

Sl. No. :

FACSC

Register
Number

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2018

**COMPUTER SCIENCE
(Degree Standard)**

Time Allowed : 3 Hours]

[Maximum Marks : 300

Read the following instructions carefully before you begin to answer the questions.

IMPORTANT INSTRUCTIONS

1. The applicant will be supplied with Question Booklet 15 minutes before commencement of the examination.
2. This Question Booklet contains **200** questions. Prior to attempting to answer the candidates are requested to check whether all the questions are there in series and ensure there are no blank pages in the question booklet. **In case any defect in the Question Paper is noticed it shall be reported to the Invigilator within first 10 minutes and get it replaced with a complete Question Booklet. If any defect is noticed in the Question Booklet after the commencement of examination it will not be replaced.**
3. Answer **all** questions. All questions carry equal marks.
4. You must write your Register Number in the space provided on the top right side of this page. Do not write anything else on the Question Booklet.
5. An answer sheet will be supplied to you, separately by the Room Invigilator to mark the answers.
6. You will also encode your Question Booklet Number with Blue or Black ink Ball point pen in the space provided on the side 2 of the Answer Sheet. If you do not encode properly or fail to encode the above information, action will be taken as per commission's notification.
7. Each question comprises *four* responses (A), (B), (C) and (D). You are to select **ONLY ONE** correct response and mark in your Answer Sheet. In case you feel that there are more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
8. In the Answer Sheet there are **four** circles (A), (B), (C) and (D) against each question. To answer the questions you are to mark with Blue or Black ink Ball point pen **ONLY ONE** circle of your choice for each question. Select one response for each question in the Question Booklet and mark in the Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. e.g. If for any item, (B) is the correct answer, you have to mark as follows :

(A) ● (C) (D)
9. You should not remove or tear off any sheet from this Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the time of examination. After the examination is concluded, you must hand over your Answer Sheet to the Invigilator. You are allowed to take the Question Booklet with you only after the Examination is over.
10. The sheet before the last page of the Question Booklet can be used for Rough Work.
11. Do not tick-mark or mark the answers in the Question Booklet.
12. Applicants have to write and shade the total number of answer fields left blank on the boxes provided at side 2 of OMR Answer Sheet. An extra time of 5 minutes will be given to specify the number of answer fields left blank.
13. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.

SEAL

1. If $f(x) = 3x + 1$ and $g(x) = x^2 + 2$ find $f \circ g(x)$
- (A) $3x^2 + 2$ (B) $3x + x^2 + 3$
 (C) $3x^2 + 7$ (D) $9x^2 + 6x + 3$
2. When is a relation called a partial order?
- (A) reflexive, symmetric and transitive
 (B) irreflexive, symmetric and transitive
 (C) reflexive, antisymmetric and transitive
 (D) irreflexive, antisymmetric and transitive
3. When are two states said to be O-equivalent?
- (A) if they have same input
 (B) if they have same output
 (C) if they have both same input and same output
 (D) if they have either same input or same output
4. What is $n(A \cup B)$?
- (A) $n(A) + n(B)$ (B) $n(A) + n(B) - n(A \cap B)$
 (C) $n(A) + n(B) + n(A \cap B)$ (D) $n(A \cap B) - n(A) - n(B)$
5. Identify the domain for the reciprocal function
- (A) $(-\infty, \infty)$ (B) $(0, \infty)$
 (C) $(-\infty, 0) \cup (0, \infty)$ (D) $[0, \infty)$
6. In the theory of automata, if $y = a^2$ what is y^3 ?
- (A) 9 (B) 8
 (C) 6 (D) ϵ

7. Which of the following is the contra positive of the proposition If today is Friday, then it is raining
- (A) If it is raining, then today is Friday
 - (B) If it is not raining, then today is not Friday
 - (C) If today is not Friday, then it is not raining
 - (D) If today is not Friday, then it is raining
8. A _____ constructor is used to declare and initialize an object from another object.
- (A) Static
 - (B) Dynamic
 - (C) Default
 - (D) Copy
9. The processor analyzing which instructions are dependent on each other's result and the instructions are scheduled to be executed when ready, independence of the original program order is called
- (A) Branch prediction
 - (B) Speculative execution
 - (C) Data flow analysis
 - (D) Super scalar execution
10. Which of the following as the third generation microprocessors?
- (A) INTEL 8085, MOTOROLA M6800
 - (B) INTEL 80486, MOTOROLA M68030
 - (C) INTEL 80286, MOTOROLA 68000
 - (D) INTEL 4040, INTEL 8008
11. Which of the following applications are the fourth generation processor?
- (A) Process Control Systems
 - (B) Business and Data Processing Applications
 - (C) Multi-user, Multi-function Environment
 - (D) Accounting Systems

