

Roll No.-----

<b>Paper Code</b>		
<b>5</b>	<b>0</b>	<b>5</b>
(To be filled in the OMR Sheet)		

प्रश्नपुस्तिका क्रमांक  
Question Booklet No.

O.M.R. Serial No.

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प्रश्नपुस्तिका सीरीज  
Question Booklet Series

**A**

**M.Sc (Electronics) First Semester,  
Examination, February/March-2022  
ELC-103(N)**

**C++ Programming and Data Structure**

**Time : 1:30 Hours**

**Maximum Marks-100**

जब तक कहा न जाय, इस प्रश्नपुस्तिका को न खोलें

- निर्देश : —
1. परीक्षार्थी अपने अनुक्रमांक, विषय एवं प्रश्नपुस्तिका की सीरीज का विवरण यथास्थान सही— सही भरें, अन्यथा मूल्यांकन में किसी भी प्रकार की विसंगति की दशा में उसकी जिम्मेदारी स्वयं परीक्षार्थी की होगी।
  2. इस प्रश्नपुस्तिका में 100 प्रश्न हैं, जिनमें से केवल 75 प्रश्नों के उत्तर परीक्षार्थियों द्वारा दिये जाने हैं। प्रत्येक प्रश्न के चार वैकल्पिक उत्तर प्रश्न के नीचे दिये गये हैं। इन चारों में से केवल एक ही उत्तर सही है। जिस उत्तर को आप सही या सबसे उचित समझते हैं, अपने उत्तर पत्रक (O.M.R. ANSWER SHEET) में उसके अक्षर वाले वृत्त को काले या नीले बाल प्वाइंट पेन से पूरा भर दें। यदि किसी परीक्षार्थी द्वारा निर्धारित प्रश्नों से अधिक प्रश्नों के उत्तर दिये जाते हैं तो उसके द्वारा हल किये गये प्रथमतः यथा निर्दिष्ट प्रश्नोत्तरों का ही मूल्यांकन किया जायेगा।
  3. प्रत्येक प्रश्न के अंक समान हैं। आप के जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।
  4. सभी उत्तर केवल ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर ही दिये जाने हैं। उत्तर पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।
  5. ओ०एम०आर० उत्तर पत्रक (O.M.R. ANSWER SHEET) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाय।
  6. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी प्रश्नपुस्तिका बुकलेट एवं ओ०एम०आर० शीट पृथक—पृथक उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें।
  7. निगेटिव मार्किंग नहीं है।

महत्वपूर्ण : —

प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्ष निरीक्षक को दिखाकर उसी सीरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।



1. C++ was developed by\_\_\_\_\_.  
(A) Thomas Kushz  
(B) John Kemney  
(C) Bjarne Stroutstrup  
(D) James Goling
2. Which one of the following is a keyword?  
(A) Size  
(B) Key  
(C) Jump  
(D) Switch
3. \_\_\_\_\_ is the smallest individual unit in a program.  
(A) Variable  
(B) Control  
(C) Character  
(D) Token
4. What is a constant that contains a single character enclosed within single quotes?  
(A) Character  
(B) Numeric  
(C) Fixed  
(D) Floating point
5. The modulus operator uses \_\_\_\_\_ character.  
(A) +  
(B) \*  
(C) /  
(D) %

6. Every variable should be separated by\_\_\_\_\_ separator.
- (A) Dot
  - (B) Colon
  - (C) Comma
  - (D) Semicolon
7. Auto, static, extern and register are called as\_\_\_\_\_.
- (A) Static
  - (B) Register
  - (C) Auto
  - (D) Storage specifier
8. How many storage specifies are there in a C++?
- (A) 2
  - (B) 3
  - (C) 4
  - (D) 5
9. Signed, unsigned, long and short are some of the \_\_\_\_\_.
- (A) Void
  - (B) Data
  - (C) Derived data
  - (D) Modifiers
10. Logical AND (&&) and Logical OR (||)are \_\_\_\_\_ operators.
- (A) Logical
  - (B) Equality
  - (C) Class member
  - (D) Comma

