

## Sample Paper

**CLASS - 11th** Duration : 60 Minutes Total Questions : 40 Maximum Marks : 100

### Computer Science

iiO Roll Number

Student's Name

### INSTRUCTIONS

- MUST MARK YOUR STREAM IN OMR SHEET FOR IIO. (C++, JAVA, PYTHON OR MULTIMEDIA)
- Write your 12 digit iiO Roll Number and your name on top of the question Paper in the given space.
- Filling up improper roll number may lead to unavailability of 'Result'.
- This Booklet contains 85 questions in all comprising the following 6 Sections:
 

Section-A	Fundamentals of Computer Science	(15 Questions)	2.5 Marks each
Section-B	Computer Science (C++)	(15 Questions)	2.5 Marks each
Section-C	Informatics Practices (Java)	(15 Questions)	2.5 Marks each
Section-D	Python	(15 Questions)	2.5 Marks each
Section-E	Multimedia & Web Technology	(15 Questions)	2.5 Marks each
Section-F	Mental Ability	(10 Questions)	2.5 Marks each

Section A and F are compulsory for all students. Opt any one from Section B, C, D & Section E.
- Mark your answer (A, B, C, D or E) on the Answer Sheet with Pencil or Black/Blue Ball point Pen.
- Do not start attempting the test paper until you are asked to do so.

### SECTION - A

#### Fundamentals of Computer Science

- A disk scheduling algorithm in an operating system cause the disk arm to move back and forth across the disk surface in order to service all requests in its path. This is called \_\_\_\_\_.
  - First Come First Serve
  - Shortest Seek Time First
  - Scan
  - First In First Out
  - None of these
- Match the following:
 

<b>(A)</b> 1. Cardinality	<b>(B)</b> (A) Can not contain null value.
------------------------------	---
- Who is called as the father of mobile phones?
 

2. Unique key 3. Data integrity 4. Candidate key	(B) Ensures that data in the database is valid and correct. (C) Has eligibility to make primary key. (D) The number of tuples in a relation. (E) Can contain null value. (A) 1 → d, 2 → e, 3 → b, 4 → c (B) 1 → d, 2 → e, 3 → a, 4 → b (C) 1 → b, 2 → c, 3 → d, 4 → e (D) 1 → c, 2 → e, 3 → b, 4 → d (E) None of these
--	--
- Who is called as the father of mobile phones?
 

(A) Blaise Pascal (C) Martin Cooper (E) None of these	(B) Steve Jobs (D) Larry Page
---	----------------------------------

4. In IOS layers, which layer is NOT a user support layer?

- (A) Session layer
- (B) Presentation layer
- (C) Application layer
- (D) Data link layer
- (E) None of these

5. Bus topology is the preferably used in Local Area Network (LAN). Which one of the following is the term used for the central cable that carries all traffic?

- (A) Bus
- (B) Twisted cable
- (C) Non twisted cable
- (D) Address cable
- (E) None of these

6. The Internet was originally conceived by which agency?

- (A) Advanced Research Projects Agency
- (B) National Science Foundation Agency
- (C) National Research & Education Network
- (D) All of these
- (E) None of these

7. Gopher is a client/server system that allows you to access many Internet resources simply by making selections from a sequence of menus. In which year Gopher was born?

- (A) 1990
- (B) 1991
- (C) 1992
- (D) 1989
- (E) None of these

8. IP address is a numeric representation of your computer address. How many bits are there in IP address?

- (A) 64 bit
- (B) 16 bit
- (C) 32 bit
- (D) 4 bit
- (E) None of these

9. Cascading Styles Sheets is a way to style HTML. HTML is the content of the document where as the style sheet is the \_\_\_\_ of that document.