12. If the opcode length is n bits, how many distinct operations are there?
- (A) 2^{n+1} or less (B) 2^{n-1} or less
 (C) 2^n or less (D) n or less
13. Which of the following is incorrectly paired?
- (A) DR – Holds memory operand
 (B) AR – Holds address of instruction
(C) IR – Holds instruction code
(D) PC – Holds next address of an instruction
14. Which of the following instruction is an example for Implied Mode?
- (A) LDA 200 (B) MOV R1, R2
(C) ADD R1 (D) CMA
15. Name the mode where the content of base register is added to the address part of the instruction to obtain effective address?
- (A) Index Addressing Mode
(B) Relative Addressing Mode
 (C) Base Register Addressing Mode
(D) Direct Addressing Mode
16. What is the acronym of RISC?
- (A) Reverse Instruction Set Computing
(B) Reduced Information Set Computing
 (C) Reduced Instruction Set Computer
(D) Reduced Information Set Calculation
17. The timing of the communication process is controlled by the group of circuits called as
- (A) Memory Unit (B) IO Unit
 (C) Control Unit (D) AL Unit

18. _____ variable is the only one that is not stored in memory.
- (A) Static (B) Automatic
 (C) Register (D) Extern
19. Efficient way to represent when several stacks and queues co-exist is done by using
- (A) Arrays (B) Trees
 (C) Memory segment (D) List
20. What is the short cut key used to create new folder in MS-Word?
- (A) ALT+1
(B) ALT+2
 (C) ALT+4
(D) ALT+5
21. How to declare the integer pointer variable?
- (A) int pu (B) int +pu
 (C) int *pu (D) int & pu
22. How to invoke a procedure?
- (A) call procedure name (parameter list)
(B) procedure name (parameter list)
(C) get procedure name (parameter list)
(D) goto procedure name (parameter list)
23. Which operator is used to denote the address of a variable and which format specification code character is used to specify the address?
- (A) &, %d (B) &, %u
(C) *, %d (D) *, %u

24. The statement which enables both forward and backward jump is

- (A) goto (B) break
(C) exit (D) continue

25. _____ technique achieves randomization but considered to be very space inefficient.

- (A) Direct addressing (B) Directory lookup
(C) Hashing (D) Sequential

26. main()

```
{int arr[] = {1, 2, 3, 4, 5};  
int *ptr = arr;  
int *ptr1 = arr + 2;  
printf ("%d", *ptr1 - *ptr);}
```

What is the output of the above program?

- (A) 4 (B) 3
 (C) 2 (D) 1

27. The data type which does not really create a new type, but only gives a new name to an existing type is

- (A) enum (B) typedef
(C) void (D) string

28. What is the primary objective of file organization?

- (A) to provide file creation
 (B) to provide record retrieval and update
(C) to provide record deletion
(D) to provide record creation

29. Name the hashing function if it satisfying the following property. If X is an identifier chosen at random from the identifier space, then the probability that $f(X) = i$ to be $1/b$ for all buckets i . Then a random X has an equal chance of hashing into any of the b buckets.

- (A) distributed hash function (B) indexed hash function
(C) random hash function (D) uniform hash function

30. A process is said to be in _____, when it is waiting for an event to occur before continuing execution.
- (A) Running state
 - (B) Blocked state
 - (C) Ready state
 - (D) Suspended state
31. Magnetic tape unit is _____ storage device.
- (A) Main
 - (B) Serial access
 - (C) Direct access
 - (D) Random access
32. Which of the loader function accomplishment is not correct with respect to absolute loading scheme?
- (A) Allocation – by programmer
 - (B) Linking – by assembler
 - (C) Relocation – by assembler
 - (D) Loading – by loader
33. A segment is a
- (A) Grouping of components that is treated as a device
 - (B) Grouping of information that is treated as an entity
 - (C) Process of classification of components
 - (D) Process of classification of information
34. What is the method of overlapping input, output and processing of a single job?
- (A) Buffering
 - (B) Spooling
 - (C) Multiprogramming
 - (D) Caching
35. _____ is the process of mapping logical addresses to real physical addresses in the memory.
- (A) Addressing modes
 - (B) Address scheme
 - (C) Address binding
 - (D) Address swap



36. What is the problem faced by paging?
- (A) Internal fragmentation
 - (B) External fragmentation
 - (C) Segmentation
 - (D) Swapping
37. Which of the following is a random – access device?
- (A) Magnetic tape
 - (B) DAT cartridge
 - (C) Helical – scan cartridge
 - (D) Optical disk
38. Which is defined as the repository of information about a database?
- (A) Programmed data
 - (B) Distributed data
 - (C) Data warehouse
 - (D) Data dictionary
39. A subschema can be defined as
- (A) Programmers view and student's view
 - (B) User's view of the data item
 - (C) System programmers view
 - (D) DBA's view
40. A domain is atomic, if elements of the domain are considered as
- (A) Indivisible units
 - (B) Divisible units
 - (C) Substructure
 - (D) Relation
41. Transitive functional dependency is FD, where the determinant consists of
- (A) Key attributes
 - (B) Primary key attributes
 - (C) Non-key attributes
 - (D) Super key attributes

