1. The magnetic field strength of solenoid can be increased by

(A) Decreasing the current
(B) Decreasing the number of turns
(C) Removing iron from the field
(D) Increasing the current
(E) Answer not known

2. LVDT is a

(A) Passive Capacitive Transducer
(B) Passive Inductive Transducer
(C) Active Capacitive Transducer
(D) Active Inductive Transducers
(E) Answer not known

3. Which photo electric device is most suitable for digital applications?

(A) Photo-emissive cell
(B) Photo diode
(C) Photo transistor
(D) Photo voltaic cell
(E) Answer not known

4. A Linear Variable Differential Transformer (LVDT) is

(A) a displacement transducer
(B) an impedance matching transformer
(C) a differential temperature sensor
(D) an auto transformer
(E) Answer not known

5. In a 3 phase symmetrical and balanced system, the sum of instantaneous values of emfs of three phase is

(A) always zero
(B) $e_R + e_Y + e_B$
(C) $e_R - e_Y + e_B$
(D) $e_R - e_Y - e_B$
(E) Answer not known

6. In a balanced delta connected system the line current and phase current are related as

(A) $I_L = \sqrt{3}\, I_{ph}$
(B) $I_L = I_{ph}$
(C) $I_{ph} = \sqrt{3}\, I_L$
(D) None of the above
(E) Answer not known

7. Energy stored in a capacitor is given by all of the following relations except

(i) $E = QV/2$
(ii) $E = CV^2/2$
(iii) $E = Q^2/2C$
(iv) $E = QCV/2$

(A) (iv)
(B) (i) and (ii)
(C) (i) and (iii)
(D) All the four expression
(E) Answer not known

8. The basic step of a 9 bit DAC is 10.3 mV. If 000000000 represents 0V, what input is produced if the input is 101101111.

(A) 1.24 V
(B) 3.78 V
(C) 4.26 V
(D) 1.02 V
(E) Answer not known

9. The ratio of transformation in potential transformers

(A) Increases with increase in power factor of secondary burden
(B) Decreases with increase in power factor of secondary burden
(C) Remains constant irrespective of power factor of secondary burden
(D) Proportional to square of the power factor of secondary burden
(E) Answer not known

10. During measurement of voltage and current in a load, ammeter and voltmeter are connected in series and across the load respectively. If voltmeter and ammeter positions are interchanged by mistake, then

(A) Voltmeter will be damaged
(B) Ammeter will be damaged
(C) Both Ammeter and Voltmeter will be damaged
(D) Both the meters are safe
(E) Answer not known

11. A moving coil instrument has the following data. Number of turns = 100, width of the coil = 20 mm, Depth of the coil = 30 mm, Flux density in the gap = 0.1 wb/m^2, deflection torque = 30×10^{-6} Nm. The current through the moving coil is given by

(A) 5 A
(B) 50 mA
(C) 5 mA
(D) 10 mA
(E) Answer not known

12. A 3 phase, 400 V, 50 Hz, 4 pole induction motor runs at a slip of 5 percent. Calculate the speed of the rotor at a slip of 5 percent.

(A) 1425 rpm
(B) zero
(C) 75 rpm
(D) 1500 rpm
(E) Answer not known

13. The iron loss of a certain transformer at full load is 100 watts. This loss at half load will be

(A) 50 w
(B) 25 w
(C) 20 w
(D) 100 w
(E) Answer not known

14. In a DC motor, speed control by changing the armature circuit resistance provides a

(A) Constant power drive
(B) Constant torque drive
(C) Variable torque drive
(D) Variable power drive
(E) Answer not known

15. The limit of voltage harmonic distortion for any typical application is

(A) 3% (B) 5%

(C) 10% (D) 15%

(E) Answer not known

16. In a 3-phase full converter, the six SCRs are fired at an interval of

(A) 30° (B) 60°

(C) 90° (D) 120°

(E) Answer not known

17. A PWM switching scheme is used in single phase inverters to

(A) Reduce the total harmonic distortion

(B) Minimise the load on the dc side

(C) Increase the life of batteries

(D) Reduce low order harmonics and increase higher order harmonics

(E) Answer not known

18. Zener diode is operated in _____ region.

(A) Active

(B) Breakdown

(C) Forward bias

(D) Cut off

(E) Answer not known

19. In JFET, the channel conductivity is primarily controlled by

(A) Drain to source voltage
(B) Source to drain voltage
(C) Gate to source voltage
(D) Base to emitter voltage
(E) Answer not known

20. A JFET

(A) is a current controlled device
(B) has low input impedance
(C) is a voltage controlled device
(D) has very large voltage gain
(E) Answer not known

21. What does MAODV stand for?

(A) Multicast Adhoc on-Demand distance vector
(B) Mobile Adhoc optimized Distance vector
(C) Multicast Adaptive on-Demand vector
(D) Modified Adhoc on-Demand vector
(E) Answer not known

22. A proactive routing protocol is also known as a _____ routing protocol.

(A) Table driven
(B) On-demand
(C) Hybrid
(D) All the above
(E) Answer not known

23. If a node wants to know the current location of a mobile Node (MN), it sends a request to Home Agent (HA). The method is called

(A) Binding update
(B) Binding warning
(C) Binding request
(D) Binding acknowledgement
(E) Answer not known

24. The _____ defines the current location of the mobile node (MN) from an IP point of view.

(A) Foreign Agent (FA)
(B) Care of address (CoA)
(C) Home Network
(D) Foreign Network
(E) Answer not known

25. For any given code h, it is computationally infeasible to find x such that $H(x) = h$. A hash function with this property is referred to as

(A) Second preimage resistant
(B) One way or preimage resistant
(C) Collision resistant
(D) Strong Collision resistant
(E) Answer not known

26. _____ is defined as an attack in which the adversary chooses a number of cipher texts and is then given the corresponding plaintexts, decrypted with the target's private key.

