

050/2026

Question Booklet  
Alpha Code

A

Question Booklet  
Serial Number

Total No. of questions : 100

Time : 1 Hour 30 Minutes

Maximum : 100 Marks

**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 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.



**050/2026**

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. The conditional statement  $p \rightarrow q$  is equivalent to which of the following statements?  
(A)  $q \rightarrow p$  (B)  $\neg p \rightarrow \neg q$   
(C)  $\neg q \rightarrow \neg p$  (D)  $\neg q \rightarrow p$
2. Which of the following proposition is a tautology?  
(A)  $p \rightarrow p \wedge q$  (B)  $p \wedge q \rightarrow \neg p \vee \neg q$   
(C)  $p \vee q \rightarrow p$  (D)  $(p \rightarrow q) \vee (q \rightarrow p)$
3. In a proposition statement the phrase “for every” represents which of the following?  
(A) Existential quantifier (B) Universal quantifier  
(C) Predicate (D) Binding variable
4. For any three sets  $A, B$  and  $C$ ,  $(A - B) - C$  is equal to which of the following sets?  
(A)  $A - (B - C)$  (B)  $(A - C) - (B - C)$   
(C)  $A - (B \cap C)$  (D)  $A \cap B \cap C$
5. The relation  $R = \{(1,1), (1,2), (2,1), (2,2), (3,2), (3,3), (4,4)\}$  on  $A = \{1,2,3,4\}$  is  
(A) Reflexive (B) Symmetric  
(C) Anti-symmetric (D) Transitive
6. Which among the following sets is not countable?  
(A) Integers (B) Rational Numbers  
(C) Irrational Numbers (D) Natural Numbers
7. A dice is tossed twice. The probability of getting a number greater than 4 on each toss is :  
(A)  $\frac{1}{9}$  (B)  $\frac{1}{3}$   
(C)  $\frac{1}{2}$  (D)  $\frac{1}{4}$

8. If  $P(A \cap B) = 0$ , then A and B are :
- (A) Independent events (B) Mutually exclusive events  
(C) Both (A) and (B) (D) Neither (A) nor (B)
9. A company does word processing as per the following rates. The rate for services is \$32 per hour plus a \$31.50 one-time charge. The total cost to a customer depends on the number of hours it takes to complete the job. Find the equation that expresses the total cost in terms of the number of hours required to complete the job :
- (A)  $y = 32 + 31.5x$  (B)  $y = 31.5(x - 32)$   
(C)  $y = 31.5 + 32x$  (D)  $y = 32x - 31.5$
10. To measure the overall strength of the model in regression analysis, we use :
- (A) Factor analysis  
(B) Coefficient of partial correlation  
(C) Coefficient of partial regression  
(D) Coefficient of determination
11. Among the following sampling methods, which one is a probability method?
- (A) Judgement (B) Quota  
(C) Simple Random (D) Convenience
12. The chances of defective screws in three boxes A, B and C are  $\frac{1}{5}$ ,  $\frac{1}{6}$  and  $\frac{1}{7}$ , respectively. A box is selected at random and a screw drawn from it at random is found to be defective. Find the probability that it came from box A.
- (A)  $\frac{40}{107}$  (B)  $\frac{41}{107}$   
(C)  $\frac{42}{107}$  (D)  $\frac{43}{107}$
13. Which of the following Boolean expression is equivalent to  $pr + qr's + pqs$ ?
- (A)  $pr + qr's$  (B)  $p + r + qs$   
(C)  $q + sr$  (D) None of the above









32. Dynamic memory allocation is achieved by most data structures by using \_\_\_\_\_ and their binding mainly happens during \_\_\_\_\_.

- (A) Arrays, compile time (B) Pointers, run time  
(C) Trees, compile time (D) Indexes, compile time

33. What will be the output of the following program?

```
#include <stdio.h>
void main ()
{
int i=25;
switch (i)
{
case 10:
printf("I am in 10\n");
case 25:
printf("I am in 25\n");
case 30:
printf("I am in 30\n");
Default:
printf("I am in default\n");
}
}
```

- (A) I am in 25  
(B) I am in default  
(C) I am in 25 I am in 30  
(D) I am in 25 I am in 30 I am in default

34. Which of the following uses inline substitution during compilation?

- (A) Function (B) Macro  
(C) Variable (D) Loops

35. What will be the output of the following program?

```
main ()
{
int num[ ]={14,34,12,74,56,27};
int i;
i=0;
printf("%d %d %d", *(num+i),
i[num],num[i]);
}
```