- (A) Presentation
- (B) Margin
- (C) Property
- (D) Slides
- (E) None of these

10. Where does the MAC address reside?

- (A) Transceiver
- (B) BIOS
- (C) NIC
- (D) CMOS
- (E) None of these

11. Match the following:

- |                |     |  |
|----------------|-----|--|
| 1. DNS         | (A) | a unique name that identifies an Internet site.  |
| 2. Domain Name | (B) | translates domain names into IP address          |
| 3. Ethernet    | (C) | image format.                                    |
| 4. GIF         | (D) | clickable text.                                  |
|                | (E) | a common method of networking computers in a LAN |

- (A) 1 → A, 2 → B, 3 → D, 4 → E
- (B) 1 → B, 2 → D, 3 → E, 4 → C
- (C) 1 → B, 2 → A, 3 → E, 4 → C
- (D) 1 → B, 2 → A, 3 → E, 4 → D
- (E) None of these

12. Which one of the following is true about the primary key index?

- (A) It ensures uniqueness of the field that makes up the index
- (B) It allows duplicate values to be entered in the field
- (C) It ensures uniqueness of all fields except the field that makes up the index
- (D) It ensures uniqueness of all fields and allows duplicate values to be entered in the field that makes up the index
- (E) None of these

13. Which one of the following is a tool provided by the operating system for performing most common operations on files or groups of files?

- (A) Disk Manager
- (B) File Manger
- (C) Operations Manager
- (D) All of these
- (E) None of these

14. DSL provides high speed connections over a regular copper telephone line. Here DSL stands for\_\_\_\_\_.

- (A) Dial Service Link
- (B) Digital Subscriber Line
- (C) Demodulate Service Line
- (D) Digitized Subscriber Link
- (E) None of these

15. In magnetic tape higher density means more data on shorter tape. Which one of the following is the density of the measurement of a magnetic tape?

- (A) Bits per inch
- (B) Dots per inch
- (C) Megahertz
- (D) Bytes per inch
- (E) None of these

## SECTION - B

### Computer Science (C++)

**16. Which of the following type of class allows only one object of it to be created?**

- (A) Virtual class            (B) Abstract class  
(C) Singleton class        (D) Friend class  
(E) None of these

**17. Which of the following statements is correct?**

- (A) Base class pointer cannot point to derived class.  
(B) Derived class pointer cannot point to base class.  
(C) Pointer to derived class cannot be created.  
(D) Pointer to base class cannot be created.  
(E) None of these

**18. Which of the following correctly declares an array?**

- (A) int array[10];            (B) int array;  
(C) array{10};                (D) array array[10];  
(E) None of these

**19. To perform File I/O operations, we must use \_\_\_\_\_ header file.**

- (A) < ifstream>                (B) < ofstream>  
(C) < fstream>                (D) Any of these  
(E) None of these

**20. What will be the output of this program?**

```
#include <stdio.h>
using namespace std;
int array1[] = {1200, 200, 2300, 1230, 1543};
int array2[] = {12, 14, 16, 18, 20};
int temp, result = 0;
int main()
{
    for (temp = 0; temp < 5; temp++){
        result += array1[temp];
    }
    for (temp = 0; temp < 4; temp++){
        result += array2[temp];
    }
    cout << result;
    return 0;
}
```

- (A) 6553                        (B) 6533  
(C) 6522                        (D) 12200  
(E) None of these

**21. What will be the output of the this program?**

```
#include <stdio.h>
using namespace std;
int main ()
{
    int array[] = {0, 2, 4, 6, 7, 5, 3};
```

```
int n, result = 0;
for (n = 0; n < 8; n++){
    result += array[n];
}
cout << result;
return 0;
}
```

(A) 25                            (B) 26  
(C) 27  
(D) None of the mentioned  
(E) Both (A) or (B)

**22. What is the output of this program?**

```
#include <stdio.h>
using namespace std;
int main()
{
    int a = 5, b = 10, c = 15;
    int arr[3] = {&a, &b, &c};
    cout << *arr[*arr[1] - 8];
    return 0;
}
```

(A) 15                            (B) 18  
(C) garbage value            (D) compile time error  
(E) None of these