(A) Ciphertext attack
(B) Chosen ciphertext attack
(C) Malware attack
(D) Timing attack
(E) Answer not known

27. Vigenere cipher belongs to

(A) Poly alphabetic ciphers
(B) Mono alphabetic ciphers
(C) Bi - alphabetic ciphers
(D) Multi - alphabetic ciphers
(E) Answer not known

28. The _____ algorithm which defines the details of how to monitor the Queue length and when to drop a packet.

(A) RED – Random Early Detection
(B) DEC bit
(C) Source based congestion
(D) Leaky bucket algorithm
(E) Answer not known

29. The mechanism is used to convert domain name into IP address is known as

(A) URL
(B) DNS
(C) FTP
(D) HTTP
(E) Answer not known

30. Which of the following WLAN standard has been named WiFi?

(A) IEEE 802.6
(B) IEEE 802.15.4
(C) DSSS IEEE 802.11b
(D) IEEE 802.11g
(E) Answer not known

31. _____ is designed to improve network efficiency by reducing the number of packets sent particularly for streams of small data.

(A) Dynamic routing algorithm
(B) Nagle's algorithm
(C) Link-state Routing algorithm
(D) Dijkstra's shortest path algorithm
(E) Answer not known

32. A simple protocol used for fetching email from a remote mail box is

(A) POP3
(B) IMAP
(C) DMSP
(D) SMTP
(E) Answer not known

33. User Datagram Protocol (UDP) is called connectionless because

(A) All UDP packets are treated independently by transport layer
(B) It sends data as a stream of related packets
(C) It is received in the same order as sent order
(D) It sends data very quickly
(E) Answer not known

34. _____ technology is one of the most promising for supporting high speed digital communication over the existing telephone.

(A) CMTS
(B) DSL
(C) MODEM
(D) Cable
(E) Answer not known

35. _____ is a non-adaptive routing algorithm where every incoming data packet is forwarded to all outgoing links except the one it arrived on

(A) Flooding
(B) Distance vector routing
(C) Path vector algm.
(D) Link state routing
(E) Answer not known

36. _____ is an IP address allocation method that improves data routing efficiency on the internet.

(A) ICMP
(B) DHCP
(C) ARP
(D) CIDR
(E) Answer not known

37. The three layers in Asynchronous Transfer Mode (ATM) are

(A) ATM Adaptation Layer (AAL), ATM Layer and Physical Layer
(B) Application Layer, Transport Layer and ATM
(C) Session Layer, ATM Layer and Physical Layer
(D) Internet Layer, Application Layer and ATM Layer
(E) Answer not known

38. What is the main purpose of using collision - free protocols in computer networks?

(A) To reduce network traffic
(B) To improve network security
(C) To increase network efficiency and reduce contention
(D) To decrease latency
(E) Answer not known

39. Which of the following protocol is responsible for converting higher level protocol address to physical network address?

(A) Reverse Address Resolution Protocol (RARP)
(B) Bootstrap Protocol (BOOTP)
(C) Address Resolution Protocol (ARP)
(D) Internet Control Message Protocol (ICMP)
(E) Answer not known

40. The technique of temporarily delaying outgoing acknowledgements so that they can be hooked on to the next outgoing data frame is called

(A) Cyclic redundancy check
(B) Parity check
(C) Piggybacking
(D) Fletcher's checksum
(E) Answer not known

41. In linked allocation

(A) Each file must occupy a set of contiguous blocks of the disk
(B) Each file is a linked list of storage blocks
(C) All the pointers are scattered blocks are placed together in one location
(D) None of these
(E) Answer not known

42. Which among the following is not an essential characteristic of NIST cloud model?

(A) Rapid elasticity
(B) Multi-tenancy
(C) Resource pooling
(D) Broad network access
(E) Answer not known

43. Which among the essential characteristics of cloud computing is not efficient in grid computing model?

(A) Rapid elasticity
(B) Resource sharing
(C) Distributed service
(D) Both (A) and (B)
(E) Answer not known

44. File type can be represented by

(A) File name
(B) File extension
(C) File identifier
(D) Binary
(E) Answer not known

45. The software layer implementing virtualization is known as

(A) Operating systems
(B) Hypervisor
(C) Application layer
(D) None of these
(E) Answer not known

46. Disk address consists of

(A) Cylinder number, track number
(B) Cylinder number, track number, sector number
(C) Cylinder number, sector number
(D) None of the above
(E) Answer not known

47. Consider the following set of processes, assumed to have arrived at time o in the order $P_1, P_2, .., P_5$ with the length of the CPU bust given in milliseconds

Process	Bust Time	Priority
P	10	3
P_2	1	1
P_3	2	4
P_4	1	5
P_5	5	2

Using priority scheduling, the average waiting time is

(A) 8 – 2 milliseconds
(B) 6 – 5 milliseconds
(C) 7 milliseconds
(D) 7 – 5 milliseconds
(E) Answer not known

48. The _____ facility enables a user thread to specify a function that is to be called when the user thread receives notification of a particular event.

(A) Synchronous procedure call
(B) Asynchronous procedure call
(C) Default procedure call
(D) User defined procedure call
(E) Answer not known

49. A thread library available for Solaris systems and adopted in early versions of Java, uses the many to one model

(A) Green threads
(B) Write threads
(C) Blue threads
(D) User threads
(E) Answer not known

50. To establish and maintain communication between two processes windows uses

(A) Connection ports and communication ports
(B) Local ports and communication ports
(C) System ports and Local ports
(D) Parallel ports
(E) Answer not known

51. _____ focuses on distributing subsets of the same data across multiple computing cores and performing the same operation on each core.

