095/23

Question Booklet Alpha Code

A

Total Number of Questions : 100   **Time : 90 Minutes**

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A, B, C** & **D**.

2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.

3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.

4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.

5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.

6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.

7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.

8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.

9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**

10. Each question is provided with four choices **(A), (B), (C)** and **(D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.

11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**

12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.

13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

1. Which of the following special symbol can be used in a C variable name ?
   A) -   B) #   C) _   D) $

2. At a time a function can return
   A) one value   B) two values
   C) three values   D) many values

3. What will be the output of the following C statements ?
   ```
   void main()
   {
   char str1[10] ="hello",str2[10]="hello";
   printf("%d",strcmp(str1,str2));
   }
   ```
   A) 1   B) 0
   C) −1   D) none of these

4. Which of the following operator is used to access structure elements ?
   A) dot(.) operator   B) & operator
   C) * operator   D) none of the above

5. If there is any error while opening a file, fopen() returns
   A) 0   B) 1   C) EOF   D) NULL

6. What will be the result of the following postfix expression evaluation 5 3 4 * 6 / +
   A) 7   B) 5   C) 24   D) 2

7. In a queue data structure new element is inserted at
   A) front end   B) rear end
   C) both A) and B)   D) none of the above

8. Which of the following is a one way list ?
   A) single linked list   B) double linked list
   C) both A) and B)   D) none of the above

9. In a tree a node which does not have any child is called
   A) non terminal node   B) internal node
   C) leaf node   D) sibling node

10. Which data structure is used for backtracking in DFS traversal ?
    A) queue   B) stack
    C) linked list   D) none of the above

A

11. The default visibility label of a class in C++
    A) public
    B) protected
    C) private
    D) none of the above

12. Which of the following operator that cannot be overloaded ?
    A) ( )
    B) [ ]
    C) ->
    D) ? :

13. A derived class with several base class is called
    A) single inheritance
    B) multiple inheritance
    C) multilevel inheritance
    D) hierarchical inheritance

14. In C++ run time polymorphism is achieved using
    A) virtual functions
    B) operator overloading
    C) function overloading
    D) data abstraction

15. How many types of templates are in C++ ?
    A) 1
    B) 3
    C) 4
    D) 2

16. Java compiler translates source code into
    A) object code
    B) byte code
    C) machine code
    D) none of these

17. Which of the following keyword is used to define interfaces in Java ?
    A) interfaces
    B) interfase
    C) interface
    D) Interface

18. AWT in Java stands for
    A) Application Window Toolkit
    B) Abstract Windowing Toolkit
    C) Advanced Window Toolkit
    D) Abstract Window Toolkit

19. Which of the following is the basic class for all SWING GUI components ?
    A) Container
    B) Jcomponent
    C) Component
    D) All of the above

20. Oracle Call Interface (OCI) is a
    A) Type 1 JDBC driver
    B) Type 2 JDBC driver
    C) Type 3 JDBC driver
    D) Type 4 JDBC driver

A

21. Which are the properties of transaction in database ?
    i) Atomicity   ii) Consistency   iii) Isolation   iv) Concurrency
    A) i, ii and iii only
    B) All the above
    C) ii only
    D) ii and iii only

22. Another name of tuple is
    A) Record
    B) Field
    C) File
    D) Relation

23. In an ER diagram, symbol used for an attribute is
    A) Rectangle
    B) Ellipse
    C) Double Rectangle
    D) Diamond

24. In three tier architecture, query processing languages resides in
    A) Application tier
    B) User tier
    C) Database tier
    D) None of these

25. Suppose you are assigned with the task of removing all data in a table "Student" without deleting table definition. Which statement is used ?
    A) DROP TABLE Student
    B) TRUNCATE TABLE Student
    C) UPDATE TABLE Student
    D) All the above

26. A stored program needs to be invoked automatically before a new record is inserted into a table. Then which of the following is more correct ?
    A) Define a row level trigger
    B) Define a statement level trigger
    C) Define a procedure
    D) Define a function