**23. What will happen when the structure is declared?**

- (A) it will not allocate any memory  
(B) it will allocate the memory  
(C) it will be declared and initialized  
(D) none of the mentioned  
(E) None of these

**24. What is the output of this program?**

```
#include <iostream>
using namespace std;
struct Time {
    int hours;
    int minutes;
    int seconds;
};
int toSeconds(Time now);
int main()
{
    Time t;
    t.hours = 5;
    t.minutes = 30;
    t.seconds = 45;
    cout << "Total seconds: " << toSeconds(t) << endl;
    return 0;
}
int toSeconds(Time now)
{
    return 3600 * now.hours + 60 * now.minutes +
        now.seconds;
}
```

(A) 19845                        (B) 20000  
(C) 15000                        (D) 19844  
(E) None of these

25. Which of the following is a properly defined structure?

- (A) struct {int a;} (B) struct a\_struct {int a;}  
 (C) struct a\_struct int a; (D) struct a\_struct {int a;}  
 (E) None of these

26. What is data hiding ?

- (A) It is related with hiding internal object details  
 (B) It is related with showing internal object details  
 (C) It is related with datatypes  
 (D) All of these  
 (E) None of these

27. What is default visibility mode for members of classes in C++ ?

- (A) Private (B) Public  
 (C) Protected (D) Depends  
 (E) None of these

28. Inline functions may not work \_\_\_\_\_

- (A) If function contain static variables  
 (B) If function contain global and register variables  
 (C) If function returning value consists looping construct (i.e. for, while)  
 (D) If inline functions are recursive  
 (E) None of these

29. If default constructor is not defined, then how the object of the class will be created?

- (A) The compiler will generate error  
 (B) Error will occur at run time  
 (C) Compiler provides its default constructor to build the object  
 (D) All of these  
 (E) None of these

30. Assigning one or more function body to the same name is called \_\_\_\_\_

- (A) Function Overriding  
 (B) Function Overloading  
 (C) Function Swapping  
 (D) All of these  
 (E) None of these

## SECTION - C

### Informatics Practices (Java)

16. Which of these package contains classes and interfaces for networking?

- (A) java.io (B) java.util  
 (C) java.net (D) java.network  
 (E) None of these

17. How many ports of TCP/IP are reserved for specific protocols?

- (A) 10 (B) 1024  
 (C) 2048 (D) 512  
 (E) None of these

18. What is the output of this program?

```
import java.net.*;
class networking {
public static void main(String[] args) throws
UnknownHostException {
Inet Address obj1 = Inet Address.get By
Name("silverzone.org");
Inet Address obj2 = Inet Address.get By
Name("silverzone.org");
boolean x = obj1.equals(obj2);
System.out.print(x);
}
}
```

(A) 0 (B) 1  
 (C) true (D) false  
 (E) None of these

19. Which inheritance is not supported in java?

- (A) Single inheritance  
 (B) Hybrid inheritance  
 (C) Multilevel inheritance  
 (D) Java supports all of the above  
 (E) None of these

20. Which is a perfect example of runtime polymorphism?

- (A) Method overloading  
 (B) Method overriding  
 (C) Constructor overloading  
 (D) All of these  
 (E) None of these

21. Which keyword is used by classes to implement an interface?

- (A) import (B) implements  
 (C) instance of (D) All of these  
 (E) None of these

22. Which of these keywords is not a part of exception handling?

- (A) Try (B) Finally  
 (C) Thrown (D) Catch  
 (E) None of these

23. Which is used for writing data to a file in file handling?

- (A) FileInputStream (B) FileOutputStream  
 (C) FileStream (D) All of these  
 (E) None of these

24. Which of these API represents that software programs can follow to communicate with each other?

- (A) Interfaces (B) Classes  
 (C) Structure (D) Both (A) and (B)  
 (E) None of these