11. \_\_\_\_\_ operators have lower precedence to relational and arithmetic operators.
- (A) Conditional
  - (B) Boolean
  - (C) Logical
  - (D) Relational
12. How many C++ data types are broadly classified?
- (A) 2
  - (B) 3
  - (C) 4
  - (D) 5
13. Float and double are related to \_\_\_\_\_ data type.
- (A) Void
  - (B) Floating
  - (C) Fixed
  - (D) Integral
14. Variable names must begin with\_\_\_\_\_.
- (A) #
  - (B) \$
  - (C) Number
  - (D) Letter
15. Integer values are stored in \_\_\_\_\_ bit format in binary form.
- (A) 8
  - (B) 16
  - (C) 32
  - (D) 64

16. Addressing is done using \_\_\_\_\_ number system.
- (A) Decimal
  - (B) Hexadecimal
  - (C) Octal
  - (D) Binary
17. \_\_\_\_\_ Operator requires two operands.
- (A) Logical
  - (B) Binary
  - (C) Unary
  - (D) Ternary
18. Auto variables get undefined values known as \_\_\_\_\_.
- (A) Garbage
  - (B) Auto
  - (C) Register
  - (D) Static
19. \_\_\_\_\_ storage class variables are defined in another program.
- (A) Register
  - (B) Auto
  - (C) Extern
  - (D) Static
20. \_\_\_\_\_ Type is used to declare a generic pointer in C++.
- (A) Int
  - (B) Void
  - (C) Static
  - (D) Float

21. Built in Data type is also called as \_\_\_\_\_ data type.
- (A) Fundamental
  - (B) Secondary
  - (C) Void
  - (D) Integer
22. What is the length of double data type?
- (A) 8
  - (B) 16
  - (C) 32
  - (D) 64
23. Which operator requires three operands?
- (A) Unary
  - (B) Binary
  - (C) Ternary
  - (D) Bitwise
24. What are bitwise operators?
- (A) &
  - (B) !
  - (C) ^
  - (D) All (A, B, and C)
25. The constant that should not have fractional part is \_\_\_\_\_.
- (A) Float
  - (B) Double
  - (C) Integer
  - (D) Exponent

26. What is the other name for variable?
- (A) While
  - (B) Visual
  - (C) Identifier
  - (D) Constant
27. \_\_\_\_\_ constant is a signed real number.
- (A) Char
  - (B) String
  - (C) Integer
  - (D) Floating point
28. How many operators are classified in C++?
- (A) 11
  - (B) 13
  - (C) 14
  - (D) 15
29. \_\_\_\_\_ is the C increment Operator in C++.
- (A) ++
  - (B) +\*
  - (C) \*+
  - (D) - -
30. \_\_\_\_\_ is a sequence of character surrounded by double quotes.
- (A) Constant
  - (B) Numeric
  - (C) Character
  - (D) String literal



31. How many fundamental data types are there in C++?
- (A) 1
  - (B) 2
  - (C) 3
  - (D) 4
32. \_\_\_\_\_ is an operator which returns the memory size requirements in terms of bytes.
- (A) Double
  - (B) Size
  - (C) Size of
  - (D) Long
33. What are shift operator?
- (A) <<
  - (B) >>
  - (C) >
  - (D) Both (A) and (B)
34. \_\_\_\_\_ class is another qualifier that can be added to a variable declaration.
- (A) Register
  - (B) Static
  - (C) Sub
  - (D) Storage
35. \_\_\_\_\_ storage class global variable known to all functions in the current program.
- (A) Register
  - (B) Extern
  - (C) Static
  - (D) Auto

36. The address number starts at \_\_\_\_\_.  
(A) 1  
(B) 2  
(C) 3  
(D) Null
37. \_\_\_\_\_ are the kind of data that variables hold in a programming language.  
(A) Conditional type  
(B) Constant type  
(C) Variable type  
(D) Data types
38. The operands and the operators are grouped in a specific logical way of evaluation is called \_\_\_\_\_.  
(A) Assignment  
(B) Association  
(C) Arithmetic  
(D) Class
39. \_\_\_\_\_ data type to indicate the function does not return a value.  
(A) Static  
(B) Main  
(C) Public  
(D) Void
40. \_\_\_\_\_ type is further divided into int and char.  
(A) Float  
(B) Int  
(C) Char  
(D) Integral

