

18/HV/M-2023-26

Booklet Series

Candidate's Roll Number

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Serial No.

Question Booklet

## GENERAL STUDIES AND COMPUTER SCIENCE

Paper—4

Time Allowed : 2 Hours

Maximum Marks : 120

Read the following instructions carefully before you begin to answer the questions.

### IMPORTANT INSTRUCTIONS

1. This Question Booklet is divided into two Parts, Part-I and Part-II. Part-I contains questions of **GENERAL STUDIES**. Part-II contains questions of **COMPUTER SCIENCE**.
2. **Part-I** consists of Question Nos. **1 to 40** and **Part-II** consists of Question Nos. **41 to 120**. **All questions and their responses are printed in English as well as in Hindi versions.**
3. **All** questions carry equal marks.
4. Attempt questions from **Part-I** and **Part-II**.
5. **Immediately after commencement of the examination, you should check up your Question Booklet and ensure that the Question Booklet Series is printed on the top right-hand corner of the Booklet. Please check that the Booklet contains 48 printed pages including two pages (Page Nos. 46 and 47) for Rough Work and no page or question is missing or unprinted or torn or repeated. If you find any defect in this Booklet, get it replaced immediately by a complete Booklet of the same series.**
6. You must write your Roll Number in the space provided on the top of this page. Do not write anything else on the Question Booklet.
7. An Answer Sheet will be supplied to you separately by the Invigilator to mark the answers. **You must write your Name, Roll No., Question Booklet Series and other particulars in the space provided on Page-1 of the Answer Sheet provided, failing which your Answer Sheet will not be evaluated.**
8. You should encode your **Roll Number and the Question Booklet Series A, B, C or D** as it is printed on the top right-hand corner of the Question Booklet with Black/Blue ink ballpoint pen in the space provided on **Page-2** of your Answer Sheet. **If you do not encode or fail to encode the correct series of your Question Booklet, your Answer Sheet will not be evaluated correctly.**
9. Each question comprises of **five** responses—(A), (B), (C), (D) and (E). You are to select **ONLY ONE** correct response and mark it in your Answer Sheet. In any case, choose **ONLY ONE** response for each question. Your total marks will depend on the number of correct responses marked by you in the Answer Sheet.
10. In the Answer Sheet, there are **five** circles—(A), (B), (C), (D) and (E) against each question. To answer the questions, you are to mark with Black/Blue ink ballpoint pen **ONLY ONE** circle of your choice for each question. Select only one response for each question and mark it in your Answer Sheet. If you mark more than one answer for one question, the answer will be treated as wrong. **Use Black/Blue ink ballpoint pen only to mark the answer in the Answer Sheet. Any erasure or change is not allowed.**
11. For each question for which a **wrong answer** has been given by the candidates, **one-fourth** of the marks assigned to that question will be deducted as **penalty**.
12. You should not remove or tear off any sheet from the Question Booklet. You are not allowed to take this Question Booklet and the Answer Sheet out of the Examination Hall during the examination. **After the examination has concluded, you must hand over your Answer Sheet to the Invigilator.** Thereafter, you are permitted to take away the Question Booklet with you.
13. Failure to comply with any of the above instructions will render you liable to such action or penalty as the Commission may decide at their discretion.
14. Candidates must assure before leaving the Examination Hall that their Answer Sheets will be kept in Self Adhesive LDPE Bag and completely packed/sealed in their presence.