27. A telephone company wishes to give an offer validity extension of 10 more days for all customers with a plan "PLAN197". Then which of the query is more correct ?
    A) MODIFY Customers
          SET ValidPrd = ValidPrd+10
          WHERE Plan = "PLAN197"
    B) ALTER table Customers
          SET ValidPrd = ValidPrd+10
          WHERE Plan = "PLAN197"
    C) SELECT Customers
          SET ValidPrd = ValidPrd+10
          WHERE Plan = "PLAN197"
    D) UPDATE Customers
          SET ValidPrd = ValidPrd+10
          WHERE Plan = "PLAN197"

A

28. Normalization is a method to remove which of the following anomaly ?
    A) Insert anomaly
    B) Deletion anomaly
    C) Update anomaly
    D) All the above

29. Which of the following is a DDL STATEMENT ?
    A) GRANT
    B) COMMIT
    C) ALTER
    D) UPDATE

30. "Shared Memory, Shared disk, Shared nothing" are the three main architectures that have been proposed for
    A) Mobile databases
    B) Parallel databases
    C) OODBMS
    D) Distributed DBMS

31. One of the following is not true in case of CMS
    A) Allow users to place content on a website
    B) Allows website content to be accessible in a single machine only
    C) Allow users to control, manage and structure the content in real-time
    D) Allow users to do updates, deletions and alterations of Web content

32. Identify correct CSS rule to set all <p> elements on the page center-aligned, with a red text color.
    A) p { text-align: center; color: red;}
    B) p { text-align center; color red;}
    C) p { text-align: center; color: red }
    D) p { text-align: center, color: red;}

33. Which is the correct syntax to call an external JavaScript file in the current HTML document ?
    A) <script src="jsfile.js"></script>
    B) <script href=" jsfile.js"></script>
    C) <import src=" jsfile.js"></import>
    D) <script link=" jsfile.js"></script>

34. Statement which is wrong about HTML DOM (Document Object Model) is
    A) W3C (World Wide Web Consortium) standard
    B) A standard for accessing documents
    C) Constructed as a linked list of Objects
    D) When a web page is loaded, the browser creates a Document Object Model of the page

A

35. Write function to delete a cookie named "user"
    A) delcookie("user", "", time()+3600);
    B) delcookie("user", "", time()–3600);
    C) setcookie("user", "", time()+3600);
    D) setcookie("user", "", time()–3600);

36. Which of the following is not an example for container tag ?
    A) <html>   B) <p>   C) <img>   D) <center>

37. All communications between browsers and servers use _____ protocol.
    A) HTTP   B) FTP   C) HTML   D) SMTP

38. Information sent from a form with this method is invisible to others and has no limits on the amount of information to send
    A) GET   B) POST
    C) ECHO()   D) Both A) and B)

39. In PHP which type of array can be used to assign Register Number to Name of student ?
    A) Numeric array   B) Multi dimensional array
    C) Associative array   D) All of these

40. In the HTML < input> tag which type attribute is set in order to accept single-line text input but it masks the character as soon as a user enters it.
    A) TextArea   B) Text   C) Password   D) Reset

41. Which fundamental component of Android is used to receive the notification to the user when Battery is low ?
    A) View   B) Intent
    C) Activities   D) Broadcast Receiver

42. Dalvik Virtual Machine (DVM) is the part of _____ section in the architecture of Android operating system.
    A) Application frame work   B) Linux Kernel
    C) Android Runtime   D) Libraries

43. Which Android SQLite Java Class is used to provides access to the results of a database query ?
    A) SQLiteDatabase   B) SQLiteOpenHelper
    C) Content Values   D) Cursor

A

44. In which directory AndroidManifest.xml layout files are stored ?
   A) /assets   B) /src   C) /res/values   D) /res/layout

45. Which of the following converts Java byte code into Dalvik byte code ?
   A) Dalvik converter
   B) Dex compiler
   C) Mobile Interpretive Compiler (MIC)
   D) Java Virtual Machine

46. Which method is used to launch a new activity or get an existing activity to do something new ?
   A) Context.startActivity()
   B) Context.startService()
   C) Context.sendBroadcast()
   D) All the above