41. The enum, unsigned int, short int and int data type's uses \_\_\_\_\_ bits.
- (A) 8
  - (B) 16
  - (C) 32
  - (D) 64
42. Which of the following are good reasons to use an object oriented language?
- (A) An object oriented program can be taught to correct its own errors
  - (B) Program statements are simpler than in procedural language
  - (C) We can define our own data types
  - (D) None of these
43. In a class specified, data or functions and designated private are accessible:
- (A) Only to public members of class
  - (B) Only if you know the password
  - (C) To any function in the program
  - (D) To member functions of that class
44. When a language has the capability to produce new data types, it is called:
- (A) Extensible
  - (B) Encapsulated
  - (C) Reprehensible
  - (D) None of these
45. Keyword typedef is used to declare:
- (A) A synonym for an existing type
  - (B) Absence of a type
  - (C) Objects that can be modified outside of a program control
  - (D) A member function that is defined in a subclass

46. In C++ programming language, to write data that contains variables of type float to an object of type ofstream, which of the following should be used?
- (A) Put ( )
  - (B) Seekg ( )
  - (C) Write ( )
  - (D) Insertion operator
47. \_\_\_\_\_ variable of the same data type can be declared in a single declaration statement.
- (A) Two
  - (B) Three
  - (C) Only one
  - (D) More than one
48. The special characters like tab, backspace, line feed, null, back slash are called \_\_\_\_\_ character constant:
- (A) Floating
  - (B) String
  - (C) Graphic
  - (D) Non-graphic
49. What type of integer starts with 0X?
- (A) Decimal
  - (B) Binary
  - (C) Hexadecimal
  - (D) Octal
50. The body of function contains\_\_\_\_\_.
- (A) Return statement declaration part
  - (B) A variable
  - (C) Processing part
  - (D) All the above

51. Where a condition is checked to see whether to do one or more iteration is:
- (A) Definite iteration
  - (B) Sequencing
  - (C) Indefinite iteration
  - (D) None of these
52. Which one is the valid real constant?
- (A) 85.46
  - (B) 85
  - (C) 0.85
  - (D) Both (A) and (C)
53. \_\_\_\_\_ variables are sensitive to the data type they point to.
- (A) Char
  - (B) Pointer
  - (C) Integer
  - (D) Float
54. For example class boy, \_\_\_\_\_ is user defined data type of class.
- (A) Class
  - (B) Type
  - (C) Boy
  - (D) User
55. When  $a=6$ ,  $c=++a$  what will be the value of  $c$ ?
- (A) 6
  - (B) 7
  - (C) 8
  - (D) 9

56. When  $a=6$  and  $c=a++$  what is the value of  $c$ ?
- (A) 6
  - (B) 7
  - (C) 8
  - (D) 9
57. The statement `int A; b;` is invalid because \_\_\_\_\_.
- (A) Variable should be separated by Comma
  - (B) Capital A is not allowed
  - (C) Only one variable should be given
  - (D) All of these
58. What is a file?
- (A) A file is a selection of main storage used to store data.
  - (B) A file is another name for floppy disk.
  - (C) A file is a part of a program that is used to describe what the program should do.
  - (D) A file is a collection of information that has been given a name and its stored in secondary memory.
59. \_\_\_\_\_ literals are treated as array of characters.
- (A) Graphic
  - (B) Character
  - (C) String
  - (D) Non-graphic
60. Which one holds the values or constants in memory boxes?
- (A) Variable
  - (B) While
  - (C) Go to
  - (D) Switch