42. Lower level entity set are not constrained by a membership condition rather the database user assigns entities to a given entity set. What type of constraints this?
- (A) Condition defined
 - (B) Attribute defined
 - (C) User defined
 - (D) (A) and (B)
43. Which one of the following is correct, for the purpose of views?
- (A) Views are used for customers to modify
 - (B) Views can be used to hide sensitive information
 - (C) Views allows users not to see the data
 - (D) View can be created for sensitive data
44. When the subquery return more than one value then the following operator is used?
- (A) is
 - (B) =
 - (C) IN
 - (D) <
45. PL/SQL supports the use of subprograms they are
- (A) Declaration and procedure
 - (B) Declaration and function
 - (C) Function and procedure
 - (D) Function and triggers
46. Choose the query for find all loan numbers that appear in loan relation with the amount is having null values
- (A) Select loan – number from loan where amt is null
 - (B) Select loan – number from loan where amt = null
 - (C) Select loan – number from loan where amt = empty
 - (D) (A) and (B)

47. What is virus in computer system?
- (A) A virus is a small program
 - (B) A virus is an illicitly introduced code that damages the system
 - (C) A virus is a disease caused by continuous usage of computers
 - (D) A virus is a protecting hardware
48. What is MAN in Network terminology?
- (A) Metropolitan Area Network
 - (B) Mobile Area Network
 - (C) Main Access Network
 - (D) Macro Access Network
49. The _____ layer divides the stream of bits received from the network layer into manageable data units called Frames.
- (A) Physical
 - (B) Transport
 - (C) Application
 - (D) Data link
50. Which topology requires a central controller or hub?
- (A) Star
 - (B) Mesh
 - (C) Bus
 - (D) Ring
51. How many layers are in OSI model in Network Communications?
- (A) 6
 - (B) 7
 - (C) 8
 - (D) 9
52. The flow control mechanism is required to prevent overwhelming the receiver because _____
- (A) the rate at which the data are absorbed by the receiver is less than the rate produced in the sender
 - (B) the rate at which the data absorbed by the receiver is greater than the sender
 - (C) sender is slow speed
 - (D) the receiver is high speed than sender

53. The reduction in the number of cross-points results in a phenomenon called
- (A) Reducing
 - (B) Splitting
 - (C) Blocking
 - (D) Compressing
54. Power line communication strongly disturbs certain forms of radio communication, eg. amateur radio because it
- (A) may interface with other technologies
 - (B) facilitates interpersonal communications
 - (C) may be insecure
 - (D) allows sharing of files, data and other types of information
55. Wireless local area networks use a high and low frequency to enable communication between multiple devices in a limited area using
- (A) Cellular and PCS systems
 - (B) Communication satellites
 - (C) Terrestrial microwave
 - (D) Radio and spread spectrum
56. Device that forwards and filters OSI layer and datagrams between parts based on the MAC addresses in the packets is done by
- (A) Routers
 - (B) Bridges
 - (C) Switches
 - (D) Hubs
57. A network in which each node is connected to every other node in the network is called
- (A) A mesh network
 - (B) A tree network
 - (C) A ring network
 - (D) A fully connected network

58. Verification means

- (A) Are we building the product right?
- (B) Are we constructing the right product?
- (C) Are we building the right product?
- (D) Are we implementing the product right?

59. CBSE stands for

- (A) Component Based Software Engineering
- (B) Control Based Software Engineering
- (C) Complex Business Software Engineering
- (D) Component Based System Engineering

60. _____ team is a nimble team able to appropriately respond to changes

- (A) Development team
- (B) PSP team
- (C) Agile team
- (D) The XP team

61. A software is intangible due to the following reasons EXCEPT

- (A) It has no mass
- (B) It has no color
- (C) It has no structure
- (D) It has no physical properties

