

SECTION-A

खण्ड-अ

Marks : 50

Time : 1½ Hours

Candidates are required to first answer the Section-A (Multiple Choice Questions) by marking correct choice on OMR Sheet in prescribed time. All questions are compulsory and carry equal marks. There is no negative marking for wrong answers.

सर्वप्रथम खण्ड-अ के सभी वस्तुनिष्ठ प्रश्नों के उत्तर ओ.एम.आर. शीट में परीक्षार्थियों को निश्चित समय में देने हैं। सभी प्रश्न अनिवार्य एवं समान अंक के हैं। गलत उत्तर का ऋणात्मक मूल्यांकन नहीं किया जाएगा।

UNIT-I

1. The process of building new classes from existing one is called
  - (A) Polymorphism
  - (B) Structure
  - (C) Inheritance
  - (D) Cascading
2. Within a switch statement
  - (A) continue can be used but break cannot be used
  - (B) continue cannot be used but break can be used
  - (C) Both continue and break can be used
  - (D) Neither continue nor break can be used
3. The new operator
  - (A) returns a pointer to the variable
  - (B) creates a variable called new
  - (C) obtains memory for a new variable
  - (D) tells how much memory is available
4. A library function exit() causes an exit from
  - (A) the loop in which it occurs
  - (B) the block in which it occurs
  - (C) the function in which it occurs
  - (D) the program in which it occurs

5. A class defined within another class is
- (A) Nested class
  - (B) Inheritance
  - (C) Containment
  - (D) Encapsulation
6. The major goal of inheritance in C++ is
- (A) to facilitate the conversion of data types
  - (B) to help modular programming
  - (C) to extend the capabilities of a class
  - (D) to hide the details of base class
7. A white space is
- (A) blank space
  - (B) new line
  - (C) tab
  - (D) All the above
8. Which can be passed as an argument to a function?
- (A) Constant
  - (B) Expression
  - (C) Another function
  - (D) All the above
9. In C++, the range of signed integer type variable is
- (A) 0 to  $2^{16}$
  - (B)  $-2^{15}$  to  $2^{15}-1$
  - (C)  $-2^7$  to  $2^7-1$
  - (D) 0 to  $2^8$
10. Which of the following is a concept of OOPs?
- (A) Encapsulation
  - (B) Inheritance
  - (C) Polymorphism
  - (D) All the above
- UNIT-II**
11. Which of these keywords are access specifiers?
- (A) Near and far
  - (B) Opened and closed
  - (C) Private and public
  - (D) None of these
12. A suitable place to store class declaration is
- (A) Their own header files
  - (B) Auxiliary .CPP file
  - (C) Floppy diskettes
  - (D) None of these

13. You can use C++ as a procedural, as well as an object-oriented language.
- (A) True
  - (B) False
  - (C) Cannot say
  - (D) None of these.
14. Adding a derived class to a base class requires fundamental changes to the base class.
- (A) True
  - (B) False
  - (C) Cannot say
  - (D) None of these.
15. To expose a data member to the program, you must declare the data member in the ..... section of the class.
- (A) Common
  - (B) Exposed
  - (C) Public
  - (D) User
16. A function that changes the state of the cout objects is called
- (A) Member
  - (B) Adjuster
  - (C) Manipulator
  - (D) Operator
17. When the compiler cannot differentiate between two overloaded constructors, they are called
- (A) Overloaded
  - (B) Destructed
  - (C) Ambiguous
  - (D) Dubios
18. Which type of statement does not occur in Computer programs?
- (A) Sequence
  - (B) Loop
  - (C) Denial
  - (D) Selection
19. To be called object-oriented, a programming language must allow
- (A) Function that return only a single value
  - (B) # include files
  - (C) Inheritance
  - (D) All the above
20. A function that returns no values to the program that calls it is
- (A) not allowed in C++
  - (B) type void
  - (C) type empty
  - (D) type barren

UNIT-III

21. Header files often have the file extension
- (A) .h
  - (B) .he
  - (C) .hea
  - (D) .head
22. When a child class function is called, the compiler looks first for a matching function name in the
- (A) class of the object using the function name
  - (B) immediate ancestor class
  - (C) base class
  - (D) descendant class
23. A function that is called automatically each time an object is destroyed is a
- (A) Constructor
  - (B) Destructor
  - (C) Destroyer
  - (D) Terminator
24. When you pass a variable ....., C++ passes only the contents of the variable to the receiving function.
- (A) by reference
  - (B) by value
  - (C) globally
  - (D) locally

25. The best form of coupling is
- (A) complete
  - (B) tight
  - (C) loose
  - (D) free
26. Overloaded functions are required to
- (A) have the same return type
  - (B) have the same number of parameters
  - (C) perform the same basic functions
  - (D) None of the above
27. Sending a copy of data to a program module is called
- (A) passing a value
  - (B) making a reference
  - (C) recursion
  - (D) setting a condition
28. A base class may also be called a
- (A) child class
  - (B) subclass
  - (C) derived class
  - (D) parent class

29. The ..... mode tells C++ to open a file for input.

- (A) add :: ios
- (B) in :: file
- (C) ios :: app
- (D) ios :: in

30. Which of the following are never inherited?

- (A) Public data member
- (B) Constructor functions
- (C) Void functions
- (D) Overload + Operators

#### UNIT-IV

31. C++ was originally developed by

- (A) Clocksin and Mellish
- (B) Donald E. Knuth
- (C) Sir Richard Hadlee
- (D) Bjarne Stroustrup

32. Reusability is a desirable feature of a language as it

- (A) decreases the testing time
- (B) lowers the maintenance cost
- (C) reduces the compilation time
- (D) Both A and B