- (A) 14, 34, 12 (B) 14, 14, 14  
(C) 34, 34, 34 (D) 12, 34, 14

36. What will be the output of the following program?

```
main ()
{
int a=5;
int *b;
int **c;
b=&a;
c=&b;
printf("%d %d %d", a, *b, **c);
}
```

- (A) 5, 5, 5 (B) 5, 65524, 65522  
(C) 65524, 65522, 65520 (D) 5, 5, 65524

37. What will be the output of the following program?

```
#include <stdio.h>
#include <string.h>
void main ()
{
char string1[ ]="Merry";
char string2[ ]="Christmas";
char *d;
int a,b,c;
a=strcmp(string1, "Merry");
b=strcmp(string1, string 2);
c=strcmp(string1, "Merry Boy");
d=streat(string1, string2);
printf("%d %d %d %s", a,b,c,d);
}
```

- (A) 0 10 -32 MerryChristmas (B) 1,5,20, MerryChristmas  
(C) 1,7,20, Christmas (D) 10,20,20, MerryChristmas

38. Which of the following statements are true?

- (A) A linker creates an object program and a compiler creates an EXE file  
(B) A linker creates an EXE file and a compiler creates an object program  
(C) An interpreter creates an EXE file and loader creates object program  
(D) An assembler links a program and an interpreter creates an EXE file

39. In Java, the parameter passing method used is :
- (A) Pass-by-Name
  - (B) Pass-by-Reference
  - (C) Pass-by-Value
  - (D) Pass-by-Reference and Pass-by-Value
40. Which among the following is false about static methods in Java?
- (A) They cannot access instance variables directly
  - (B) They can access instance methods directly
  - (C) They don't belong to instances of a class
  - (D) They cannot use 'this' keyword
41. Which among the following is an important contributing factor for portability of Java?
- (A) Data Encapsulation
  - (B) Java bytecode
  - (C) Inheritance
  - (D) Polymorphism
42. In C++, if no constructor has been defined for a class for which an object is to be created, which among the following is true?
- (A) Compiler will implicitly declare a constructor
  - (B) No object can be created
  - (C) A copy-constructor has to be used
  - (D) Only class methods will be permitted
43. In C++, if a file needs to be opened for output by removing its old contents, the \_\_\_\_\_ mode needs to be used.
- (A) ios::binary
  - (B) ios::in
  - (C) ios::ate
  - (D) ios::trunc
44. In C++, if no relevant catch block is found when an exception is thrown, \_\_\_\_\_ is invoked.
- (A) std::cerr
  - (B) std::cout
  - (C) std::exception
  - (D) std::terminate
45. Garbage collection occurs on a Java applet instance immediately after the \_\_\_\_\_ method finishes.
- (A) destroy()
  - (B) init()
  - (C) start()
  - (D) stop()

46. The 'new' operator in C++ attempts to allocate a block of memory from the :
- (A) Code segment (B) Heap  
(C) Queue (D) Stack
47. A Java class can implement the \_\_\_\_\_ interface when it wants to be informed of changes in observable objects.
- (A) Callable (B) Runnable  
(C) Observer (D) Transferable
48. If we pass a negative number as argument to Math.sqrt() in Java, the result is :
- (A) ArithmeticException (B) NaN  
(C) IllegalAccessException (D) 0
49. Java language supports Multiple Inheritance of :
- (A) Class (B) Implementation  
(C) State (D) Type
50. The maximum size to which an object of Vector class in Java can grow is :
- (A)  $2^{31}-1$  (B)  $2^{32}-1$   
(C)  $2^{63}-1$  (D)  $2^{64}-1$
51. A centralised repository of metadata is referred to as a
- (A) Data Dictionary (B) Data Model  
(C) Journal (D) Schema
52. An attribute in the supertype entity that determines to which subtype the supertype occurrence is related is called a \_\_\_\_\_ attribute.
- (A) Composite (B) Derived  
(C) Discriminator (D) Multi-valued
53. A relation is in \_\_\_\_\_ normal form if it is in BCNF and has no multi-valued dependencies.
- (A) First (B) Second  
(C) Third (D) Fourth
54. The \_\_\_\_\_ constraint mandates that values in a foreign key column must either be present in the primary key that is referenced by the foreign key or they must be null.
- (A) Domain integrity (B) Entity integrity  
(C) Referential integrity (D) Tuple uniqueness