47. You can create a custom view by extending class
   A) android.widget.View
   B) android.widget.LinearLayout
   C) android.view.View
   D) android.content

48. Write a code to send SMS to another AVD with number 9946671122
   A) SmsManager sms=new SmsManager();
      sms.sendTextMessage("9946671122", null, "Have a nice day", null, null);
   B) SmsManager sms=new SmsManager();
      sendSMS("9946671122", null, "Have a nice day", null, null);
   C) SmsManager sms=SmsManager.getDefault();
      sms.sendTextMessage("9946671122", null, "Have a nice day", null, null);
   D) SmsManager sms=SmsManager.getDefault();
      sms.sendTextMessage("Have a nice day", null, "9946671122", null, null);

49. What type of CSS is the following code snippet ?

   <h1 style="color:blue; ">A Blue Heading</h1>
   A) Inline
   B) Internal
   C) External
   D) None of the above

50. What is true about Content Providers ?
   A) They dictate the UI and handle the user interaction to the smart phone screen
   B) They handle background processing associated with an application
   C) They handle communication between Android OS and applications
   D) They handle data and database management issues

51. Convert the hexadecimal number $(B65F)_{16}$ to its equivalent decimal value.
   A) $(42,687)_{10}$
   B) $(36,687)_{10}$
   C) $(46,687)_{10}$
   D) $(32,687)_{10}$

A

52. Simplify the Boolean expressions $\overline{X}YZ + XZ$ to a minimum number of literals.

A) $Z(X + Y)$

B) $\overline{Z}(X + Y)$

C) $X(Z + Y)$

D) $X(\overline{Z} + Y)$

53. Simplify the Boolean functions $F(X, Y, Z) = \Sigma(0, 2, 4, 5, 6)$

A) $Z + X\overline{Y}$

B) $\overline{Z} + X\overline{Y}$

C) $\overline{Z} + XY$

D) $\overline{Z} + \overline{XY}$

54. Write the equivalent Boolean expression for the following logic circuit.

A) $F = A + \overline{BC} + D$

B) $F = \overline{A} + \overline{B} + \overline{C} + \overline{D}$

C) $F = AB\overline{CD}$

D) $F = ABCD$

55. The OR operation can be produced with

A) two NOR gates

B) three NAND gates

C) four NAND gates

D) both answers A) and B)

56. All Boolean expressions can be implemented with

A) NAND gates only or NOR gates only

B) combinations of NAND and NOR gates

C) combinations of AND gates, OR gates, and inverters

D) None of the above

57. Which of the following codes exhibit even parity ?

A) 10011000

B) 01111010

C) 11010111

D) 11010101

58. To enter a byte of data serially into an 8-bit shift register, there must be

A) one clock pulse

B) eight clock pulses

C) two clock pulses

D) four clock pulses

59. A modulus-12 counter must have

A) 4 flip-flops

B) 12 flip-flops

C) 3 flip-flops

D) synchronous clocking

A

60. A 5-bit binary counter has a maximum modulus of
    A) 3   B) 8
    C) 32   D) 16

61. Calculate the average CPI when a program with the instruction mix and the CPI for each instruction type given below is executed on a uniprocessor.

Instruction Type	CPI	Instruction Mix
Arithmetic and logic	1	60%
Load/store with cache hit	2	10%
Branch	4	10%
Memory reference with cache miss	8	10%

    A) 2   B) 3
    C) 3.5   D) 2.5

62. Calculate MIPS rate in case when a benchmark program results in the execution of 2 million instructions on a 380-MHz processor with an average CPI of 2.5.
    A) 120   B) 250
    C) 152   D) 160

63. Calculate the effective CPI for the machine having clock rate of 200 MHz that gives the following measurement for a set of benchmark programs.