33. Cout stands for

- (A) Class output
- (B) Character output
- (C) Common output
- (D) Call output

34. At what point of time a variable comes into existence in memory is determined by its

- (A) Scope
- (B) Storage class
- (C) Data type
- (D) All the above

35. What is meant by template parameter?

- (A) It can be used to pass a type as argument
- (B) It can be used to evaluate a type
- (C) It can of no return type
- (D) None of these

36. Which keyword can be used in template?

- (A) Class
- (B) Typename
- (C) Both A and B
- (D) Function

37. What is validity of template parameters?

- (A) Inside that block any
- (B) Inside the class
- (C) Whole program
- (D) Any of the mentioned

38. An exception thrown from outside by block will

- (A) call function return
- (B) be ignored
- (C) hang the machine
- (D) call function terminate

39. An exception is caused by

- (A) a hardware problem
- (B) a problem in the operating system
- (C) a run-time error
- (D) a syntax error

40. Which of the following is *not* an exception?

- (A) Stack overflow
- (B) Division by zero
- (C) In sufficient memory
- (D) In correct Arithmetic expression

#### UNIT-V

41. In order, the three-step process using a file in a C++ program involves

- (A) Name the file and delete the file
- (B) Insert a diskette, open a file and remove the diskette
- (C) Open the existing file, read/write data, close the file
- (D) None of these

42. Which of the following header file is required for creating and reading data files?

- (A) ofstream.h
- (B) fstream.h
- (C) ifstream.h
- (D) console.h

43. Which of the following function/type of function cannot be overloaded?

- (A) Member function
- (B) Static function
- (C) Virtual function
- (D) Both B and C

44. Where the default value of parameter have to be specified?

- (A) Function call
- (B) Function definition
- (C) Function prototype
- (D) Both B and C

45. Which of the following function/types of function cannot have default parameters?

- (A) Member function of class
- (B) Main()
- (C) Member function of structure
- (D) Both B and C

46. What is the only function all C++ program must contain?

- (A) start()
- (B) system()
- (C) main()
- (D) program()

47. Which of the following is not a correct variable type?

- (A) Float
- (B) Real
- (C) Int
- (D) Double

48. >> is called as ..... operator.

- (A) Insertion
- (B) Extraction
- (C) Greater than
- (D) Lesser than

49. .... is a storage class specifier.

- (A) Object
- (B) Auto
- (C) Switch
- (D) Inherit

50. .... are automatically created when constructors are used.

- (A) Objects
- (B) Destructors
- (C) Arrays
- (D) Reference

## SECTION-B

### खण्ड-ब

Marks : 50

Time : 1½ Hours

After depositing OMR Sheet of Section-A with invigilator, the candidates are required to answer **one** question from each Unit (each question in 250 words) in a separate Answer-book provided to them. **All** questions carry equal marks.

खण्ड-अ की ओ.एम.आर. शीट पर्यवेक्षक को जमा कराने के पश्चात परीक्षार्थी खण्ड-ब की प्रत्येक इकाई से एक प्रश्न का उत्तर दी गई उत्तर-पुस्तिका में देंगे। प्रत्येक प्रश्न का उत्तर लगभग 250 शब्दों में दिया जाना है एवं सभी प्रश्नों के अंक समान हैं।

### UNIT-I

1. Write short notes on any **two** of the following :
  - (a) Procedure oriented v/s Object oriented programming. 5,3,2
  - (b) Data types in C++
  - (c) Polymorphism.
2. (a) Write a C++ program to find the sum of digits of a number reducing it to one digit.  
(b) What is encapsulation? What are its advantages? How can encapsulation be enforced in C++? 5,5

### UNIT-II

3. (a) What do you mean by static class member? Explain the characteristics of static class members with suitable examples.  
(b) An electricity board charges the following rates to domestic users to discourage large consumption of energy :  
For the first 100 units — Rs. 3.0 per unit  
Beyond 100 units — Rs. 5.0 per unit.  
If the total cost is more than Rs. 1,000.00 then an additional surcharge of 15% is added on the difference. Define a class electricity in which the function Bill computer the cost. Define a derived class More-Electricity and override Bill to add the surcharge. 3,7



4. Explain the following :

- (a) Constructors and Destructors
- (b) Overloading
- (c) Friend function and class.

5,2,3

### UNIT-III

5. Develop a program in C++ to create a database of the following items of the derived class.

Name of the patient, sex, age, ward number, bed number, nature of illness, date of admission.

Design a base class consisting of data members : name of patient, sex and age; and another base class consisting of data members : bed number and nature of the illness. The derived class consists of the data member, date of admission.

Program should carry out the following methods :

- (a) Add a new entry
- (b) List the complete record.

10

6. Explain the following :

- (a) Virtual functions and Destructors
- (b) Inheritance
- (c) Abstract classes.

4,4,2

### UNIT-IV

7. What is meant by templates? How function templates is different than class templates? Discuss the overloading of function template. 10

8. (a) Write a program code which throws an exception of types \* char \* and another of type int. Write a by ..... catch block which can catch both the exceptions.

(b) What is meant by exception? What are the benefits of exception handling? What is rethrowing an exception? 5,5

## UNIT-V

9. Differentiate and give examples to bring out the difference between :
- (a) Function overloading and Function overriding
  - (b) Function template and inline function
  - (c) Default constructors and Copy constructor
  - (d) Public and private access specifier. 4,4,2
- ✓ 10. (a) What is meant by file handling? Discuss the sequential and random file processing.
- (b) Explain the components of standard template library. 5,5

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