(A) Task parallelism
(B) Data parallelism
(C) Process parallelism
(D) None of the above
(E) Answer not known

52. On Unix systems, ordinary pipes are constructed using the function

1. Pipe (fd [ ])
2. Pipe (int fd [ ])
3. Pipe (int)
4. Pipe ( )

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

53. When a process creates a new process, two possibilities for execution exist?

1. The parent continues to execute concurrently with its children
2. The parent waits until some or all of its children have terminated.
3. The children process is a duplicate of the parent process
4. The child process has a new program loaded into it

(A) 1 and 2 are correct
(B) 1 and 3 are correct
(C) 2 and 4 are correct
(D) 2 and 3 are correct
(E) Answer not known

54. _____ is used when the source CPU type is different from the target CPU type

(A) Virtualization
(B) Emulation
(C) Interpretation
(D) None of the above
(E) Answer not known

55. Linux uses _____ to implement CPU scheduling algorithms.

(A) general tree
(B) binary tree
(C) binary search tree
(D) balanced binary search tree
(E) Answer not known

56. Which one of the following is NOT the type of Linked List?

(A) singly linked list
(B) doubly linked list
(C) circularly linked list
(D) dotted linked list
(E) Answer not known

57. Identify the correct :

Suppose an integer A in file B resides on Magnetic disk. If the value of A is to be incremented, which of the following correctly migrates A to CPU for execution.

(A) Hardware register → Cache → Main Memory → Magnetic disk
(B) Cache → Main Memory → Magnetic disk → Hardware register
(C) Magnetic disk → Main Memory → Cache → Hardware register
(D) Cache → Magnetic disk → Main Memory → Hardware
(E) Answer not known

58. Choose the right answer :

Traditional UNIX system structure

(A) is layered

(B) the kernel provides file system, CPU scheduling and memory management

(C) the kernel is modularised

(D) both (A) and (B)

(E) Answer not known

59. The I/O subsystem consists of

(1) A memory management component that includes buffering, caching and spooling

(2) A general device-driver interface

(3) Drivers for specific hardware devices

(4) All the above

(A) (1) (B) Both (1) and (2)

(C) (4) (D) Both (1) and (3)

(E) Answer not known

60. Choose the right answer among type :

Which of the following statements are true about Multicore Multiprocessor?

(i) They can be more efficient than multiple chips with single core.

(ii) One chip with multiple cores uses significantly less power than multiple single – core chips.

(iii) It is a multiple single – core chip.

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

61. Which property means that the copies of the same information item at the successive memory levels must be consistent?

(A) Round-trip time
(B) Inclusion
(C) Coherence
(D) Locality of reference
(E) Answer not known

62. The USB Pen drives and SD cards are made up _____ memory.

(A) NOR Flash
(B) NAND Flash
(C) PROM
(D) EEPROM
(E) Answer not known

63. Which systems typically involve distributed clusters of processors connected by buses or local area networks?

(A) Uniform Memory Access (UMA)
(B) Non Uniform Memory Access (NUMA)
(C) Direct Memory Access (DMA)
(D) None of the above
(E) Answer not known

64. Shared writable data are _____ and remains in the main memory.

(A) Cachable
(B) Non-Cachable
(C) Centralized Cachable
(D) Snoopy Cache
(E) Answer not known

65. In which mapping, each word of cache, can store two or more words of memory under the same Index address?

(A) Mapping
(B) Associative Mapping
(C) Direct Mapping
(D) Set-Associative Mapping
(E) Answer not known

66. Which metric removes the discrepancy between systems with different numbers of clocks per operation by measuring instructions per second rather than clocks per second?

(A) Latency
(B) Through put
(C) Relative performance
(D) Millions of Instruction Per Second (MIPS)
(E) Answer not known

67. Conversion of $0.8125_{(10)}$ into its binary fraction

(A) 0.1101_2
(B) 0.0011_2
(C) 0.1010_2
(D) 0.1110_2
(E) Answer not known

68. Find the sum and output carry of a half adder for set of input bits 01

(A) sum = 1, o/p carry = 0
(B) sum = 1, o/p carry = 1
(C) sum = 0, o/p carry = 0
(D) sum = 0, o/p carry = 1
(E) Answer not known

69. Choose the address mode for the following statement :

"It is used in conjunction with two byte instructions where the first byte is op code and the second byte is the operand.

(A) Direct Addressing mode
(B) Immediate Addressing mode
(C) Inherent Addressing mode
(D) Index Addressing mode
(E) Answer not known

70. Choose the correct statement about Cache Memory

(A) process that copies frequently accessed instructions
(B) contains program and data Associated with them
(C) system specific low level code
(D) page replacement
(E) Answer not known

71. Choose correct answer for the following Boolean expression

$(x + y)(\overline{x}\,\overline{y})$

(A) 0
(B) 1
(C) x
(D) y
(E) Answer not known

72. Name the Address mode which is used by a class of Instructions known as branch Instructions

(A) Relative Addressing
(B) Immediate Addressing
(C) Indexed Addressing
(D) Indirect Addressing
(E) Answer not known

73. Choose the gate name which having the truth table

A	B	X
0	0	1
0	1	0
1	0	0
1	1	1

(A) XOR
(B) NOR
(C) XNOR
(D) NAND
(E) Answer not known

74. Which processor have 32–192 general purpose registers and the average CPI is less than 1.5?

(A) RISC
(B) CISC
(C) Vector
(D) Super scalar
(E) Answer not known

75. Which hazard is otherwise known as branch hazard?

(A) Data Hazard
(B) Structural Hazard
(C) Control Hazard
(D) None of the above
(E) Answer not known

76. Which hazard occurs when the hardware couldnot support all possible combinations of the instructions simultaneously?

(A) Data Hazard
(B) Structural Hazard
(C) Control Hazard
(D) None of the above
(E) Answer not known

77. A certain computer system takes 125 ms to render a certain graphic image, and this time in reduced to 100 ms when a graphics processor card is added to the system. What is the speed up?