62. _____ is the process of isolating and correcting cause of known errors

- (A) Unit testing
- (B) Integrating
- (C) Debugging
- (D) Assertions

63. Basis path testing is a white box testing technique first proposed by

- (A) Steven Harington
- (B) Tom Mccabe
- (C) Jackson
- (D) Myers

64. The time that will elapse before accrued benefits overtake accrued costs is called as
- (A) Time value of money
 - (B) Tangible benefit
 - (C) Payback period
 - (D) Net present value
65. The device enter the data and perform transactional calculations and produce some output is
- (A) Optical mark
 - (B) Mouse
 - (C) Point of sale
 - (D) Magnetic ink
66. _____ is a screen-based control that consists of a single - line text box followed by two small buttons.
- (A) List box
 - (B) Check box
 - (C) Text box
 - (D) Spin box
67. To save the currently opened file in word with a different name
- (A) Select, copy and paste
 - (B) Save
 - (C) Save as
 - (D) All
68. The _____ metric is used to estimate the effort and size of a program
- (A) Function point
 - (B) Lines of code
 - (C) Token
 - (D) Process
69. Monolithic software means
- (A) Large program composed of a single module
 - (B) Large program only
 - (C) Large program composed of a separate module
 - (D) Large program constructed with in a module

70. An ellipse can be rotated about its center coordinates by rotating the

- (A) End points (B) Major axis
 (C) Major and minor axes (D) Minor axis

71. The three-dimensional translation equation in matrix form is

- (A) $x' = x + t_x, y' = y + t_y, z' = z + t_z$
(B) $x' = x + t_y, y' = y + t_z, z' = z + t_x$
(C) $x' = x + t_z, y' = y + t_x, z' = z + t_y$
(D) $x' = t_x + t_y, y' = t_y + t_z, z' = t_z + t_x$

72. A bitmap is _____ bit (s) per pixel.

- (A) 0 (B) 1
(C) 2 (D) 3

73. In raster display, at the end of each frame the electron beam returns to the left corner of the screen to start next frame as known as

- (A) Peristance
 (B) Vertical retrace
(C) Stroke
(D) Horizontal retrace

74. An filling that starts from a specified interior point (x, y) and reassign all pixel values that are currently set to a given interior color with the desired fill color is

- (A) Flood fill (B) Boundary fill
(C) Contour fill (D) Selection fill

75. The device for specifying text input is known as

- (A) Locator (B) String
(C) Stroke (D) Pick

76. Which one of the following is the standard method for selection of a coordinate point?
- (A) Drag and drop
 - (B) Pop-down menu
 - (C) Keyboard short-cut
 - (D) Positioning the screen cursor
77. In which mode, do the input devices initiate data input to the application program?
- (A) Request
 - (B) Sample
 - (C) Event
 - (D) Pick
78. Which of the following is a closed shape consisting of a sequence of line segments?
- (A) Curve
 - (B) Arc
 - (C) Polygon
 - (D) Chord
79. Which algorithm fills a polygon by starting with a specified interior point (seed)?
- (A) Boundary
 - (B) Flood-fill
 - (C) Fill-area
 - (D) Area-fill
80. Length () is a method is used in _____ for finding its length.
- (A) Arrays
 - (B) Array test
 - (C) Strings
 - (D) Arrays and strings
81. Any variable it is to be referred in the calling place of the method is called.
- (A) Actual parameter
 - (B) Global variables
 - (C) Local variables
 - (D) Formal parameters

82. Which one of the following is not a derived data type?
- (A) Pointers
 - (B) Arrays
 - (C) Functions
 - (D) Enumeration
83. Which operator have the lowest priority when we apply precedence?
- (A) Logical
 - (B) Conditional
 - (C) Assignment
 - (D) Comma
84. Pick the operator from the following that cannot be overloaded in C++
- (A) **
 - (B) --
 - (C) +
 - (D) ::
85. _____ are primary runtime entities in object oriented programming
- (A) Classes
 - (B) Methods
 - (C) Objects
 - (D) Functions
86. To add data at the end of the file, the file should be opened in
- (A) Read mode
 - (B) Write mode
 - (C) Append mode
 - (D) Create mode
87. Multiple inheritance can be implemented in Java using
- (A) Polymorphism
 - (B) Threading
 - (C) Interfaces
 - (D) Finalizer

88. The interface cannot have

(A) Methods

(B) Variables

(C) Constructors

(D) Operators

89. Match the following :

(a) Used for E-mail transfer

1. HTML

(b) Used to retrieve web page

2. HTTP

(c) Web browser

3. SMTP

(d) Web page document

4. Internet Explorer

(a) (b) (c) (d)

(A) 2 3 4 1

(B) 3 2 4 1

(C) 3 2 1 4

(D) 3 1 2 4

90. Which tool is used to submit the search to more than one search engine?

(A) Directory

(B) Search engine

(C) Meta-search site

(D) Human search service

91. Which tag is a keyword used to specify the appearance of the web page?

(A) < head >

(B) < html >

(C) < body >

(D) < Link >

92. Which of the following tells about the HTML version?

(A) Base

(B) Meta

(C) Prologue

(D) Link

93. The purpose of the web browser is

- (A) to display web pages
- (B) to display internet convection
- (C) to display images
- (D) to display the result