25. Why java program cannot directly communicate with an ODBC driver?

- (A) ODBC written in C# language
- (B) ODBC written in C language
- (C) ODBC written in C++ language
- (D) All of these
- (E) None of these

26. ARRAY,CLOB,BLOB and REF type columns can be updated in?

- (A) JDBC 2.0
- (B) JDBC 1.0
- (C) JDBC 3.0
- (D) JDBC 4.0
- (E) None of these

27. In the following which package is used for analyzing code during run time?

- (A) java.lang.reflect
- (B) java.awt
- (C) java.io
- (D) java.applet
- (E) None of these

28.

```
public void foo( boolean a, boolean b)
{
    if( a )
    {
        System.out.println("A");
    }
    else if(a && b)
    {
        System.out.println( "A && B");
    }
    else
    {
        if ( !b )
        {
            System.out.println( "notB");
        }
        else
        {
            System.out.println( "ELSE" );
        }
    }
}
```

- (A) If a is true and b is true then the output is "A &&B"
- (B) If a is true and b is false then the output is "notB"
- (C) If a is false and b is true then the output is "ELSE"
- (D) If a is false and b is false then the output is "ELSE"
- (E) None of these

29. What will be the output of the program?

```
class PassA
{
    public static void main(String [] args)
    {
        PassA p = new PassA();
        p.start();
    }
    void start()
    {
        long [] a1 = {3,4,5};
        long [] a2 = fix(a1);
        System.out.print(a1[0] + a1[1] + a1[2] + " ");
        System.out.println(a2[0] + a2[1] + a2[2]);
    }
}
long [] fix(long [] a3)
{
    a3[1] = 7;
    return a3;
}
}
```

- (A) 12 15
- (B) 15 15
- (C) 3 4 5 3 7 5
- (D) 3 7 5 3 7 5
- (E) None of these

30. What will be the output of the program?

```
class PassS
{
    public static void main(String [] args)
    {
        PassS p = new PassS();
        p.start();
    }
    void start()
    {
        String s1 = "slip";
        String s2 = fix(s1);
        System.out.println(s1 + " " + s2);
    }
    String fix(String s1)
    {
        s1 = s1 + "stream";
        System.out.print(s1 + " ");
        return "stream";
    }
}
}
```

- (A) slip stream
- (B) slipstream stream
- (C) stream slip stream
- (D) slipstream slip stream
- (E) None of these

## SECTION - D

### Python

16. What is the output when we execute `list("hello")`?

- (A) ['h', 'e', 'l', 'l', 'o']      (B) ['hello']  
 (C) ['llo']      (D) ['olleh']  
 (E) None of these

17. Suppose list1 is [2445,133,12454,123], what is `max(list1)` ?

- (A) 2445      (B) 133  
 (C) 12454      (D) 123  
 (E) None of these

18. Suppose `d = {"john":40, "peter":45}`, to delete the entry for "john" what command do we use

- (A) `d.delete("john":40)`  
 (B) `d.delete("john")`  
 (C) `del d["john"]`  
 (D) `del d("john":40)`  
 (E) None of these

19. Which of these is not a core datatype?

- (A) Lists      (B) Dictionary  
 (C) Tuples      (D) Class  
 (E) None of these

20. Given a function that does not return any value, What value is thrown by it by default when executed in shell.

- (A) int      (B) bool  
 (C) void      (D) All of above  
 (E) None of these

21. Following set of commands are executed in shell, what will be the output?

```
>>>str="hello"
>>>str[:2]
>>>str
```

- (A) he      (B) lo  
 (C) olleh      (D) hello  
 (E) None of these

22. Carefully observe the code and give the answer.

```
def example(a):
    a = a + '2'
    a = a*2
    return a
```

```
>>>example("hello")
```

- (A) indentation Error  
 (B) cannot perform mathematical operation on strings  
 (C) hello2  
 (D) hello2hello2  
 (E) None of these