61. The basic types are collectively called as\_\_\_\_\_.
- (A) Looping
  - (B) Tokens
  - (C) Expression
  - (D) Variables
62. \_\_\_\_\_ are data items whose value cannot be changed.
- (A) Class
  - (B) Return
  - (C) Constants
  - (D) Variable
63. Every variable will be referred by its \_\_\_\_\_.
- (A) Data
  - (B) Int
  - (C) Name
  - (D) Address
64. Which storage class defines local variable known to the block in which they are defined?
- (A) Register
  - (B) Auto
  - (C) Extern
  - (D) Static
65. Allows users to define the user defined data type identifier.
- (A) Class
  - (B) Data
  - (C) Identifier
  - (D) Type definition

66. What is the length of long double data type?
- (A) 8
  - (B) 16
  - (C) 32
  - (D) 80
67. The names beginning with an underscore are reserved for \_\_\_\_\_ variable.
- (A) Global
  - (B) Local
  - (C) Internal system
  - (D) External system
68. Which punctuator is used to group a set of C++ statements?
- (A) {}
  - (B) []
  - (C) ()
  - (D) /
69. \_\_\_\_\_ refers to the process of changing the data type of the value stored in a variable.
- (A) Type char
  - (B) Type int
  - (C) Type float
  - (D) Type cast
70. \_\_\_\_\_ data types are structure, union, class and enumeration.
- (A) Derived
  - (B) Integer
  - (C) Built-in
  - (D) User defined



71. Which operator is used to compare numerical values?
- (A) Relational
  - (B) Conditional
  - (C) Assignment
  - (D) Arithmetic
72. \_\_\_\_\_ allocates memory, based on the data type of the variable.
- (A) Interpreter
  - (B) Link
  - (C) Converter
  - (D) Compiler
73. Redirection redirects:
- (A) Screen from a device to a stream
  - (B) A device from the screen to a file
  - (C) A stream from a file to the screen
  - (D) A file from a device to a stream
74. memorizing the new items used in C++ is:
- (A) Critically important
  - (B) Completely irrelevant
  - (C) The key to wealth and success
  - (D) Something you can return to later
75. The scope resolution operator usually:
- (A) Providing a useful conceptual frame work
  - (B) Specifies a particular class
  - (C) Tells what base class is derived form
  - (D) Limits the visibility of variables to a certain function

76. An enumerated data type brings together a group of:
- (A) Constant values, integers with user defined names
  - (B) Related data type
  - (C) Items of different data type
  - (D) All of these
77. A variable defined within a block is visible:
- (A) From the point of definition on ward in the block
  - (B) From the point of definition on ward in the function
  - (C) From the point of definition on ward in the program
  - (D) Throughout the function
78. The library function `exit ()` causes an exit from:
- (A) The program in which it occurs
  - (B) The function in which it occurs
  - (C) The block in which it occurs
  - (D) The loop in which it occurs
79. The dot operator connects which of the following two entities?
- (A) Class object and member of that class
  - (B) Class and member of that class
  - (C) Class object and a class
  - (D) Class member and class object
80. A static function:
- (A) Should be called when an object is destroyed
  - (B) Can be called using the class name and function
  - (C) Is closely connected with an individual object of a class
  - (D) Is used when a dummy object must be created

81. The function `bad( )` is declared in the header file:
- (A) `<iostream.h>`
  - (B) `<stdio.h>`
  - (C) `<math.h>`
  - (D) `<stdlib.h>`
82. In C++, a function contained within a class is called:
- (A) A method
  - (B) A class function
  - (C) Member function
  - (D) None of these
83. A function argument is a:
- (A) Value sent to function by the calling program
  - (B) Value returned by the function to the calling program
  - (C) Variable in the function that receives a value from the calling program
  - (D) Way that functions resist accepting the calling program values
84. The `break` statement causes an exit:
- (A) From the innermost loop or switch
  - (B) Only from the innermost switch
  - (C) Only from the innermost loop
  - (D) From all loops and switches
85. Elements double array `[7]` is which element of the array?
- (A) Sixth
  - (B) Seventh
  - (C) Eighth
  - (D) Impossible