ध्यान दें : अनुदेशों का हिन्दी रूपान्तर इस पुस्तिका के अन्तिम पृष्ठ पर छपा है। 

**PART—I**  
**( GENERAL STUDIES )**

1. How many three-digit numbers are divisible by 5?  
(A) 180  
(B) 200  
(C) 120  
(D) More than one of the above  
(E) None of the above
2. The value of  $\left(1 + \frac{1}{2}\right)\left(1 + \frac{1}{3}\right)\left(1 + \frac{1}{4}\right) \cdots \left(1 + \frac{1}{120}\right)$  is  
(A) 60.5  
(B) 30.0  
(C) 40.5  
(D) More than one of the above  
(E) None of the above
3. The distance between Delhi and Agra is 200 km. Suppose you are travelling from Delhi to Agra by a car. If you can maintain an average speed of 90 km/hr for 120 km and 40 km/hr for the remaining distance, how much time will you take, on average, to reach Agra?  
(A) 3 hr 20 min  
(B) 3 hr 30 min  
(C) 4 hr 45 min  
(D) More than one of the above  
(E) None of the above
4. 10% loss on selling price is what percent loss on cost price?  
(A)  $9\frac{1}{11}\%$   
(B)  $9\frac{2}{11}\%$   
(C) 10%  
(D) More than one of the above  
(E) None of the above
5. A pizza boy delivered two-fifths of his pizzas on day 1, three-fourths of his pizzas on day 2 and  $\frac{9}{16}$  of his pizzas on day 3. On which day did he deliver the most pizzas if he had the same number of pizzas in the beginning of each day?  
(A) Day 1  
(B) Day 2  
(C) Day 3  
(D) More than one of the above  
(E) None of the above
6. The cost of carpeting a room 18 m long with a carpet 75 cm wide at ₹ 4.50 per metre is ₹ 810. The breadth of the room is  
(A) 7 m  
(B) 7.5 m  
(C) 8 m  
(D) More than one of the above  
(E) None of the above



7. Two persons *A* and *B* complete a task in 15 days, when they work together. Person *A* completes the task in 20 days if he works alone. How many days will *B* take to finish the task alone?
- (A) 35 days  
(B) 25 days  
(C) 60 days  
(D) More than one of the above  
(E) None of the above
8. The sum of the numerator and denominator of a fraction is 11. If 1 is added to the numerator and 2 is subtracted from the denominator, it becomes  $\frac{2}{3}$ . The fraction is
- (A)  $\frac{5}{6}$   
(B)  $\frac{6}{5}$   
(C)  $\frac{3}{8}$   
(D) More than one of the above  
(E) None of the above
9. An isotropic source of 2 candela produces light flux equal to
- (A)  $2\pi$  lumen  
(B)  $4\pi$  lumen  
(C)  $8\pi$  lumen  
(D) More than one of the above  
(E) None of the above
10. The spray bottles used as window or household cleaner or perfume sprayer work on
- (A) capillary action  
(B) Bernoulli's principle  
(C) Pascal's law  
(D) More than one of the above  
(E) None of the above
11. The trade name of basic lead carbonate is
- (A) white lead  
(B) red lead  
(C) litharge  
(D) More than one of the above  
(E) None of the above
12. Which of the following elements has the largest atomic radius?
- (A) Lithium  
(B) Beryllium  
(C) Boron  
(D) More than one of the above  
(E) None of the above



13. The phenomenon of photoperiodism in plants was discovered by  
(A) Garner and Allard  
(B) Steward and Salisbury  
(C) Thimann and Skoog  
(D) More than one of the above  
(E) None of the above
14. Silent Valley of Kerala is preserved because  
(A) it contains very rare species of plants and animals  
(B) the soil is rich in minerals  
(C) the areas of land were used extensively for agriculture purposes  
(D) More than one of the above  
(E) None of the above
15. During normal respiration in a mammal, the diaphragm is  
(A) arched  
(B) flattened  
(C) lowered  
(D) More than one of the above  
(E) None of the above
16. The most important cell type associated with the immunity of the body is  
(A) platelets  
(B) lymphocytes  
(C) RBCs  
(D) More than one of the above  
(E) None of the above
17. The book entitled, *Gyan Deepak* was authored by a great saint  
(A) Salar Masood Ghazi  
(B) Dariya Saheb  
(C) Imam Shah Faqih  
(D) More than one of the above  
(E) None of the above
18. Which agency in India has launched UTSAH portal?  
(A) UGC  
(B) AICTE  
(C) MCI  
(D) More than one of the above  
(E) None of the above
19. A. P. J. Abdul Kalam Satellite Launch Vehicle Mission was launched on  
(A) 13th February, 2023  
(B) 20th February, 2023  
(C) 19th February, 2023  
(D) More than one of the above  
(E) None of the above
20. In which city was the first pure green hydrogen plant commissioned?  
(A) Hyderabad  
(B) Mumbai  
(C) Pune  
(D) More than one of the above  
(E) None of the above