(A) 0.75
(B) 1.25
(C) .25
(D) 1.00
(E) Answer not known

78. What type of hazard occurs when an instruction in fetched from the memory, some proceeding instructions may be reading or writings some data onto the memory in the same pipeline cycle?

(A) Control Hazard
(B) Instruction Hazard
(C) Data Hazard
(D) Structural Hazard
(E) Answer not known

79. Overlapped register in RISC processor consists of _____ registers, _____ global registers and _____ windows.

(A) 74, 10, 4
(B) 62, 8, 2
(C) 70, 10, 2
(D) 74, 8, 4
(E) Answer not known

80. How many ADD instructions in VAX?

(A) 20 (B) 21

(C) 25 (D) 30

(E) Answer not known

81. Which manipulators set the format flag *f* in output?

(A) setprecision (int d) (B) setfill (int c)

(C) setiosflags (long f) (D) setw (int w)

(E) Answer not known

82. Identify the invalid statement for virtual function.

(i) Virtual functions must be members of some class.

(ii) They can be static and dynamic members.

(iii) They are accessed by using object pointers.

(iv) A virtual function can be a friend of another class.

(A) (i) (B) (ii)

(C) (iii) (D) (iv)

(E) Answer not known

83. Replace-copy-if( ) function categorize under _____ algorithms in Standard Template Library (STL).

(A) Nonmutating algorithms
(B) Mutating algorithms
(C) Search algorithms
(D) Relational algorithms
(E) Answer not known

84. In base class, some functions has been defined empty, then the functions are called as

(A) empty functions
(B) virtual functions
(C) pure virtual functions
(D) void functions
(E) Answer not known

85. Dynamic binding is associated with

(1) Polymorphism
(2) Inheritance
(3) Encapsulation
(4) Abstraction

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

86. The feature by which object communicate with one another by sending and receiving information is called

(A) Data binding
(B) Message passing
(C) Data transfer
(D) Data reading
(E) Answer not known

87. Argument to a copy constructor

(A) must be const
(B) must not be const
(C) must be integer
(D) must be static
(E) Answer not known

88. Match the following type :

(a)	Friend function	1.	make a program run faster but speed diminishes as the function grows in size
(b)	Static member variable	2.	eliminate and redundant code and extend the use of existing class
(c)	Inline function	3.	can be declared either in the public or private part of a class
(d)	Inheritance	4.	visible only within the class

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

(E) Answer not known

89. The method used to close a file is

(A) file.close( )
(B) close.file( )
(C) close( )
(D) file close( )
(E) Answer not known

90. Choose the correct option for the code snippet below.

```
with open ("file.txt", "rb") as file :
    for line in file :
        print (line)
```

(A) the file is opened for read in binary format but the file is not closed after for loop is over
(B) after the file is used in the for loop, it is automatically closed after the loop is over
(C) compiler error
(D) does not raise error but fails to execute
(E) Answer not known

91. Identify the statements which are not true about Tuples

(1) Tuples can be used as key for a dictionary

(2) Tuples are mutable

(3) Tuples can be converted into list

(4) A tuple can be defined inside another Tuple

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

92. Which operator is also known as string repetition operator?

(A) + (B) *
(C) & (D) ^
(E) Answer not known

93. Two variables of the same structure can be copied the same way as ordinary variables

(A) Yes
(B) Compiler Error
(C) Syntax Error
(D) Garbage values will be the resultant
(E) Answer not known

94. The default C storage class for a variable

(A) int
(B) static
(C) auto
(D) extern
(E) Answer not known

95. The major difference between structure and union is in the

(A) Usage
(B) Assigning members
(C) Defining members
(D) Storage
(E) Answer not known

96. The scope of local variable in C will be for

(A) The entire program
(B) The entire file
(C) The function in which it is declared
(D) All the functions in the program
(E) Answer not known

97. The following statement is equivalent in C programming statement listed below

Char * name [3] = {“New”,
“Australia”,
“India”}

(A) Char name [0] [25];
(B) Char name [3];
(C) Char name [4];
(D) Char name [3] [25];
(E) Answer not known

98. Pick out the formatted I/O function in C language

(A) printf( )
(B) getchar( )
(C) putch( )
(D) gets( )
(E) Answer not known

99. In the C program the equality operator is represented by

(A) : =
(B) .EQ.
(C) =
(D) = =
(E) Answer not known

100. The expression for (;exp2;) is a valid expression in C program justify

(A) The loop will not terminate – Invalid statement in C
(B) Syntax error – Invalid statement in C
(C) Valid statement in C
(D) None of the above
(E) Answer not known

101. _____ is a circuit for emulating the target system that remains independent of a particular targeted system processor, usable during the development phase for most of the target systems that will incorporate a particular microcontroller chip

(A) Compiler
(B) Emulator
(C) Debugger
(D) In-Circuit Emulator (ICE)
(E) Answer not known

102. If the combinations of events from the two tasks operate on the device in the wrong order, may create

(A) Race condition that causes erroneous operation
(B) Shared operation
(C) Read/write operation
(D) Response operation
(E) Answer not known

103. Unified Modeling Language allows us to define _____ inheritance in which a class is derived from more than one base class.