Instruction Type	Instruction Count (millions)	Cycles Per Instruction
Arithmetic and logic	10	1
Load/store with cache hit	8	2
Branch	2	4
Others	4	3

    A) 1.22   B) 1.92
    C) 5.24   D) 3.22

64. Consider a 32-bit microprocessor, with a 16-bit external data bus, driven by an 8-MHz input clock. Assume that this microprocessor has a bus cycle whose minimum duration equals four input clock cycles. What is the maximum data transfer rate across the bus that this microprocessor can sustain, in bytes/s ?
    A) 4 Mbytes/sec.   B) 3 Mbytes/sec.
    C) 2 Mbytes/sec.   D) 1.5 Mbytes/sec.

A

65. A computer has a cache, main memory, and a disk used for virtual memory. What is the average time in nanoseconds required to access a referenced word on this system ? Using the case provided in table below :

Location of referenced word	Probability	Total time for access in ns
In cache	0.9	20
Not in cache but in main memory	0.06	80
Not in cache or in main memory	0.04	12000

   A) 251   B) 400.2

   C) 350   D) 502.8

66. Consider a machine with a byte addressable main memory of 2^{16} bytes and block size of 8 bytes. Assume that a direct, mapped cache consisting of 32 lines is used with this machine. How is a 16-bit memory address divided into tag, line number, and byte number ?

   A) (8, 4, 7)   B) (6, 4, 8)

   C) (6, 2, 7)   D) (8, 5, 3)

67. What is the disk capacity of a magnetic disk drive with 8 surfaces, 512 tracks per surface, and 64 sectors per track with sector size 1 KB ?

   A) 512 KB   B) 64 KB

   C) 256 MB   D) 128 MB

68. Consider a 32-bit microprocessor having 32-bit instructions composed of two fields, the first byte contains the opcode and the remainder the immediate operand or an operand address. What is the maximum directly addressable memory capacity (in bytes) ?

   A) 16 MBytes   B) 8 MBytes

   C) 32 MBytes   D) 64 MBytes

69. The number of 3 to 8 line decoders to construct a 9 to 512 line decoder with an enable input and without using any other logic gates are

   A) 56   B) 73

   C) 69   D) 91

70. A given microprocessor has words of 1 byte. What is the smallest and largest integer that can be represented in the Ones complement representations ?

   A) 0; 255   B) −127;127

   C) 0, 99   D) None of the above

A

71. Match the following :

    I) SNMP   a) Host Configuration
    II) NFS   b) Mail Transfer
    III) DHCP   c) Network Management
    IV) POP   d) Name System
                       e) File Sharing

    A) I-c, II-e, III-a, IV-b   B) I-c, II-e, III-b, IV-a
    C) I-d, II-c, III-e, IV-a   D) I-b, II-d, III-a, IV-e

72. Snort is a
    A) Network Operating System   B) Intrusion Detection System
    C) Security Auditing System   D) Encryption System

73. Bandwidth for a signal transmitting at 12Mbps for QPSK is _____. The value of
    d is 0.
    A) 2 MHz   B) 4 MHz   C) 6 MHz   D) 8 MHz

74. In AVR microcontroller, H flag is set to 1 if
    A) there is a carry from D3 to D4
    B) there is a carry from D7
    C) the result of an operation is too large
    D) a carry occurred in arithmetic/logical operation

75. A topology that is responsible for describing the geometric arrangement of
    components that make up the LAN.
    A) Complex   B) Physical   C) Logical   D) Incremental

76. The access control policy in which an entity may be granted access rights that
    allow the entity, by its own volition, to enable another entity to access some
    resources.
    A) Discretionary access control   B) Mandatory access control
    C) Role based access control   D) Reliable access control

77. In 8086 microprocessor, if DS=1111H, SI=0500H, BP=5010H, CX=0000H, the
    address accessed by the instruction MOV CX,[BP+SI] is
    A) 66210H   B) 11121H   C) 51711H   D) 16620H

78. The minimum and maximum frame length of IEEE 802 LAN in bytes
    A) 46 and 1500   B) 32 and 1024
    C) 32 and 1518   D) 64 and 1518