55. If a relation contains repeating groups among attributes, then the relation is :
- (A) In 1NF (B) In 2NF  
(C) In 3NF (D) Not normalized
56. A \_\_\_\_\_ constraint is used to limit the range of values possible in a column.
- (A) Check (B) Domain  
(C) Not Null (D) Unique
57. A/an \_\_\_\_\_ returns all rows that satisfy the join condition and also returns some or all of the rows from one table for which no rows from the other satisfy the join condition.
- (A) Equijoin (B) Inner join  
(C) Natural join (D) Outer join
58. A \_\_\_\_\_ subquery uses values from the outer query, and may be re-executed for each row processed by the outer query.
- (A) Correlated (B) Multiple column  
(C) Multiple row (D) Single row
59. If a \_\_\_\_\_ lock is applied concurrent transactions can still access different rows of the same table.
- (A) Column-level (B) Row-level  
(C) Page-level (D) Table-level
60. In ACID property of a transaction, what does the letter 'I' stand for?
- (A) Idempotence (B) Independence  
(C) Integrity (D) Isolation
61. In SQL procedures, a \_\_\_\_\_ can be viewed as a pointer to one row in a set of rows.
- (A) Buffer (B) Cursor  
(C) Result set (D) Trigger
62. Which among the following operations is not permitted in a join view if it is to be modifiable?
- (A) DELETE (B) GROUP BY  
(C) INSERT (D) UPDATE
63. \_\_\_\_\_ enables updation of a part of the web page without disrupting what the user is doing.
- (A) HttpRequest (B) \$\_GET  
(C) XMLHttpRequest (D) \$\_REQUEST

64. Which among the following is not a client-side script?  
(A) CSS (B) HTML  
(C) PHP (D) VBScript
65. ASP.NET web form inherits from \_\_\_\_\_ class by default.  
(A) System.Web. Form (B) System.Web.GUI.Page  
(C) System.Web.UI.Form (D) System.Web.UI.Page
66. By default, an FTP server will listen for client connections on port  
(A) 21 (B) 23  
(C) 25 (D) 27
67. \_\_\_\_\_ provides a 2-way persistent connection between the client and the server, and for the server to send content to the client without being first requested by the client.  
(A) AJAX (B) JavaScript  
(C) RMI (D) WebSocket
68. The HTML Living Standard is published by :  
(A) IETF (B) NIST  
(C) WHATWG (D) W3C
69. In 3-tier client-server architecture, which tier runs on the client system?  
(A) Application (B) Data  
(C) Logic (D) Presentation
70. \_\_\_\_\_ refers to the use of an external server to implement the dynamic cache of a web server.  
(A) Bastion Host (B) Firewall  
(C) Proxy server (D) Reverse Proxy
71. Which among the following is used to attain session persistence?  
(A) Cache (B) Cookies  
(C) Servlets (D) Threads
72. HTTP \_\_\_\_\_ method requests that the target resource create / update its state with the state defined by the representation enclosed in the request, and is idempotent.  
(A) GET (B) POST  
(C) PUT (D) TRACE

73. Which MIME type is registered for use with Cascading Style Sheets?
- (A) application/css (B) application/text  
(C) text/css (D) text/html
74. HTTP 408 response code refers to \_\_\_\_\_.
- (A) Forbidden (B) Request Timeout  
(C) Service Unavailable (D) Unauthorized
75. What is cybersquatting?
- (A) Gaining unauthorized access to a company's web server to steal data  
(B) The practice of buying expired domain names to redirect traffic to a personal blog  
(C) Sending fraudulent emails that appear to come from a reputable domain  
(D) Practice of registering or using an Internet domain name with the intent to profit from the goodwill of a trademark belonging to someone else
76. In an HTTP response message, the status code 404 indicates :
- (A) Bad Request (B) Not found  
(C) Forbidden (D) Internal Server Error
77. Which of the following statements are correct regarding Routing Information protocol (RIP)?
- (A) It uses UDP as the transport layer protocol  
(B) It identifies a network as unreachable when the hop count reaches 16  
(C) Both (A) and (B)  
(D) Only (B)
78. Which of the following describes the correct order of function calls made by a TCP server before it can start communicating with a client?
- (A) socket(), bind(), listen(), accept()  
(B) socket(), listen(), bind(), accept()  
(C) socket(), bind(), connect(), accept()  
(D) socket(), listen(), connect(), accept()
79. What is the primary format used by SOAP for exchanging information?
- (A) JSON (B) HTML  
(C) XML (D) YAML