23. What is the average value of the code that is executed below ?

```
>>>grade1 = 80
>>>grade2 = 90
>>>average = (grade1 + grade2) / 2
```

- (A) 85      (B) 85.0  
 (C) 95      (D) 95.0  
 (E) None of these

24. Python is a \_\_\_\_\_ language.

- (A) Scripting  
 (B) Object Oriented  
 (C) Object Oriented Scripting  
 (D) Procedural  
 (E) None of these

25. What would `len(2**1000000)` print in python?

- (A) Stack Overflow  
 (B) print the value  
 (C) count the digits in the result.  
 (D) All of Above  
 (E) None of these

26. What are the keys to scroll and get the previous command executed in python interactive shell on Windows and Linux?

- (A) Alt+P      (B) Alt+L  
 (C) Ctrl+P      (D) Ctrl+L  
 (E) None of these

27. What is the key to scroll forward in the command history on Windows and Linux?

- (A) Alt+F      (B) Ctrl+F  
 (C) Ctrl+N      (D) Alt+N  
 (E) None of these

28. What are Frozen Binary Executables?

- (A) Compiled python code i.e. bytecodes  
 (B) Immutable python files  
 (C) Compiled python code + python interpreter  
 (D) All of the Above  
 (E) None of these

29. Which of the following is a Python tuple?

- (A) [1, 2, 3]      (B) (1, 2, 3)  
 (C) {1, 2, 3}      (D) {}  
 (E) None of these

30. What will be the output?

```
1. >>>t=(1,2,4,3)
```

```
2. >>>t[1:3]
```

- (A) (1, 2)      (B) (1, 2, 4)  
 (C) (2, 4)      (D) (2, 4, 3)  
 (E) None of these

## SECTION - E

### Multimedia & Web Technology

**16. Which one of the following is the characteristic of a multimedia system?**

- (A) high storage
- (B) high data rates
- (C) high processing speed
- (D) Both (A) and (B)
- (E) None of these

**17. Real time streaming protocol is used**

- (A) to control streaming media servers
- (B) for establishing and controlling media sessions between endpoints
- (C) to provide real time control of playback of media files from the server
- (D) All of the mentioned
- (E) None of these

**18. Which algorithm can be optimized to meet the timing deadlines and rate requirements of continuous media?**

- (A) Earliest-Deadline-First scheduling
- (B) SCAN-EDF scheduling
- (C) LIFO scheduling
- (D) Both (A) and (B)
- (E) None of these

**19. Which of the following is sensible HTML code?**

- (A) `<PARAM NAME = "autostart" VALUE = "true" >`
- (B) `<PARAM NAME = "autostart" VALUE = "video/avi" >`
- (C) `<PARAM NAME = "autostart" VALUE = "audio/avi" >`
- (D) `<PARAM NAME = "reunion.avi" VALUE = "audio/avi" >`
- (E) None of these

**20. Which of the following options is correct with regard to HTML?**

- (A) It is a modelling language
- (B) It is a DTP language
- (C) It is a partial programming language
- (D) It is used to structure documents
- (E) It is a scripting language.

**21. Consider the following statement:**

```
GET /cgi-bin/dispenser.pl&want = whats new.html
HTTP/1.0
```

**Which of the following options is a correct one?**

- (A) The above statement is a part of a request from a web client
- (B) The above statement is a part of the input to a CGI program
- (C) want is a variable and whatsnew.html is a value
- (D) want is a variable and whatsnew.html HTTP/1.0 is the value
- (E) dispenser.pl may be a CGI program.