(A) Single inheritance
(B) Multiple inheritance
(C) Double inheritance
(D) Class inheritance
(E) Answer not known

104. A simulator that functionally simulates instructions but does not provide timing information is known as

(A) Instruction – cycle simulator

(B) Accurate – level simulator

(C) Instruction – level simulator

(D) Cycle accurate simulator

(E) Answer not known

105. For the given simple C – loop, consider N = 4

```
for (i = 0 ; i<N; i++){
        a[i] = b[i] * c[i];
    }
```

unroll the given loop twice.

(A) for (i = 0 ; i<4 ; i++) {a[i] = b[i] * c[i];}

(B) for (i = 0 ; i<2 ; i++) {a[i*2] = b[i*2] * c[i*2]; a[(i*2)+1] = b[(i*2)+1] * c[(i*2)+1]; }

(C) for (i = 0 ; i<4 ; i++) {a[i*2] = b[i*2] * c[i*2]; a[(i*2)+1] = b[(i*2)+1] * c[(i*2)+1]; }

(D) for (i = 0 ; i<2 ; i++) {a[i] = b[i] * c[i];}

(E) Answer not known

106. CPU utilization metrics (U) of the multirate system is

(A) U = CPU time for useful work/total available CPU time
(B) U = total available CPU time/CPU time for useful work
(C) U = CPU time/total system time
(D) U = total system time/CPU time
(E) Answer not known

107. Choose the correct option suitable for Rate-Monotonic scheduling

(1) Extracts higher utilization of the CPU
(2) Difficult to diagnose the possibility
(3) Lower CPU utilization
(4) Easier to ensure that all deadlines will be satisfied

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

108. The data structure that holds the state of the process is known as the

(A) Context
(B) Context switching
(C) Record
(D) Kernel
(E) Answer not known

109. Choose the right option

ARM supports the following addressing modes

(i) Register-indirect addressing

(ii) Base-plus-offset addressing

(iii) Auto indexing

(iv) Post indexing

(v) Register addressing

(A) (i), (ii), (iii) and (iv)

(B) (i), (ii), (iii) and (v)

(C) (ii), (iii), (iv) and (v)

(D) (i), (ii), (iii), (iv) and (v)

(E) Answer not known

110. Name the requirements to be satisfied by the architectural descriptions of embedded system design process

(A) Functional and non-functional requirements

(B) Memory and user interface requirements

(C) Behavioral and non-behavioral requirements

(D) Accurate and in-accurate requirements

(E) Answer not known

111. Indicate the selection made in the 8051 instruction; MOV TMOD, #20H

(A) Timer 1, Mode 2

(B) Timer 1, Mode 1

(C) Timer 0, Mode 2

(D) Timer 0, Mode 1

(E) Answer not known

112. Find the value of A and CY flags of 8051 constructions in each of the following

(i) MOV A, # 4FH

ADD B, # B1H

(ii) MOV A, # 9CH

ADD A, # 63 H

(A) (i) A =FF and CY = 1 and (ii) A = 00 and CY = 1

(B) (i) A = FF and CY = 1 and (ii) A = 00 and CY = 0

(C) (i) A = 00 and CY = 1 and (ii) A = FF and CY = 1

(D) (i) A = 00 and CY = 1 and (ii) A = FF and CY = 0

(E) Answer not known

113. Identify the invalid instruction set of 8051 microcontroller

(A) MOV, DPTR, # 25F5 H

(B) MOV R2, #25 H

(C) MOV R2, DPTR

(D) MOV R2, 40 H

(E) Answer not known

114. Which 8051 port need pull-up resistors to function as an I/O port?

(A) P0 (Port – 0)

(B) P1 (Port – 1)

(C) P2 (Port – 2)

(D) P3 (Port – 3)

(E) Answer not known

115. How many byte instructions are the given 8051 instructions?

(i) JN2 HERE

(ii) LJMP

(A) 1 byte and 2 bytes
(B) 2 bytes and 1 byte
(C) 2 bytes and 3 bytes
(D) 3 bytes and 2 bytes
(E) Answer not known

116. How the 8051 flag register is named?

(A) Stack pointer
(B) Directives
(C) Program counter
(D) Program status word register
(E) Answer not known

117. What is the RAM and ROM size of 8051 microcontroller?

(A) 128 bytes and 4 k bytes
(B) 4 k bytes and 128 bytes
(C) 256 bytes and 8 k bytes
(D) 8 k bytes and 256 bytes
(E) Answer not known

118. How many conditional flags are there in 8086 microprocessor?

(A) 6
(B) 7
(C) 8
(D) 10
(E) Answer not known

119. How many RST (Restart) instructions are there in 8085 instruction set?

(A) 8
(B) 4
(C) 2
(D) 6
(E) Answer not known

120. Two 16-bit registers to hold memory address of 8085 architecture are

(i) BC register pair
(ii) Accumulator
(iii) Stack Pointer
(iv) Program counter

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

121. A set of process indicators that lead to long term software process improvements are known as

(A) Project metrics
(B) Process metrics
(C) Product metrics
(D) Program metrics
(E) Answer not known

122. "CMM" stands for

(A) Computer Maintenance Management
(B) Company Maintenance Management
(C) Capability Maturity Model
(D) Capability Management Model
(E) Answer not known

123. Which one executes a system in a manner that demands, resources in abnormal quantity, frequency or volume?

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

124. ———— focuses on the internal processing logic and data structures within the boundaries of a component"

(A) Integration test
(B) Validation test
(C) Verification test
(D) Unit test
(E) Answer not known

125. The internal view of software testing is termed as

(A) White box testing
(B) Black box testing
(C) Basis path testing
(D) Glass box testing and basis path testing
(E) Answer not known

126. The process of executing a program (or) system with the intent of finding errors are known as

(A) software design
(B) software coding
(C) software testing
(D) software maintenance
(E) Answer not known

127. Which one of the following is the best known technique using LOC?

(A) CMM
(B) RMM
(C) COCOMO
(D) SCM
(E) Answer not known

128. Earned value analysis is a measure of

(A) Project
(B) Progress
(C) Cost
(D) Performance
(E) Answer not known

129. _____ is a collection of software engineering milestones, work products and quality assurance filters.