86. In C++, a structure brings together a group of:
- (A) Items of the same data type
  - (B) Integers with user-defined names
  - (C) Related data items, variables
  - (D) All of these
87. In C++, which of the following can legitimately be passed to a function?
- (A) A constant
  - (B) A variable
  - (C) A structure
  - (D) All of these
88. In a linked list:
- (A) Each link contains data or a pointer to data
  - (B) Links are stored in an array
  - (C) A array of pointers point to the link
  - (D) Each link contains a pointer to the next link
89. The public files in a class library usually contain:
- (A) Variable definition
  - (B) Class declarations
  - (C) Constant definitions
  - (D) Member function definitions
90. The member function can always access the data in:
- (A) Any object of the class of which it is a member
  - (B) The public part of its class
  - (C) The class of which it is member
  - (D) The object of which is a member

91. In stock, the data item placed on the stack first is:
- (A) Given as index zero
  - (B) Not given as index number
  - (C) The first data item to be removed
  - (D) The last data item to be removed
92. Braking a program into several files is desirable because:
- (A) A program can be divided functionally
  - (B) Each programmer can work on a separate file.
  - (C) Some files don't need to be recompiled each time
  - (D) Files can be marketed in object form
93. Turbo C++ library function can be used:
- (A) Draw lines and circles
  - (B) Write text in variety of fonts and sizes
  - (C) Colour any closed figure
  - (D) All of these
94. Which of the following user-defined header file extension used in c++?
- (A) hg
  - (B) cpp
  - (C) h
  - (D) hf
95. A virtual base class is useful when:
- (A) It makes sense to use a base class is ambiguous
  - (B) Identification of a function in a base class is ambiguous
  - (C) There are multiple paths form one derived class to another
  - (D) Different functions in base and derived classes have the same name

96. The keyword void is used to declare:
- (A) Objects that can be modified outside of program control
  - (B) A synonym for an existing type
  - (C) A member function that is defined in a subclass
  - (D) Absence of a type
97. Virtual functions allow to:
- (A) Use same function call to execute member function of objects from different classes
  - (B) Group objects of different classes so they can all be assessed by the same function code
  - (C) Create functions that have no body
  - (D) Create an array of type pointer to base calls that can hold pointers to derived classes
98. In new operator:
- (A) Each link contains data or a pointer to data
  - (B) Each link contains a pointer to the next link
  - (C) Links are stored in an array
  - (D) An array of pointers point to the links
99. Classes are useful because they:
- (A) Can closely model objects in the real world
  - (B) Bring together all aspects of an entity in one place
  - (C) Permit data to be hidden from other classes
  - (D) Are removed from memory when not in use
100. Copy constructor is invoked when a/an:
- (A) Argument is passed by value
  - (B) Argument is passed by reference
  - (C) Function returns for reference
  - (D) Function returns by value

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## **Rough Work / रफ कार्य**

**DO NOT OPEN THE QUESTION BOOKLET UNTIL ASKED TO DO SO**

1. Examinee should enter his / her roll number, subject and Question Booklet Series correctly in the O.M.R. sheet, the examinee will be responsible for the error he / she has made.
2. **This Question Booklet contains 100 questions, out of which only 75 Question are to be Answered by the examinee. Every question has 4 options and only one of them is correct. The answer which seems correct to you, darken that option number in your Answer Booklet (O.M.R ANSWER SHEET) completely with black or blue ball point pen. If any examinee will mark more than one answer of a particular question, then the first most option will be considered valid.**
3. Every question has same marks. Every question you attempt correctly, marks will be given according to that.
4. Every answer should be marked only on Answer Booklet (O.M.R ANSWER SHEET). Answer marked anywhere else other than the determined place will not be considered valid.
5. Please read all the instructions carefully before attempting anything on Answer Booklet (O.M.R ANSWER SHEET).
6. After completion of examination please hand over the Answer Booklet (O.M.R ANSWER SHEET) to the Examiner before leaving the examination room.
7. There is no negative marking.

**Note:** On opening the question booklet, first check that all the pages of the question booklet are printed properly in case there is an issue please ask the examiner to change the booklet of same series and get another one.