94. Which tag is used to display the text on the title bar of the browser window?

- (A) <HTML>
- (B) <HEAD>
- (C) <BODY>
- (D) <TITLE>

95. To add a link to your email address use.

- (A) mailto:
- (B) mail:
- (C) emailto:
- (D) email:

96. Popular Email Software Programs

- (A) Perl
- (B) Outlook Express
- (C) CGL
- (D) Java

97. Which command is used for copying others without the primary recipient knowing it?

- (A) bcc
- (B) cc
- (C) reply all
- (D) forward

98. How many connectives are used in propositional logic?
- (A) 3 (B) 4
 (C) 5 (D) 6
99. Identify the type of the statement "If you do your homework, you will not be punished"
- (A) implication (B) inverse
 (C) converse (D) contra positive
100. Which of the following is the dual of $(A \cap B) \cup C$?
- (A) $(A \cup B) \cap C$ (B) $(\bar{A} \cap \bar{B}) \cup \bar{C}$
 (C) $(\bar{A} \cup \bar{B}) \cap \bar{C}$ (D) $A \cap (B \cup C)$
101. Of the logical operators, NOT, AND and OR which has got the highest precedence
- (A) NOT (B) AND
 (C) OR (D) AND and OR
102. Identify the disjoint set
- (A) $\{2, 3\}$ and $\{x : x \text{ is a solution of } x^2 - 5x + 6 = 0\}$
 (B) $\{x : x \text{ is a vowel}\}$ and $\{a, b, c, d, e\}$
 (C) $\{x : x \text{ is a solution of } x^2 - 1 = 0\}$ and $\{y : y \in z \text{ and } -2 \leq y \leq 2\}$
 (D) $\{1, 3, 5\}$ and $\{2, 4, 6\}$
103. If $A = \{x : x \text{ is an even natural number } \leq 10\}$ and $B = \{x : x \text{ is an odd natural number } \leq 10\}$
 What is $A - B$?
- (A) $\{2, 4, 6, 8, 10\}$ (B) $\{1, 3, 5, 7, 9\}$
 (C) $\{\}$ (D) $\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$
104. Which of the following relation is a bijective function?
- (A) one-to-one (B) onto
 (C) one-to-one and onto (D) many-to-one



105. Which of the following is used to implement a context free grammar?
- (A) DFA (B) NDFA
(C) Pop-up automaton (D) Push down automaton
106. Which is used to derive a string using the production rules of a grammar?
- (A) interpreter (B) linker
(C) compiler (D) parser
107. Which of the following language is generated by type – 1 Grammars?
- (A) Regular
(B) Context-free
 (C) Context-sensitive
(D) Recursively-enumerable
108. When is a function ψ from P to Q said to be isomorphism?
- (A) if it is order preserving
(B) if it is injective embedding
 (C) if it is surjective embedding
(D) if it is either injective embedding or order preserving
109. Which of the following is equivalent to $P \rightarrow (Q \rightarrow R)$?
- (A) $(P \wedge Q) \rightarrow R$ (B) $(P \vee Q) \rightarrow R$
(C) $P \wedge (Q \rightarrow R)$ (D) $P \vee (Q \rightarrow R)$
110. When is a partially ordered set called well ordered?
- (A) if every nonempty subset of it has a least member
(B) if every subset of it has a greatest member
(C) if it is not totally ordered
(D) if it is in ascending order

111. The instructions which performs operations like complement, compare and rotate and flag conditions are altered after execution of an instruction are called
- (A) Branching Instructions
 - (B) Logical Instructions
 - (C) Arithmetic Instructions
 - (D) Data Transfer Instructions
112. The instructions related to interrupts and used to halt program execution are called as
- (A) Arithmetic Instructions
 - (B) Machine Control Instructions
 - (C) Branching Instructions
 - (D) Data Transfer Instructions
113. In 8086 processor, which flag is set if there is an overflow out of bit 3 ie., carry from lower nibble to higher nibble (D_3 bit to D_4 bit)?
- (A) Sign Flag
 - (B) Auxiliary Flag
 - (C) Zero Flag
 - (D) Parity Flag
114. The efficient programmer prefers to use which registers to store immediate results than the memory locations which require bus access and hence more time to perform the operation?
- (A) Sixteen Bit Registers
 - (B) General Purpose Registers
 - (C) Special Purpose Registers
 - (D) Temporary Registers
115. Which instruction group allow the microprocessor to change the sequence of a program, either unconditionally or under certain test conditions?
- (A) Arithmetic group
 - (B) Logic group
 - (C) Branch group
 - (D) Data transfer group