A

79. The ADC of AVR has _____ bit resolution.
    A) 8   B) 10   C) 12   D) 16

80. An organization is granted address block 205.16.37.39/28, n=28. Find the first address, last address and number of addresses in the block.
    A) 205.16.37.32, 205.16.37.47, 16
    B) 205.16.37.39, 205.16.37.47, 64
    C) 205.16.37.39, 205.16.37.255, 32
    D) 205.16.37.32, 205.16.37.255, 16

81. The type of firewall that examines packet data and keeps track of information about TCP connections.
    A) Packet filter   B) Stateful inspection
    C) Proxy   D) Message digest

82. Shell script command to multiply two numbers num1 and num2.
    A) c = $num1 * $num2   B) c= `expr num1 \* num2`
    C) c= `expr $num1 \* $num2`   D) c= `expr num1 * num2`

83. Timer 0 acts as a counter if
    A) the CS02-CS00 are 110 or 111
    B) the CS02-CS00 are 000
    C) the COM00-COM01 are 00
    D) the WGM01 :WGM00 are 00 or 11

84. At the sender side the data given is 1101 1111. If checksum error detection method (segment size=4 bits) is used, then the data to be transmitted becomes
    A) 1 1 0 1 1 1 1 1 1 1 0 1
    B) 1 1 0 1 1 1 1 1 0 0 1 0
    C) 0 0 1 0 1 1 0 1 1 1 1 1
    D) 1 1 0 1 0 0 1 0 1 1 1 1

85. Computer Security triad includes
    A) Confidentiality, Integrity, Authenticity
    B) Confidentiality, Integrity, Availability
    C) Accountability, Authenticity, Availability
    D) Non-repudiation, Accessibility, Integrity

A

86. Multistreaming and multihoming are allowed in _____ Protocol.
    A) TCP   B) UDP
    C) IP   D) SCTP

87. The register is responsible for handling all the external hardware interrupts in AVR
    A) TIMSK   B) GICR
    C) MCUCR   D) IVCE

88. Linux command to display the owner of the processes along with the processes.
    A) ps ax   B) ps ag
    C) ps aux   D) ps dx

89. A computer program that can to run independently and spread a fully functional copy of itself to other hosts on a network, typically through software flaws in the target system.
    A) Worm   B) Virus
    C) Backdoor   D) Spyware

90. Using RSA algorithm, find the value of public key, if the plain text M = 5 and p = 3, q = 11 and d = 7.
    A) (3, 33)   B) (7, 33)   C) (3, 20)   D) (5, 33)

91. LDS instruction loads data from memory location to the specified register and
    A) CS register   B) SS register
    C) DS register   D) ES register

92. HDLC _____ contains system management information.
    A) I Frame   B) S Frame
    C) A Frame   D) U Frame

93. The hashed passwords are stored separately from the user IDs in a file known as
    A) Hashed password file   B) Symbol table file
    C) Shadow password file   D) Authentication file

94. In a fibre optic cable, the signal is propagated along the inner core by
    A) Modulation   B) Dispersion
    C) Refraction   D) Reflection

A

95. AVR Instruction CBI PORTB,1
   A) Clear the PORT B register
   B) Clear the first bit of PORT B register
   C) Set the PORT B register
   D) Set the first bit of PORT B register

96. The nonmaskable interrupt in 8086
   A) INTR   B) Breakpoint
   C) Trap   D) Overflow

97. Attack the ability of a network server to respond to TCP-connection requests by overflowing the tables used to manage such connections.
   A) CON spoofing attack
   B) SYN flooding attack
   C) Masquerade attack
   D) SYN spoofing attack

98. An analog signal has a bit rate of 8000bps and baud rate of 1000baud. How many data elements are carried by each signal element ?
   A) 8 bits/baud   B) 16 bits/baud
   C) 128 bits/baud   D) 256 bits/baud

99. The Bus Interface Unit of 8086 microprocessor prefetches the instruction and store in
   A) Register   B) Memory
   C) Queue   D) Cache

100. The instruction, MOV AX,[BX] is an example of
   A) Register addressing mode
   B) Register direct addressing mode
   C) Register relative addressing mode
   D) Register indirect addressing mode

——————————————

Space for Rough Work