**21.** Which year has been declared by the UNO as the 'International Year of Millets'?

- (A) 2023
- (B) 2022
- (C) 2024
- (D) More than one of the above
- (E) None of the above

**22.** Who among the following won the 2022 Nobel Peace Prize?

- (A) Ales Bialiatski
- (B) Nadia Murad
- (C) Maria Ressa
- (D) More than one of the above
- (E) None of the above

**23.** Who is the Chairman of the State Commission for Backward Classes appointed by the Bihar Government on 2nd January, 2022?

- (A) Justice Sanjay Kumar
- (B) Justice Balmiki Prasad Sinha
- (C) Justice Iqbal A. Ansari
- (D) More than one of the above
- (E) None of the above

**24.** Which was the first movie in Bhojpuri?

- (A) *Ganga Maiya Tohe Piyari Chadhaibo*
- (B) *Kanyadan*
- (C) *Nadiya Ke Paar*
- (D) More than one of the above
- (E) None of the above

**25.** Arrange the following thermal power projects of India from east to west :

- 1. Kota
- 2. Namrup
- 3. Obra
- 4. Parichha

Select the correct answer using the codes given below.

- (A) 1, 2, 3, 4
- (B) 2, 4, 1, 3
- (C) 2, 3, 4, 1
- (D) More than one of the above
- (E) None of the above

**26.** Which type of climate is in India according to Trewartha?

- (A) Savanna type
- (B) Subtropical monsoon climate
- (C) Mediterranean type
- (D) More than one of the above
- (E) None of the above



**27.** What is the normal date of withdrawal of south-west monsoon at Hyderabad?

- (A) 1st October
- (B) 15th October
- (C) 1st November
- (D) More than one of the above
- (E) None of the above

**28.** Which of the following States has maximum urbanization?

- (A) Goa
- (B) Maharashtra
- (C) Karnataka
- (D) More than one of the above
- (E) None of the above

**29.** 'Malnad' region is associated with which of the following plateaus of India?

- (A) Telangana Plateau
- (B) Maharashtra Plateau
- (C) Karnataka Plateau
- (D) More than one of the above
- (E) None of the above

**30.** South Peninsular Upland is a part of

- (A) Gondwana Land
- (B) Laurentia Land
- (C) Antarctica Continent
- (D) More than one of the above
- (E) None of the above

**31.** The percentage of population of Bihar with respect to India's total population is

- (A) 8.58%
- (B) 10.10%
- (C) 12.25%
- (D) More than one of the above
- (E) None of the above

**32.** Which of the following pairs is **not** correctly matched with respect to south of Ganga region in Bihar?

- (A) Patna–Munger
- (B) Gaya–Arwal
- (C) Patna–Vaishali
- (D) More than one of the above
- (E) None of the above

