectors
(C) Locators
(D) Blocker
(E) Answer not known

172. ———————— is a process that the scanning s/w uses to increase the received resolution of an image.

(A) Interpolation
(B) Extrapolation
(C) Expansion
(D) None of the above
(E) Answer not known

173. Specify the order of Input modes to execute programs in a graphics package.

(1) Sample mode

(2) Event mode

(3) Request mode

(A) (1), (2), (3)
(B) (3), (1), (2)
(C) (2), (1), (3)
(D) (3), (2), (1)
(E) Answer not known

174. The distance between the actual line location and the nearest pixel termed as

(A) Variable
(B) Constant value
(C) Distance variable
(D) Decision variable
(E) Answer not known

175. The most commonly used method in Raster-Scan system is

(A) Beam – Penetration method
(B) Shadow – Mask method
(C) Line – Penetration method
(D) Shadow – Penetration method
(E) Answer not known

176. The wrap-around effect means

(A) The new coordinates achieved should be less than the device coordinates

(B) The new coordinates achieved should be equal to the device coordinates

(C) The new coordinates achieved should be greater than the device coordinates

(D) The new coordinates achieved should be greater than or equal to the device coordinates

(E) Answer not known

177. Negative rotation angles produces

(A) Anticlockwise rotations

(B) Counter clockwise rotations

(C) Clockwise rotations

(D) None of the above

(E) Answer not known

178. A truncated pyramidal volume is used for

(A) Parallel projections

(B) Perspective projections

(C) Geometric projections

(D) Symmetric projection

(E) Answer not known

179. ———————— transformation is also called as twist or torque or tilt transformation.

(A) Scaling
(B) Rotation
(C) Shearing
(D) Translation
(E) Answer not known

180. ———————— is a type of transformation in which the object is held stationary while the coordinate system is transformed relative to the object.

(A) Rotation
(B) Geometric transformation
(C) Coordinate transformation
(D) Scaling
(E) Answer not known

181. Identify the integrity error occurs when a foreign-key value in one table has no matching primary key value in the related table

(A) Referential integrity
(B) Key integrity
(C) Domain integrity
(D) Entity integrity
(E) Answer not known

182. Cost-benefit analysis is associated with

(A) Technical feasibility
(B) Economical feasibility
(C) Analytical feasibility
(D) Functional feasibility
(E) Answer not known

183. ———————— are directed graphs in which the nodes specify processing activities and the arcs specify data items transmitted between processing nodes.

(A) Flowchart
(B) Data Flow Diagrams (DFD)
(C) Structure Charts
(D) HIPO Diagram
(E) Answer not known

184. Identify the method used for collecting data about requirements by analyst.

(A) User requirement gathering techniques
(B) Identify control techniques
(C) User decision requirement techniques
(D) Fact-finding techniques
(E) Answer not known

185. Match the symbols used in DFD :

| | | | |
|---|---|---|---|
| (a) | Circle | 1. | Data flow |
| (b) | Line | 2. | Data store |
| (c) | Rectangle | 3. | Process |
| (d) | Two parallel lines | 4. | Entities |

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (A) | 3 | 1 | 4 | 2 |
| (B) | 4 | 1 | 3 | 2 |
| (C) | 2 | 1 | 3 | 4 |
| (D) | 3 | 1 | 2 | 4 |

(E) Answer not known

186. Match the following :

| | | | |
|---|---|---|---|
| (a) | Tangible cost | 1. | Not easily measured |
| (b) | Intangible cost | 2. | Non recurring |
| (c) | Direct cost | 3. | Outlays of cash |
| (d) | Fixed cost | 4. | Dollar figure |

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (A) | 3 | 1 | 4 | 2 |
| (B) | 2 | 3 | 4 | 1 |
| (C) | 3 | 2 | 1 | 4 |
| (D) | 4 | 1 | 2 | 3 |

(E) Answer not known

187. Match the following :

| | | | |
|---|---|---|---|
| (a) | DFD | 1. | Visual table |
| (b) | HIPO | 2. | Condition and Action |
| (c) | Decision table | 3. | Logical construction |
| (d) | Warnier orr | 4. | Bubble chart |

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (A) | 4 | 1 | 2 | 3 |
| (B) | 2 | 4 | 1 | 3 |
| (C) | 3 | 4 | 1 | 2 |
| (D) | 2 | 3 | 4 | 1 |

(E) Answer not known

188. HIPO stands for

(A) Horizontal Input Produce Output
(B) Hierarchical Input Process Output
(C) Horizontal Input Process Output
(D) Hierarchical Input Produce Output
(E) Answer not known

189. A person who uses analysis and design techniques to solve business problems using information technology is called as

(A) System Engineer
(B) System Administrator
(C) System Analyst
(D) System Builders
(E) Answer not known

190. Identify from the following, to whom the system analyst have to interact.

(i) managers of organizations

(ii) users in the organizations

(iii) programming team

(iv) data entry operator

(A) (iii) and (iv)
(B) (i), (ii) and (iii)
(C) (ii), (iii) and (iv)
(D) (ii) and (iii)
(E) Answer not known

191. A problem analysis phase model includes only entities and relationship but no attributes – it is called

(A) key based data model

(B) fully attributed data model

(C) context data model

(D) normalized data model

(E) Answer not known

192. Pick the most important and fundamental phases of SDLC from the following

(A) Preliminary investigation

(B) Requirement analysis

(C) Design, testing and implementation

(D) All the above

(E) Answer not known

193. Identify the most important skills of a system analyst?

Among the following :

(1) Communication

(2) Understanding

(3) Problem solving

(4) Good looking

(5) Sensitivity

(6) Computer knowledge

(A) (1), (2), (4), (5)
(B) (1), (2), (5), (6)
(C) (1), (2), (3), (6)
(D) (1), (2), (3), (5)
(E) Answer not known

194. ———————— is a well-defined, structured work unit that can be carried out by one individual.

(A) Function
(B) Program
(C) Task
(D) Structure
(E) Answer not known

195. Identify the factor that probably not a method to classify projects.

(1) Size

(2) Scope

(3) Risk

(4) Economic value

(5) Open source

(A) (1), (2), (3)

(B) (1), (2), (3), (4)

(C) (1), (2), (5)

(D) (5)

(E) Answer not known

196. How much percentage of time, is allocated for design phase of a business application development using the SOLC model?

(A) 25%

(B) 30%

(C) 35%

(D) 40%

(E) Answer not known

197. A process that involves continuously improving and detailing a plan as more detailed information become available is termed as

(A) project analysis

(B) project enhancing

(C) progressive deliberation

(D) progressive elaboration

(E) Answer not known

198. ———— is responsible for delivering a potentially releasable increment at the end of each sprint in Agile

(A) Scrum master
(B) Product owner
(C) Development team
(D) Agile coach
(E) Answer not known

199. Before publicize the plan in project planning, ———— is the activity need to be performed.

(A) Strategic planning
(B) Project planning
(C) Business area analysis
(D) Resource allocation
(E) Answer not known

200. Match the following :

| | | |
|---|---|---|
| (a) | Steering committee | 1. Manager |
| (b) | Information system committee | 2. User |
| (c) | User-Group committee | 3. Vice President |

| | (a) | (b) | (c) |
|---|---|---|---|
| (A) | 1 | 3 | 2 |
| (B) | 3 | 1 | 2 |
| (C) | 2 | 1 | 3 |
| (D) | 1 | 2 | 3 |

(E) Answer not known