116. _____ is a set of programs is used to translate the 8085 mnemonics into machine codes.
- (A) Assembler (B) Compiler
 (C) Cross - assembler (D) Loader
117. Simultaneous data processing task to increase the computational speed is called
- (A) Super Computer (B) Parallel Processing
(C) Vector Processing (D) Multi Processing
118. The behaviour of a pipeline can be illustrated with a
- (A) Alpha-Beta diagram
 (B) Space-time diagram
(C) Memory-speed diagram
(D) CPU organization diagram
119. Which of the pair given below is/are correct?
- I. DMA - CPU ideal
II. LRU - Replacement algorithm
III. Main memory - Virtual address
- (A) I only
 (B) I and II only
(C) II and III only
(D) III only
120. The performance of cache memory is frequently measured in terms of a quantity called
- (A) access time (B) hit ratio
(C) performance ratio (D) write through
121. Which of the following function can be used to get one character from the keyboard without hitting the RETURN key and also without displaying it on the monitor?
- (A) scanf() (B) getchar()
 (C) getch() (D) getche()

122. What is the meaning of "if $\text{top} \leq 0$ " in Stack?
- (A) Stack - Full (B) Stack - Empty
- (C) Stack = top + 1 (D) Stack - Half Empty
123. How many times the statement in following body of loop will be executed?
- for ($a = 35$; $a \leq 20$; $a --$)
 {Printf (" $\backslash n$ ") ; }
- (A) 15 (B) 16
- (C) 0 (D) 35
124. If a name to be searched is either at the beginning or at the end of list, then it is better to employ _____ search technique.
- (A) Linear (B) Binary
- (C) Fibonacci (D) Interpolation
125. What is the name of the procedure to hand over node X to the storage pool?
- (A) HAND(X) (B) FREE(X)
- (C) RET(X) (D) DELETE(X)
126. What is the postfix form of the infix expression $A/B + +C * D + E$?
- (A) $ABC ** / * DE +$ (B) $ABC ** / DE * +$
- (C) $ABC ** / D * E +$ (D) $ABCDE ** / * +$
127. What is the meaning of a computing time $O(1)$?
- (A) Constant (B) Linear
- (C) Quadratic (D) Cubic
128. Who developed the quick sort scheme?
- (A) Ellis Horowitz (B) C.A.R. Hoare
- (C) Sartaj Sahni (D) Nicolas Worth

129. In an assembler language program, the line numbers are

- (A) for reference only
- (B) part of the program
- (C) to indicate comments line
- (D) to specify first executable instruction

130. Which loader allows program relocation?

- (A) Boot strap loader
- (B) Dynamic loader
- (C) Linking loader
- (D) Relative loader

131. Elimination of common sub expressions is known as

- (A) Parsing
- (B) Scanning
- (C) Code generation
- (D) Code optimization

132. What is meant by job scheduling in batch processing?

- (A) Scheduling of jobs for the purpose of compilation
- (B) Scheduling of jobs for the purpose of execution on processor
- (C) Scheduling of jobs for the purpose of storage on memory
- (D) Scheduling of jobs for the purpose of completion

133. Assembler is a

- (A) Circuit
- (B) High level language
- (C) Translator software
- (D) Component of computer

134. Which will load the Program from secondary storage to memory to start its executions?

- (A) Process creation
- (B) Process suspending
- (C) Process scheduling
- (D) Process resuming

135. What type of loading will load all routines in the main memory during compilation?
- (A) Static loading
 - (B) Dynamic loading
 - (C) Run time loading
 - (D) Execution loading
136. What type of memory management partitions memory during run time?
- (A) Static partitioning
 - (B) Dynamic partitioning
 - (C) Paging
 - (D) Segmentation
137. _____ will spend more time in paging rather than execution.
- (A) Demand paging
 - (B) Demand segmentation
 - (C) Thrashing
 - (D) Page replacement policy
138. 'Bakery algorithm' will provide
- (A) Two - process solutions
 - (B) Multi - process solutions
 - (C) Deadlock solutions
 - (D) Fragmentation solutions
139. What is another name for spin lock?
- (A) Monitors
 - (B) Binary semaphores
 - (C) Counting semaphores
 - (D) Check points
140. In banker's algorithm, the safe state is called as
- (A) Deadlock state
 - (B) Non-deadlocked state
 - (C) Polling state
 - (D) Waiting state



141. A super key is a set of one or more attributes that, taken collectively allow us to identify uniquely a tuple in the
- (A) Schema (B) E.R. Diagram
(C) Attributes (D) Relation
142. An entity is an object that exist and is distinctly identifiable from other
- (A) data (B) entity
 (C) object (D) attribute
143. Which is the method of storing tables, that are often accessed together?
- (A) Sequential method (B) Direct access method
(C) Index method (D) Clustering
144. The user can see the data in a database either through a base table or through
- (A) Updated table (B) Modified table
(C) File (D) View
145. Indexes are organized as B – trees each block of the index occupies one page in storage, it is known as
- (A) Base table (B) Index page
(C) Block (D) Page
146. A relation R is in BCNF if and only if every determinant is a
- (A) Primary key (B) Non – primary key
 (C) Candidate key (D) Super key
147. The discriminator of a weak entity set is a set of attributes that allow
- (A) Distinction to be made (B) Elimination
(C) Contribute (D) Elevation