- 33.** Who is called the 'Prophet of New India'?
- (A) Raja Ram Mohan Roy
  - (B) Dayananda Saraswati
  - (C) Dadabhai Naoroji
  - (D) More than one of the above
  - (E) None of the above
- 34.** Which revolt is mentioned in *Anandamath* of Bankim Chandra Chattopadhyay?
- (A) Sannyasi
  - (B) Santhal
  - (C) Indigo
  - (D) More than one of the above
  - (E) None of the above
- 35.** Who was the founder of 'Abhinav Bharat' in London?
- (A) Vinayak Damodar Savarkar
  - (B) P. M. Bapat
  - (C) Shyamji Krishna Varma
  - (D) More than one of the above
  - (E) None of the above
- 36.** Where was the Ghadar Party established?
- (A) France
  - (B) Germany
  - (C) United States of America
  - (D) More than one of the above
  - (E) None of the above
- 37.** Who was appointed as the 'Commander in Chief' by Birsa Munda?
- (A) Demka Munda
  - (B) Gaya Munda
  - (C) Sundar Munda
  - (D) More than one of the above
  - (E) None of the above
- 38.** Who formed the Bihar Socialist Party?
- (A) Phulan Chand Tiwari and Rajendra Prasad
  - (B) Phulan Prasad Varma and Jayaprakash Narayan
  - (C) Raj Kumar Shukla and Swami Agnivesh
  - (D) More than one of the above
  - (E) None of the above
- 39.** In which year was the 'Bihar Provincial Congress Committee' formed with its headquarters at Patna?
- (A) 1908
  - (B) 1910
  - (C) 1906
  - (D) More than one of the above
  - (E) None of the above
- 40.** Who established a branch of the Anushilan Samiti in Patna in 1913?
- (A) Ramananda Sinha
  - (B) Satish Jha
  - (C) Sachindra Nath Sanyal
  - (D) More than one of the above
  - (E) None of the above

**PART—II**  
**( COMPUTER SCIENCE )**

- 41.** Which of the following is a technique that marks the beginning of computer communications?
- (A) User Environment
  - (B) Batch Environment
  - (C) Time Sharing
  - (D) More than one of the above
  - (E) None of the above
- 42.** Which language is better for writing structured code?
- (A) PASCAL
  - (B) FORTRAN
  - (C) BASIC
  - (D) More than one of the above
  - (E) None of the above
- 43.** Which language does a browser use to display information from the World Wide Web?
- (A) Machine code
  - (B) Assembly language
  - (C) C++
  - (D) More than one of the above
  - (E) None of the above
- 44.** Select the true statement for compiler.
- (A) The input of the compiler is source program.
  - (B) It translates the source code into object code as a whole.
  - (C) The output of the compiler is object code.
  - (D) More than one of the above
  - (E) None of the above
- 45.** \_\_\_\_\_ is used to shift processes so they are contiguous, and all free memory is in one block.
- (A) Fragmentation
  - (B) Compaction
  - (C) External Fragmentation
  - (D) More than one of the above
  - (E) None of the above



46. Which of the following is **not** a valid variable name in most programming languages?

- (A) myVariable
- (B) 123Variable
- (C) \_myVariable
- (D) More than one of the above
- (E) None of the above

47. Secondary memory is the long-term store for programs and data while main memory holds program and data currently in use. What kind of an organization is this?

- (A) Physical
- (B) Logical
- (C) Structural
- (D) More than one of the above
- (E) None of the above

48. If a semicolon is not used at the end of the statement, what message will be displayed by C++?

- (A) Semicolon missing
- (B) Statement missing
- (C) Error in statements
- (D) More than one of the above
- (E) None of the above

49. A set of libraries that provides programmatically access to some kind of graphics 2D functions is

- (A) Graphics package
- (B) Formatting package
- (C) Animation package
- (D) More than one of the above
- (E) None of the above

50. Which shortcut key is used to compile and run the program in C++?

- (A) Alt+F9
- (B) Alt+F5
- (C) Ctrl+F9
- (D) More than one of the above
- (E) None of the above

51. What does the control unit generate to control other units?

- (A) Timing signals
- (B) Command signals
- (C) Control signals
- (D) More than one of the above
- (E) None of the above

**52.** Which of the following is user-defined header file extension used in C++?

- (A) hg
- (B) cpp
- (C) h
- (D) More than one of the above
- (E) None of the above

**53.** The most common addressing technique employed by a CPU is

- (A) direct
- (B) indirect
- (C) immediate
- (D) More than one of the above
- (E) None of the above

**54.** What will happen if the following C++ statement is compiled and executed?

```
int *ptr = NULL;  
delete ptr;
```