**22. In which type of streaming multimedia file is delivered to the client, but not shared?**

- (A) real-time streaming
- (B) progressive download
- (C) compression
- (D) All of these
- (E) None of these

**23. Graphic programs widely used in the graphic arts profession include \_\_\_\_\_**

- (A) desktop publishing programs, image editors and illustration programs
- (B) artificial intelligence, virtual reality, and illustration programs
- (C) megamedia programs, image editors, and desktop publishing programs
- (D) virtual reality, desktop publishing programs, and illustration programs
- (E) None of these

**24. If the definition for "multimedia" is "a combination of media," what is the best definition for "hypermedia?"**

- (A) Separate media
- (B) Linked concepts
- (C) Separate concepts
- (D) Linked media
- (E) None of these

**25. An example of video editing software is**

- (A) imovie
- (B) PowerPoint
- (C) HyperStudio
- (D) Photoshop
- (E) None of these

**26. Multimedia system required hard real time scheduling:**

- (A) To ensure critical tasks will be service within time deadlines.
- (B) To deliver the media file to the client.
- (C) To minimize the delay.
- (D) For security.
- (E) None of these

27. The visual representation of a project that includes a table of contents as well as a chart of the logical flow of the interactive interface is often called

- (A) A master layout  
(B) A navigation map  
(C) A workflow diagram  
(D) A prototype  
(E) A synthesizer

28. ITC Franklin Gothic specifies:

- (A) Style (B) Visual Effect  
(C) Color (D) Font  
(E) Dimension.

29. Interleaving the audio and video segments of a video clip together in a data file is:

- (A) Flare (B) Flattening  
(C) Hot Spot (D) Helical Scan  
(E) Father

30. Which of the following statements is false about event handlers in JavaScript?

- (A) They can be included with input tags  
(B) They can be associated with end of file processing for a database application  
(C) They can be included with the form tag  
(D) They are generally used to call functions when triggered  
(E) They can be used to trigger server-side scripts.

### SECTION - F (Arithmetic, Logical and Reasoning)

31. Coal : Heat :: Wax : ?

- (A) Energy (B) Candle  
(C) Light (D) Bee  
(E) None of these

32. Which one does not belong to that group ?

- (A) SUNDAY : NSVYDB  
(B) MOTHER : TMPRHD  
(C) PARENT : RPBTEO  
(D) MOSTLY : SMPYTM  
(E) None of these

33. If in a certain code, LUTE is written as MUTE and FATE is written as GATE, then how will BLUE be written in that code ?

- (A) CLUE (B) GLUE  
(C) FLUE (D) SLUE  
(E) None of these

34. Going 50 m to the South of her house, Radhika turns left and goes another 20 m. Then, turning to the North, she goes 30 m and then starts walking to her house. In which direction is she walking now ?

- (A) North-west (B) North  
(C) South - east (D) East  
(E) None of these

35. 4, 8, 12, 24, 36, 72, ?.

- (A) 108 (B) 98  
(C) 92 (D) 96  
(E) None of these

36. If code of 'FTNO' is 'GUST', then find the code of 'BPHU'.

- (A) CZMQ (B) CQMZ  
(C) CMZQ (D) CMOZ  
(E) None of these

37.

5	5	2
2	4	1
8	3	10
40	30	?

- (A) 10 (B) 12  
(C) 13 (D) 20  
(E) None of these

38. In a shop, there were 4 dolls of different heights A, B, C and D. D is neither as tall as A nor as short as C. B is shorter than D but taller than C. If Mani wants to purchase the tallest doll, which one should she purchase ?

- (A) Only A (B) Only D  
(C) Either A or D (D) Either B or D  
(E) None of these

39. Seven people – A, B, C, D, E, F and G – are standing in a single file line, facing a booth. E is somewhere ahead of F. There is exactly one person standing between C and G. D is immediately behind A. F is behind both B and D. If D and C are fourth and fifth in line respectively, then which of the following must be true ?

- (A) A is first (B) B is first  
(C) F is sixth (D) F is seventh  
(E) None of these

40. Arrange the words given below in a meaningful sequence.

1. Protect 2. Pressure  
3. Relief 4. Rain  
5. Flood  
(A) 2,4,3,1,5 (B) 2,4,5,1,3  
(C) 2,5,4,1,3 (D) 3,2,4,5,1  
(E) None of these