148. Query languages are of two types they are
- (A) Procedural and non procedural
 - (B) Procedural and programming
 - (C) Procedural and PL/SQL
 - (D) Procedural and nested queries
149. An attribute which is further divided is known as
- (A) Composite attribute
 - (B) Derived attribute
 - (C) Multi valued attribute
 - (D) Single attribute
150. "A relation is said to be in normal form if and only if every entry of the relation has atmost a single value only". What normal form it is?
- (A) Second normal form
 - (B) Fourth normal form
 - (C) First normal form
 - (D) Third normal form
151. The _____ function returns the number of rows in the result and does not count the null values.
- (A) COUNT
 - (B) VARIANCE
 - (C) AVG
 - (D) MIN



152. How many layers are in TCP/IP protocol suite?
- (A) Seven (B) Six
 (C) Five (D) Four
153. Which coaxial cable connector is suitable for bus topologies?
- (A) T-Connectors
(B) Barrel Connectors
(C) Bayonet Network Connectors
 (D) Terminators
154. Radio Communication frequencies ranges from
- (A) 3 KHz to 300 KHz
 (B) 3 KHz to 300 GHz
(C) 3 KHz to 3000 GHz
(D) 300 KHz to 3 GHz
155. Terrestrial, Satellite microwave and radar communications uses _____ waves.
- (A) Ultra high frequency
 (B) Super high frequency
(C) Very high frequency
(D) Very low frequency
156. Wavelength is _____ proportional to propagation speed and _____ proportional to period.
- (A) directly, directly
(B) directly, inversely
(C) inversely, inversely
(D) inversely, directly

157. A _____ network is part of a computer network infrastructure that provides a path for the exchange of information between different LANs or sub networks.
- (A) Virtual private (B) Wide Area
(C) Global Area (D) Backbone
158. A set of networks that are under the control of a single administrative entity uses the IP protocol and IP-based tools such as web browsers and file transfer applications is called
- (A) Extranet (B) Inter network
 (C) Intranets (D) Darknet
159. It is used in base band and broad band transmission and do not produce external electric and magnetic fields and are not affected by them. It is the
- (A) Twisted pair
 (B) Coaxial cable
(C) Unshielded Twisted pair
(D) Optical fiber
160. Each router discover its neighbors and learn their network addresses, measure the delay or cost to each of its neighbors is known as
- (A) Link State Routing
(B) Distance Vector Routing
(C) Shortest Path Routing
(D) Hierarchical Routing
161. A HIPO diagram does not contain
- (A) visual table of contents
 (B) program description
(C) a set of overview diagrams
(D) a set of detail diagrams

162. Typist on the computer is usually called

- (A) System Operator (B) Computer Operator
(C) System Typist (D) Computer Typist

163. The toolbar buttons are easier to remember since they display the _____ of tasks they accomplish.

- (A) Menus (B) Tools
(C) Buttons (D) Pictures

164. In Microsoft Excel the active cell is _____ on the sheet.

- (A) Blank cell (B) Highlighted
(C) Bold rectangle (D) Typed cell

165. The formula in cell B5 is given below.

This is copied to cell D8. What will be the formula in D8? If $B5 \rightarrow +A4 + C3$

- (A) $+ A4 + C3$ (B) $+ C7 + E6$
(C) $+ C4 + E3$ (D) $+ E7 + C5$

166. SDLC stands for

- (A) System Development Life Cycle
(B) Software Development Life Cycle
(C) Sequential Development Life Cycle
(D) Server Development Life Cycle

167. System Analysis is driven by the business concerns of _____ and _____

- (A) Software developer and Owner
(B) System Owners and System Users
(C) System Designer and System Owners
(D) System Engineers and System Users

168. The _____ of a module is that module plus all modules that are subordinate to it in the structure chart.
- (A) Scope of effect
 - (B) Transform centred
 - (C) Scope of control
 - (D) Transaction centred
169. The transformation that produces a mirror image of an object is known as
- (A) Translation
 - (B) Reflection
 - (C) Rotation
 - (D) Shearing
170. On a black and white system with one bit per pixel, the frame buffer is commonly called a
- (A) Bitmap
 - (B) Display file
 - (C) Pixmap
 - (D) Refresh buffer
171. Locators are also known as
- (A) Positioning devices
 - (B) Pointing devices
 - (C) Sampled devices
 - (D) Projectors
172. Polygons are translated by adding _____ to the coordinate points of each vertex.
- (A) Translation vector
 - (B) Transformation vector
 - (C) Translation scalar
 - (D) Pivot point