- (A) The program is not semantically correct
- (B) The program is compiled and executed successfully
- (C) The program gives a compile-time error
- (D) More than one of the above
- (E) None of the above

**55.** In various devices, \_\_\_\_\_ are used to overcome the difference in data transfer speed.

- (A) multiple buses
- (B) buffer registers
- (C) speed-enhancing circuitries
- (D) More than one of the above
- (E) None of the above

**56.** What do we use to extend the connectivity of the processor bus?

- (A) PCI bus
- (B) Multiple bus
- (C) SCSI bus
- (D) More than one of the above
- (E) None of the above

**57.** In memory mapped I/O

- (A) the I/O devices and the memory share the same address space
- (B) the I/O devices have a separate address space
- (C) the memory and I/O devices have an associated address space
- (D) More than one of the above
- (E) None of the above



**58.** What is the addressing called that is used in an instruction of the form ADD X Y?

- (A) Indirect
- (B) Index
- (C) Absolute
- (D) More than one of the above
- (E) None of the above

**59.** Which of the following correctly declares an array in C++?

- (A) array{10};
- (B) int array;
- (C) int array[10];
- (D) More than one of the above
- (E) None of the above

**60.** SQL views are also known as

- (A) simple tables
- (B) virtual tables
- (C) complex tables
- (D) More than one of the above
- (E) None of the above

**61.** How many primary keys can be there in a table?

- (A) Only 1
- (B) Only 2
- (C) Depends on number of columns
- (D) More than one of the above
- (E) None of the above

**62.** What will be the output of the following C++ code?

```
#include<iostream>
#include<string>
using namespace std;
int main(int argc, char
                const *argv[ ])
{
    char s1[6]="Hello";
    char s2[6]="World";
    char s3[12]=s1+" "+s2;
    cout<<s3;
    return 0;
}
```

- (A) Hello
- (B) World
- (C) Error
- (D) More than one of the above
- (E) None of the above



**63.** Which of the following is **not** constraint in SQL?

- (A) Primary key
- (B) Not null
- (C) Union
- (D) More than one of the above
- (E) None of the above

**64.** Which of the following is **not** a valid aggregate function?

- (A) COUNT
- (B) COMPUTE
- (C) SUM
- (D) More than one of the above
- (E) None of the above

**65.** Who is the father of computer?

- (A) James Gosling
- (B) Charles Babbage
- (C) Dennis Ritchie
- (D) More than one of the above
- (E) None of the above

**66.** If we have not specified ASC or DESC after an SQL ORDER BY clause, which of the following is used by default?

- (A) DESC
- (B) ASC
- (C) There is no default value
- (D) More than one of the above
- (E) None of the above

**67.** In IA-32 architecture along with the general flags, which of the following conditional flags is provided?

- (A) TF
- (B) IOPL
- (C) IF
- (D) More than one of the above
- (E) None of the above



**68.** Which of the following is true about the HAVING clause?

- (A) Similar to the WHERE clause but is used for columns rather than groups
- (B) Similar to WHERE clause but is used for rows rather than columns

(C) Similar to WHERE clause but is used for groups rather than rows

(D) More than one of the above

(E) None of the above

**69.** The method of accessing the I/O devices by repeatedly checking the status flags is

(A) program-controlled I/O

(B) memory-mapped I/O

(C) I/O-mapped I/O

(D) More than one of the above

(E) None of the above

**70.** \_\_\_\_\_ clause creates temporary relation for the query on which it is defined.

(A) WITH

(B) FROM

(C) WHERE

(D) More than one of the above

(E) None of the above

**71.** The SQL statement

```
SELECT ROUND (65.726, -1)
FROM DUAL;
```

prints

(A) 70

(B) garbage

(C) 726

(D) More than one of the above

(E) None of the above

**72.** The matrix contains  $m$  rows and  $n$  columns. The matrix is called Sparse Matrix if

(A) total number of zero elements  $> (m * n) / 2$

(B) total number of zero elements  $= m + n$

(C) total number of zero elements  $= m / n$

(D) More than one of the above

(E) None of the above



**73.** \_\_\_\_\_ command makes the updates performed by the transaction permanent in the database.

- (A) ROLLBACK
- (B) COMMIT
- (C) TRUNCATE
- (D) More than one of the above
- (E) None of the above