(A) Task set
(B) Task target
(C) Task goal
(D) Task analysis
(E) Answer not known

130. Which model combines the elements of linear and parallel process flows?

(A) Waterfall model
(B) Incremental process model
(C) Spiral model
(D) Prototype model
(E) Answer not known

131. In agile process "XP" stand for

(A) Extreme process
(B) Extreme programming
(C) Extra process
(D) Extra program
(E) Answer not known

132. In software process, "40-20-40 rule" is applicable for

(A) Distribution of effort
(B) Distribution of work place
(C) Distribution of materials
(D) Distribution of project
(E) Answer not known

133. Check list and brain storming are the approaches of

(A) Risk identification
(B) Risk mitigation
(C) Risk planning
(D) Risk monitoring
(E) Answer not known

134. _____ is a transformation that imposed on the design of an entire system.

(A) System style
(B) Data style
(C) Architectural style
(D) Construction style
(E) Answer not known

135. Problem of scope, problem of understanding and problem of volatility are related to

(A) Inception
(B) Elicitation
(C) Elaboration
(D) Negotiation
(E) Answer not known

136. SSA stands for

(A) System Software Analysis
(B) Software System Analysis
(C) Structured System Analysis
(D) Structure Standard Analysis
(E) Answer not known

137. Which one is the primary requirements validation mechanism?

(A) Technical review
(B) Technical interview
(C) Technical inspection
(D) Technical design
(E) Answer not known

138. SRS stands for

(A) System Requirements Specification
(B) Software Requirements Specification
(C) Software Reengineering Specification
(D) System Reengineering Specification
(E) Answer not known

139. Modules be "characterized by design decisions that prevents from all other" is known as

(A) Encapsulation
(B) Information Hiding
(C) Mophing
(D) Modularity
(E) Answer not known

140. The overall structure of the software and the ways that provides conceptual integrity for a system is known as

(A) Software Process
(B) Software Design
(C) Software Architecture
(D) Software Algorithm
(E) Answer not known

141. "CHECK" clauses can be used to check each _____ individually whenever inserted or modified.

(A) row
(B) column
(C) table
(D) all the above
(E) Answer not known

142. Loan Relations

Loan-No	Branch-Name	Amount
L-170	Downtown	3000
L-230	Redwood	4000
L-260	Perryridge	1700

Borrower Relations

Customer-name	Loan-no
Jones	L-170
Smith	L-230
Hayes	L-155

Write the Output :

Loan left outer join borrower on loan.loan number = borrower.loan – number

as lb (loan -number)

(A) L-170, L-230
(B) L-170, L-230, L-260
(C) L-170, L-230, L-260, L-155
(D) L-170, L-230, L-155
(E) Answer not known

143. Which SQL allow the programmers to create, execute and prepare for subsequent use?

(A) Embedded SQL
(B) Dynamic SQL
(C) Static SQL
(D) PL/SQL
(E) Answer not known

144. Which data structure that corresponds to an extended relational algebra expression?

(A) List
(B) Tree
(C) Query tree
(D) Binary Tree
(E) Answer not known

145. Sometimes Project-Join Normal form (PJ NF) otherwise called as

(A) First Normal form
(B) Third Normal form
(C) Fourth Normal form
(D) Fifth Normal form
(E) Answer not known

146. A relation schema R is in ———————— with respect to a set F of functional dependencies if for all functional dependencies in F^+ of the form $\alpha \rightarrow \beta$, where $\alpha \subseteq R$ and $\beta \subseteq R$, atleast one of the following holds.

* $\alpha - \beta$ is a trivial functional dependency (that is, $\beta \subseteq \alpha$)
* α is a super key for schema R

(A) First Normal Form
(B) Second Normal Form
(C) Third Normal Form
(D) Boyce - Codd Normal Form
(E) Answer not known

147. ———————— is any condition that the database must always satisfy

(A) Conditional statements
(B) Check constraint
(C) Assertions
(D) Authorization
(E) Answer not known

148. Database can be modified by

(A) Insertion, rename, deletion
(B) Insertion, deletion, selection
(C) Selection, deletion, update
(D) Insertion, deletion, update
(E) Answer not known

149. An Entity set that has a primary key is termed

(A) Specialization Entity
(B) Aggregation Entity
(C) Strong Entity
(D) Weak Entity
(E) Answer not known

150. A ———————— of a relation is a set of one or more attributes whose values are guaranteed to identify tuples in the relation uniquely.

(A) Candidate key
(B) Super key
(C) Instance
(D) Foreign key
(E) Answer not known

151. Which of the following is not an advantage of DBMS?

(A) Increased data consistency
(B) Reduced data redundancy
(C) Improved data security
(D) Increased data isolation
(E) Answer not known

152. The two models preceded the relational data model was

(A) Entity Relationship model, Network data model
(B) Network data model and hierarchical data model
(C) Hierarchical model and Entity relationship model
(D) Semistructured model and Network model
(E) Answer not known

153. The ———————— allows to combine information from any two relations.

(A) Domain constraint
(B) Primary keys
(C) Unique keys
(D) Cartesian product
(E) Answer not known

154. Match the following RAID Levels

(a)	RAID – 2	1.	Block - interleaved party
(b)	RAID – 3	2.	Block – interleaved distributed party
(c)	RAID – 4	3.	Error correcting codes
(d)	RAID – 5	4.	Bit – interleaved party

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

(E) Answer not known

155. Thomas' write rule is applied for ————————protocol.

(A) Timestamp – Ordering Protocol

(B) Concurrency control protocol

(C) Validation – Based protocol

(D) Optimistic concurrency control protocol

(E) Answer not known

156. Which state is occurred after the transaction has been rolled back and the database has been restored to its state prior to the start of the transaction?