173. Raster graphics is composed of

(A) Paths

(B) Plane

(C) Pixels

(D) Vectors

174. A Pixel is also known as

(A) Cel

(B) Pel

(C) Xel

(D) Kel

175. Which transformation produces a mirror image of an object?

(A) Translation

(B) Scaling

(C) Reflection

(D) Shear

176. Which of the following is the rotation matrix?

(A)
$$\begin{bmatrix} \cos \theta & -\sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$$

(B)
$$\begin{bmatrix} \cos \theta & \sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$$

(C)
$$\begin{bmatrix} -\cos \theta & \sin \theta \\ \sin \theta & \cos \theta \end{bmatrix}$$

(D)
$$\begin{bmatrix} \cos \theta & \sin \theta \\ -\sin \theta & \cos \theta \end{bmatrix}$$

177. How is the reflection about any line $y = mx + b$ in the xy plane accomplished?

(A) Translate – rotate – reflect

(B) Translate – rotate – inverse translate

(C) Translate – rotate – inverse rotate

(D) Translate – rotate – rotate

178. How is the transpose of a rotation matrix obtained?

(A) Changing the sign of cosine terms

(B) Changing the sign of sine terms

(C) Changing the signs of both sine and cosine terms

(D) Rotating the object by 90°

179. _____ method can be defined only once in a program

- (A) Static
- (B) Private
- (C) Finalize
- (D) Main

180. In C++ array subscript always started with

- (A) -1
- (B) 0
- (C) 1
- (D) Any positive integer

181. Break statement is most frequently used with in

- (A) while
- (B) it-else
- (C) do-while
- (D) switch-case

182. In operator overloading, the keyword operator defines a new action or operation to the

- (A) symbol
- (B) consonents
- (C) statements
- (D) operators

183. A class binds the _____ and its related _____ together.

- (A) data, functions
- (B) information, messages
- (C) constants, variables
- (D) class, objects

184. Which one of the following is called insertion operator?

- (A) <<<
- (B) <<
- (C) >>
- (D) >>>

185. _____ is the process of defining a method in subclass having same name and type signature as a method in its super class
- (A) Method hiding
 - (B) Method overloading
 - (C) Method overriding
 - (D) Recursion
186. _____ coding types is used for data type characters in Java
- (A) ASCII
 - (B) ISO-LATIN - I
 - (C) UNICODE
 - (D) EBCDIC
187. _____ data structure is used by operating system to manage the recursion in Java
- (A) Array
 - (B) Queue
 - (C) Tree
 - (D) Stack
188. _____ exception is thrown by close () and read () methods
- (A) IO Exception
 - (B) File Exception
 - (C) File Not Found Exception
 - (D) File Input Output Exception
-
189. While loop is also called as
- (A) Post test loop
 - (B) Pre test loop
 - (C) Infinite loop
 - (D) Pre and post test loop

190. Every e-mail message sent starts with

- (A) email address
- (B) Headers
- (C) Sender
- (D) Trailer

191. The second part of the email address is

- (A) User name
- (B) Password
- (C) Host name
- (D) mail name

192. The message retains the original sender in the From header and add a notation that the message came through is called?

- (A) Replying
- (B) Forwarding
- (C) Redirecting
- (D) Sending

193. To recover deleted e-mail messages click on

- (A) Drafts
- (B) Sent mail
- (C) All mail
- (D) Trash

194. Which of the following sentence is correct?

- (A) email addresses are case sensitive
- (B) email addresses are not case sensitive
- (C) email addresses are case sensitive only in the user name
- (D) email addresses are case sensitive only in the domain name

195. Which of the following is an email address?
- (A) Lewis hamilton @ hotmail.co.UK
 - (B) Lewishamilton @ hotmail.com.UK
 - (C) Lewishamilton@co.UK
 - (D) Lewishamilton@hotmail.co.UK
196. Which element requires an attribute to mark the location of the object to get linked?
- (A) `<a>...`
 - (B) `<p>...</p>`
 - (C) `<h1>...</h1>`
 - (D) `<h2>...</h2>`
197. The numbering in ordered list can be controlled by which of the following attribute?
- (A) start
 - (B) begin
 - (C) ol
 - (D) li
198. _____ is the exchange of computer stored messages by telecommunication?
- (A) Email
 - (B) Internet
 - (C) TCP/IP
 - (D) Web address
199. Which is designed to assist users in locating information on the web?
- (A) web Browsing
 - (B) web Searching
 - (C) web Index
 - (D) web Designing
200. _____ provide a single inter face that enables users to search many different search engine, indexes and database simultaneously.
- (A) Web Index
 - (B) Search Engine
 - (C) Meta-Search Engine
 - (D) Internet Relay Chat