**74.** Which of the following is the basic approach for joining tables?

- (A) Union JOIN
- (B) Natural JOIN
- (C) Subqueries
- (D) More than one of the above
- (E) None of the above

**75.** What is the time complexity of an infix to postfix conversion algorithm?

- (A)  $O(N \log N)$
- (B)  $O(N)$
- (C)  $O(N^2)$
- (D) More than one of the above
- (E) None of the above

**76.** Which of the following is the advantage of the array data structure?

- (A) Elements of mixed data types can be stored
- (B) Easier to access the elements in an array
- (C) Index of the first element starts from 1
- (D) More than one of the above
- (E) None of the above

**77.** Which data structure is mainly used for implementing the recursive algorithm?

- (A) Queue
- (B) Stack
- (C) Binary tree
- (D) More than one of the above
- (E) None of the above



78. What is the postfix expression for the corresponding infix expression?

$$a + b * c + (d * e)$$

- (A)  $abc * + de * +$
- (B)  $abc + * de * +$
- (C)  $a + bc * de + *$
- (D) More than one of the above
- (E) None of the above
79. Which one of the following is **not** the type of queue?
- (A) Linear queue
- (B) Circular queue
- (C) Double-ended queue
- (D) More than one of the above
- (E) None of the above
80. The necessary condition to be checked before deletion from the queue is
- (A) overflow
- (B) underflow
- (C) rear value
- (D) More than one of the above
- (E) None of the above

81. After performing following set of operations, what does the final list look contain?

```
InsertFront(10);
InsertFront(20);
InsertRear(30);
DeleteFront( );
InsertRear(40);
InsertRear(10);
DeleteRear( );
InsertRear(15);
display( );
```

- (A) 10 30 10 15
- (B) 20 30 40 15
- (C) 10 30 40 15
- (D) More than one of the above
- (E) None of the above
82. A linear data structure in which insertion and deletion operations can be performed from both the ends is
- (A) queue
- (B) circular queue
- (C) deque
- (D) More than one of the above
- (E) None of the above



**83.** If circular queue is implemented using array having size MAX\_SIZE in which array index starts with 0, front points to the first element in the queue, and rear points to the last element in the queue. Which one of the following conditions is used to specify that the circular queue is empty?

(A) Front=rear= -1

(B) Front=rear=0

(C) Front=rear +1

(D) More than one of the above

(E) None of the above

**84.** What is the functionality of the following piece of code?

```
public void fun(int x)
{
    q1.offer(x);
}
```

(A) Perform push( ) with push as the costlier operation

(B) Perform push( ) with pop as the costlier operation

(C) Perform pop( ) with push as the costlier operation

(D) More than one of the above

(E) None of the above

**85.** Which one of the following techniques is **not** used in the binary tree?

(A) Randomized traversal

(B) Preorder traversal

(C) Postorder traversal

(D) More than one of the above

(E) None of the above

**86.** Which of the following is **not** a feature of DBMS?

(A) Minimum duplication and redundancy of data

(B) High-level of security

(C) Single-user access only

(D) More than one of the above

(E) None of the above



87. Which of the following statements is **not** true about the doubly linked list?

- (A) We can traverse in both the directions.
- (B) It requires extra space.
- (C) Implementation of doubly linked list is easier than the singly linked list.
- (D) More than one of the above
- (E) None of the above

88. The values appearing in given attributes of any tuple in the referencing relation must likewise occur in specified attributes of at least one tuple in the referenced relation, according to \_\_\_\_\_ integrity constraint.