80. Which of the following statement(s) is/are true regarding HTTPS?
- (i) HTTPS is HTTP used over SSL
  - (ii) It uses port number 443
  - (iii) It uses port number 80.
- (A) Only (ii) (B) Only (i) and (ii)  
(C) Only (i) and (iii) (D) All of the above (i), (ii), and (iii)
81. Which one of the following is not a random access protocol?
- (A) ALOHA (B) CSMA  
(C) TDM (D) CSMA/CD
82. IEEE 802.11 tries to avoid collisions using the protocol :
- (A) CSMA (B) CSMA/CA  
(C) CSMA/CD (D) Slotted ALOHA
83. Which of the following best describes the primary function of SMTP in the email ecosystem?
- (A) It is used by clients to download messages from a server  
(B) It operates primarily over UDP port 25  
(C) It is a "Push" protocol used for transferring mail between servers  
(D) It was designed from the start with built-in encryption for all messages
84. \_\_\_\_\_ is an XML-based, platform-independent standard for publishing and locating web services within a distributed registry.
- (A) UDDI (B) DNS  
(C) Whois (D) SOAP
85. The port number used by SSH is :
- (A) 22 (B) 25  
(C) 21 (D) 20
86. In RMI architecture, which component acts as a gateway for the client, intercepting the method call and communicating with the remote server?
- (A) Skeleton (B) Stub  
(C) RMI Registry (D) Remote Reference Layer
87. How many identical rounds of transformation does the IDEA algorithm perform on the plaintext?
- (A) 16 rounds (B) 12 rounds  
(C) 8 rounds (D) 10 rounds

88. \_\_\_\_\_ is not an approach to congestion control.
- (A) Admission control (B) Resource provisioning  
(C) RED (D) Bufferbloat
89. Which model is most suitable when requirements are unclear and evolve frequently?
- (A) Waterfall (B) V-Model  
(C) Agile (D) Spiral (strictly linear)
90. Assertion (A) : Waterfall model discourages revisiting previous phases.  
Reason (R): It follows a strict sequential flow.
- (A) Both (A) and (R) are true and (R) explains (A)  
(B) Both (A) and (R) are true but (R) does not explain (A)  
(C) (A) is true, (R) is false  
(D) (A) is false, (R) is true
91. Which design principle reduces interdependence between modules?
- (A) High cohesion (B) Low coupling  
(C) Encapsulation (D) Abstraction
92. A system with high cohesion and low coupling is likely to :
- (A) Be difficult to maintain (B) Have poor performance  
(C) Be modular and maintainable (D) Require more testing
93. Validation ensures :
- (A) Code follows syntax rules (B) System meets user needs  
(C) Design is optimal (D) System is secure
94. Software evolution is primarily driven by
- (A) Compiler changes  
(B) User requirements and environment changes  
(C) Hardware failures  
(D) Coding errors

- 95.** Technical feasibility evaluates :
- (A) Cost-benefit ratio
  - (B) Legal compliance
  - (C) Availability of technology and expertise
  - (D) Market demand
- 96.** Which technique is best for discovering tacit user needs?
- (A) Questionnaires
  - (B) Observation
  - (C) Documentation review
  - (D) Prototyping only
- 97.** Requirement traceability helps in :
- (A) Code optimization
  - (B) Linking requirements to design and testing
  - (C) Debugging runtime errors
  - (D) UI design
- 98.** Match the model with its purpose:
- | Model Type            | Purpose               |
|-----------------------|-----------------------|
| 1. Data Model         | (A) Interaction flow  |
| 2. Behavior           | (B) Data structure    |
| 3. Context            | (C) System boundary   |
| (A) 1-(B)-2-(A)-3-(C) | (B) 1-(A)-2-(B)-3-(C) |
| (C) 1-(C)-2-(A)-3-(B) | (D) 1-(B)-2-(C)-3-(A) |
- 99.** Refactoring is :
- (A) Adding new features
  - (B) Improving code structure without changing behavior
  - (C) Fixing bugs only
  - (D) Removing requirements
- 100.** Safety-critical systems prioritize :
- (A) Performance over correctness
  - (B) Cost reduction
  - (C) Reliability and safety
  - (D) UI design
-

**SPACE FOR ROUGH WORK**

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