(A) Active

(B) Partially committed

(C) Aborted

(D) Committed

(E) Answer not known

157. Which datastructure is used for dynamic hashing technique?

(A) Stack
(B) Queue
(C) Linked list
(D) Binary Tree
(E) Answer not known

158. Which problem can occur when a new record that is being inserted by some transaction T satisfies a condition that a set of records accessed by another Transaction T1 must satisfy?

(A) Deletion problem
(B) Insertion problem
(C) Phantom problem
(D) Update problem
(E) Answer not known

159. Suppose that two users - for example, two airline reservation agents submit the transactions T_1 and T_2 at approximately the same time. Find how many possible outcomes when no interleaving of operations is permitted.

(A) Many outcomes
(B) 2 outcomes
(C) 3 outcomes
(D) 1 outcome
(E) Answer not known

160. Which failure refer to a list of problems that includes power or air - conditioning failure, fire, theft, sabotage, overwriting disks or tapes by mistake and mounting of a wrong tape by the operator?

(A) System error

(B) Disk failure

(C) Catastrophes

(D) Concurrency control enforcement

(E) Answer not known

161. Weight and profit value of each item is as given below and $w = 20$

$pi = \{30, 21, 18\}$

$wi = \{18, 15, 10\}$

$i = \{1, 2, 3\}$

Compute the maximum optional profits using greedy method

(A) $\sum wi\ xi = 16 \cdot 5$ and $\sum xi\ pi = 26 \cdot 5$

(B) $\sum wi\ xi = 20$ and $\sum xi\ pi = 32 \cdot 8$

(C) $\sum wi\, xi = 20$ and $\sum xi\ pi = 32$

(D) $\sum wi\ xi = 20$ and $\sum xi\, pi = 30$

(E) Answer not known

162. Complexity Analysis of Hamiltonian problem is

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

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

(C) $\frac{(n-1)^{2n}}{2n}$

(D) $\frac{((n-1)\ (n-1)-1)}{2n^2-1}$

(E) Answer not known

163. The time complexity of Strassen's matrix multiplication using divide and conquer method is

(A) $T = \theta\left(n^{\log_2 7}\right)$

(B) $T = \theta\left(n^{2.81}\right)$

(C) Both (A) and (B)

(D) $T = \theta\left(n^2 \log n\right)$

(E) Answer not known

164. Choose the correct method which is to keep a list of all elements that has to the same value using standard library implementations

(A) Separate chaining

(B) Hash with linked list

(C) Linear probing

(D) Hash-sha-256 algorithm

(E) Answer not known

165. Choose which is not correct about Amortized Analysis

(A) Finding average running time per operation over worst case

(B) Assumes worst case input and does not allow random choice

(C) Time can be computers within one execution of algorithm

(D) Not similar to average case analysis

(E) Answer not known

166. Using following Weighted Adjacency matrix and choose the all pair weight adjacency matrix

$$D^{(0)} = \begin{array}{c} \\ 1 \\ 2 \\ 3 \end{array} \begin{array}{c} \begin{array}{ccc} 1 & 2 & 3 \end{array} \\ \begin{pmatrix} 0 & 8 & 5 \\ 2 & 0 & \infty \\ \infty & 1 & 0 \end{pmatrix} \end{array}$$

(A) $\begin{bmatrix} 0 & 6 & 5 \\ 2 & 0 & 7 \\ 3 & 1 & 0 \end{bmatrix}$

(B) $\begin{bmatrix} 0 & 8 & 5 \\ 2 & 0 & 7 \\ 3 & 1 & 0 \end{bmatrix}$

(C) $\begin{bmatrix} 0 & 8 & 5 \\ 2 & 0 & 7 \\ \infty & 1 & 0 \end{bmatrix}$

(D) $\begin{bmatrix} 0 & 8 & 5 \\ 0 & 0 & \infty \\ 3 & 1 & \infty \end{bmatrix}$

(E) Answer not known

167. The function which is used to deleting an element from heap is called

(A) Percolate down
(B) Percolate up
(C) Heapifying
(D) Minmax heap
(E) Answer not known

168. A tree which describes the sorting process by having a vertex represent a key comparison and the branches indicate the result is called

(A) Binary tree
(B) Binary search tree
(C) AVL tree
(D) Decision tree
(E) Answer not known

169. A sorting technique that does not use any intermediate auxiliary memory is called

(A) In place or out place sort
(B) Internal or external sort
(C) Comparison Vs distribution
(D) Computation Vs distribution
(E) Answer not known

170. In which applications trees are risk used?

(A) Set representation
(B) Decision trees
(C) Game trees
(D) Memory management
(E) Answer not known

171. We can obtain the time complexity of ———————— using two methods, like master theorem and substitution method.

(A) Quick sort
(B) Bubble sort
(C) Merge sort
(D) Radix sort
(E) Answer not known

172. The sorting technique that is based on divide-and-conquer approach is

(A) Selection sort
(B) Insertion sort
(C) Quick sort
(D) Merge sort
(E) Answer not known

173. In which tree the height of the left sub tree and the height of the right sub tree differ by not more than one

(A) Red black tree
(B) Splay tree
(C) AVL tree
(D) Expression tree
(E) Answer not known

174. A 10×12 matrix is implemented using array A [10] [12]. If the base address of array is 200 and the word size is 2 then compute the address of the element A [4, 7] in row major order.

Assume that the lower bound of both row and column indices is 1.