- (A) referential
- (B) primary
- (C) referencing
- (D) More than one of the above
- (E) None of the above

89. Which of the following options is **not** true about the binary search tree?

- (A) The value of the left child should be less than the root node.
- (B) The value of the right child should be greater than the root node.
- (C) The left and right subtrees should also be a binary search tree.
- (D) More than one of the above
- (E) None of the above

90. The expression  $Y=AB+BC+AC$  shows the \_\_\_\_\_ operation.

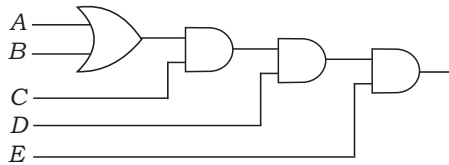
- (A) EX-OR
- (B) SOP
- (C) POS
- (D) More than one of the above
- (E) None of the above

91. What are the canonical forms of Boolean expressions?

- (A) OR and XOR
- (B) NOR and XNOR
- (C) SOM and POM
- (D) More than one of the above
- (E) None of the above



92. Derive the Boolean expression for the logic circuit shown below :



(A)  $C(A+B)DE$

(B)  $[C(A+B)D + E']$

(C)  $[[C(A+B)D]E']$

(D) More than one of the above

(E) None of the above

93. Boolean algebra can be used

(A) for designing the digital computers

(B) in building logic symbols

(C) in circuit theory

(D) More than one of the above

(E) None of the above

94. What does the control unit generate to control other units?

(A) Transfer signals

(B) Command signals

(C) Control signals

(D) More than one of the above

(E) None of the above

95. To display time in railway stations which digital circuit is used?

(A) Seven-segment decoder

(B) Eight-segment encoder

(C) 8 : 3 multiplexer

(D) More than one of the above

(E) None of the above

96. What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interference?

(A) Unshielded twisted pair

(B) Optical fiber

(C) Coaxial cable

(D) More than one of the above

(E) None of the above



97. Which network topology requires a central controller or hub?

- (A) Star
- (B) Mesh
- (C) Ring
- (D) More than one of the above
- (E) None of the above

98. A collection of hyperlinked documents on the Internet forms the

- (A) World Wide Web (WWW)
- (B) e-mail system
- (C) mailing list
- (D) More than one of the above
- (E) None of the above

99. Which of the following is **not** a step in the Header translation procedure?

- (A) The IPv6 mapped address is changed to an IPv4 address by extracting the rightmost 32 bits
- (B) The value of the IPv6 priority field is discarded
- (C) The IPv6 flow label is considered
- (D) More than one of the above
- (E) None of the above

100. Which one of the following would breach the integrity of a system?

- (A) Locking the room to prevent theft
- (B) Full access rights for all users
- (C) Fitting the system with an anti-theft device
- (D) More than one of the above
- (E) None of the above

101. Which sublayer of the data link layer performs data link functions that depend upon the type of medium?

- (A) Logical link control sublayer
- (B) Media access control sublayer
- (C) Network interface control sublayer
- (D) More than one of the above
- (E) None of the above



**102.** Which one of the following is **not** a network topology?

(A) Peer-to-peer

(B) Ring

(C) Bus

(D) More than one of the above

(E) None of the above

**103.** How do structures and classes in C++ differ?

(A) Structures by default hide every member whereas classes do not

(B) In structures, members are public by default, whereas, in classes, they are private by default

(C) Structures cannot have private members, whereas classes can have

(D) More than one of the above

(E) None of the above

**104.** When the mail server sends mail to other mail servers it becomes

(A) SMTP client

(B) SMTP server

(C) peer

(D) More than one of the above

(E) None of the above

**105.** The length of an IPv6 address is

(A) 32 bits

(B) 64 bits

(C) 256 bits

(D) More than one of the above

(E) None of the above

**106.** What is the use of `ios::trunc` mode?

(A) To open a file in input mode

(B) To open a file in output mode

(C) To truncate an existing file to zero

(D) More than one of the above

(E) None of the above



**107.** Which layer of the TCP/IP stack corresponds to the OSI model transport layer?

- (A) Host-to-host
- (B) Application
- (C) Internet
- (D) More than one of the above
- (E) None of the above

**108.** Which of the following statements is/are correct?

1. It is not possible to combine two or more files opening mode in `open()` method.
2. It is possible to combine two or more files opening mode in `open()` method.
3. `ios::in` and `ios::out` are input and output file opening modes respectively.

- (A) 1, 3
- (B) 2, 3
- (C) 3 only
- (D) More than one of the above
- (E) None of the above

**109.** Which of the following is true with regard to the ping command?

- (A) Ping stands for Packet Internet Generator.
- (B) The ping command checks the port level connectivity between source destinations endpoints.
- (C) Ping summarizes the packet loss and round-trip delay between two IP endpoints.
- (D) More than one of the above
- (E) None of the above

**110.** The correct statement for a function that takes pointer to a float, a pointer to a pointer to a char and returns a pointer to a pointer to an integer is

- (A) `int**fun(float**, char**)`
- (B) `int*fun(float*, char*)`
- (C) `int**fun(float*, char**)`
- (D) More than one of the above
- (E) None of the above

**111.** The private key in asymmetric key cryptography is kept by

- (A) sender
- (B) receiver
- (C) sender and receiver
- (D) More than one of the above
- (E) None of the above



**112.** What will be the output of the following C++ code?

```
#include<iostream>
using namespace std;
long factorial (long a)
{
    if (a>1)
        return (a * factorial (a+1));
    else
        return(1);
}

int main( )
{
    long num = 3;
    cout <<num<<"!="<<factorial
                                     (num);

    return 0;
}
```

- (A) 6
- (B) 24
- (C) Segmentation fault
- (D) More than one of the above
- (E) None of the above

**113.** Which of the following features must be supported by any programming language to become a pure object-oriented programming language?

- (A) Encapsulation
- (B) Inheritance
- (C) Polymorphism
- (D) More than one of the above
- (E) None of the above

**114.** Which is correct syntax of inheritance?

- (A) class base\_classname :  
access derived\_classname  
{/\*define class body\*/};
- (B) class derived\_classname :  
access base\_classname  
{/\*define class body\*/};
- (C) class derived\_classname :  
base\_classname {/\*define  
class body\*/};
- (D) More than one of the above
- (E) None of the above

**115.** Which one of the following is the correct definition of "is\_array( );" function in C++?

- (A) It checks that the specified variable is of the array or not
- (B) It checks that the specified array is of single dimension or not
- (C) It checks that the specified array is of multi-dimension or not
- (D) More than one of the above
- (E) None of the above



**116.** Which of the following statements is correct about the class?

- (A) An object is an instance of its class.
- (B) A class is an instance of its object.
- (C) An object is the instance of the data type of that class.
- (D) More than one of the above
- (E) None of the above

**117.** Which of the following can be used to create an abstract class in the C++ programming language?

- (A) By using the pure virtual function in the class
- (B) By declaring a virtual function in the base class
- (C) By declaring the virtual keyword afterward the class declaration
- (D) More than one of the above
- (E) None of the above

**118.** Which of the following statements is correct about the C++ programming language?

- (A) In C++, both the static and dynamic types checking are allowed.
- (B) In C++, member function are allowed to be of the type const.
- (C) In C++, dynamic checking is allowed.
- (D) More than one of the above
- (E) None of the above

**119.** Which feature of OOP is indicated by the following code?

```
class student{int marks;};  
class topper: public student{int age;  
    topper(int age) {this.age=age;};
```

- (A) Encapsulation and inheritance
- (B) Inheritance and polymorphism
- (C) Polymorphism
- (D) More than one of the above
- (E) None of the above

**120.** Which of the following natural elements is the primary element in computer chips?

- (A) Carbon
- (B) Silicon
- (C) Iron
- (D) More than one of the above
- (E) None of the above