(A) 284
(B) 326
(C) 282
(D) 280
(E) Answer not known

175. Check the valid operations on iterators:

(i) itr++ and ++itr → advances the iterator itr to the next location.

(ii) *itr → returns a reference to the object store at iterator.

(iii) itr1! = itr2 → returns true if iterators itr1 and itr2 refer to a different location.

(A) (i) and (ii) (B) (i) and (iii)

(C) (ii) and (iii) (D) All the above

(E) Answer not known

176. Name the date structure for the following snipped code or procedure

```
struct node
{
    int i;
    struct node * NEXT;
    struct node * previous;
    } ;
    typedef struct node NODE;
```

(A) Doubly linked list-node

(B) Single linked list-node

(C) Circular linked list-node

(D) Circular queue linked list-node

(E) Answer not known

177. Which node pointers should be updated if a new node "B" is to be inserted in the middle of "A" and "C" nodes of singly linked list?

(i) NEXT pointer of A and NEXT pointer of C

(ii) NEXT pointer of B and NEXT pointer of C

(iii) NEXT pointer of B

(iv) NEXT pointer of A and NEXT pointer of B

(A) (i) and (ii) (B) (ii)

(C) (iii) and (i) (D) (iv)

(E) Answer not known

178. Identify the correct statement about circular linked list.

(A) It allows complete list traversal starting from any of the node

(B) It allows complete list traversal only if we begin from the first node

(C) Next part of the last node is null

(D) Next part of first node is pointing to null

(E) Answer not known

179. Choose the type of double-ended queue.

(A) Input restricted dequeu

(B) Output restricted deque

(C) Linked list implementation of double ended queue

(D) (A) and (B)

(E) Answer not known

180. If 2, 1, 5, 8 are the stack contents with element 2 being at the top of the stack, then what will be stack contents after following operations.

Push (11),

Pop ( )

Pop ( )

Pop ( )

Push (7)

(A) 11, 2, 1 (B) 8, 11, 7

(C) 7, 5, 8 (D) 5, 8, 7

(E) Answer not known

181. Match it

	List of objects in JavaScript		Purpose
(a)	Math object	1.	To obtain true or false values
(b)	Number object	2.	To obtaining date and time
(c)	Date object	3.	Numberic properties
(d)	Boolean object	4.	Mathematical computations

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

(E) Answer not known

182. _____ separates the content area from the box's border in CSS.

(A) Margin
(B) Border
(C) Padding
(D) Edge
(E) Answer not known

183. Choose the suitable character for the given entity reference : &forall ;

(A) ©
(B) ∀
(C) α
(D) &
(E) Answer not known

184. Event is an _____ that represents a change in the environment.

(A) Handler
(B) Activity
(C) Registration
(D) Internet program
(E) Answer not known

185. A Canvas element is a _____.

(A) White rectangle
(B) Black rectangle
(C) Red rectangle
(D) Green rectangle
(E) Answer not known

186. Dom makes it possible for

(A) Establishing a browser history
(B) Javascript code to communicate with the browser
(C) Inspect the elements
(D) Establishing a communication between panel and web pages
(E) Answer not known

187. Output of the following assignment operators / expressions

let $x = 2$
$x+ = 2$
$x- = 2$
$x* = 6$
$x / = 3$
$x ** = 2$

(A) 6
(B) 16
(C) 17
(D) 12
(E) Answer not known

188. Which of the following represents legal flow control statements in java?

(A) break;
(B) break( );
(C) continue (inner);
(D) exit( );
(E) Answer not known

189. What decides thread priority?

(A) Process
(B) Thread
(C) Thread scheduler
(D) Process scheduler
(E) Answer not known

190. Given the code

string s = new string ("abc");

Which of the following calls are valid?

(A) s.toUppercase( )
(B) s.replace('a', 'A')
(C) s.strim( )
(D) both (A) and (B)
(E) Answer not known

191. What will be the result of the expression 13 and 25?

(A) 38
(B) 25
(C) 9
(D) 12
(E) Answer not known

192. The jdbc API classes are supported by the java package

(A) java.servlet.*
(B) java.awt.*
(C) java.io.*
(D) java.sql.*
(E) Answer not known

193. Which method is used to create a new instance 8 a server in node.js?

(A) http.create instance( )
(B) http. newServer( )
(C) http. createServer( )
(D) http. createServer Instance( )
(E) Answer not known

194. Identify the correct definition of a package

(A) A package is a collection of editing tools
(B) A package is a collection of classes
(C) A package is a collection of classes and interfaces
(D) A package is a collection of interfaces
(E) Answer not known

195. The payload of IPv4 datagram contains

(A) 65,515 bytes of data
(B) 4 gigabytes of data
(C) 65,500 bytes of data
(D) 65,536 bytes of data
(E) Answer not known

196. Which constructor of datagram socket is used to create a datagram socket and binds it with the port number?

(A) Datagramsocket( )

(B) Datagramsocket (int port.net Address address)

(C) Datagramsocket (int port)

(D) Datagramsocket (inetAddress address)

(E) Answer not known

197. The _____ interface enables a servlet to obtain information about a client request.

(A) HttpservletRequest

(B) HttpservletResponse

(C) HttpRequest

(D) HttpResponse

(E) Answer not known

198. Which module in Node.js provides the EventEmitter class?

(A) fs

(B) http

(C) util

(D) events

(E) Answer not known

199. The main purpose of Node.js event loop

(A) Processing synchronous tasks in order

(B) Manage multiple threads of execution

(C) Handling asynchronous tasks without blocking the I/O operations

(D) Both (A) and (B)

(E) Answer not known

200. The _____ interface enables a servlet to read and write the state information that is associated with an HTTP session.

(A) HttpRequest
(B) HttpSession Response
(C) HttpSession
(D) HttpSession Request
(E) Answer not known
