

This Question Paper consists of **31** questions and **8** printed pages.

Roll No.

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Code No. **63/OSS/1**

SET

A

COMPUTER SCIENCE (330)

Day and Date of Examination _____

Signature of Invigilators 1. _____

2. _____

General Instructions :

- 1 Candidate must write his/her Roll Number on the first page of the Question Paper.
- 2 Please check the Question Paper to verify that the total pages and total number of questions contained in the Question Paper are the same as those printed on the top of the first page. Also check to see that the questions are in sequential order.
- 3 Making any identification mark in the Answer-Book or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.
- 4 Write your Question Paper Code No. **63/OSS/1, Set-**

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 on the Answer-Book.



COMPUTER SCIENCE

(330)

Time : 3 Hours]

[Maximum Marks : 60

Note : (i) Answer **all** questions.

(ii) Marks allotted to each question are given on the right-hand side.

(iii) Use C++ programming language to answer the programming questions.

- 1 Name the header files to which the following built-in functions belong : 1
 - (i) getch()
 - (ii) isdigit ()

- 2 For an integer number with assigned value as a=5, write a statement using a conditional operator to check and display whether number is "positive" or "negative". 1

- 3 _____ symbol is used to declare a reference variable in C++. 1

- 4 How is Server Virtualization different from Network Virtualization ? 1

- 5 State four advantages of Grid computing. 1

- 6 Write the HTML code to display 2D rule in a web page having width of 2 pixels and without any shade. 1

- 7 Define the following terms : 2
 - (i) Data Abstraction
 - (ii) Encapsulation



8 Write the output of the following program :

2

```
#include<isotream.h>
#include<ctype.h>
void main()
{   char Str[ ]= "WelCome 2021";
    for (int a=0; Str[a]! = '\0';a++)
    {   if(isalpha(Str[a]))
        {   if(isupper(Str[a]))
            Str[a]++;
            else
                Str[a]=Str[a-1];
        }
        else if(isdigit(Str[a]))
            Str[a]='#';
        else
            str[a]='@';
    }
    cout<<Str;    }
```

9 Answer the following questions :

2×2=4

- (a) Give any difference between prefix and postfix operators. Give one example of each.
- (b) Differentiate between break statement and exit() function from behaviour point of view. Also, give an example in C++.

10 Write output of the following program.

2

```
#include<iostream.h>
int X=15, Y=30;
void inter_change (int & x, int y)
{   X = x+y;
    Y = x-y;
    X = x-y;
}
void main()
{   int X=20, Y=40;
    cout<<X<<" "<<:Y<<'\n';
    inter_change (X, :Y);
    cout<<:X<<" "<<Y;
}
```



11 Define a structure 'Sports' in C++ with the following specifications : 3

Members :

S_Code of type integer

S_Name of type character array having length 10 characters

Fees of type double

Duration of type integer

A function New Sports() which allows user to enter S_Code, S_Name and Duration.

Also assign the values to Fees as per the following criteria given below.

<u>S Name</u>	<u>Fees</u>
Table Tennis	2500
Swimming	3000
Football	2000

12 Define the following terms : 2

(i) void*ptr

(ii) Deferencing Operator

13 Consider the table "School" given below. Write SQL commands for the statements (i) to (iii). 3

Relation : **SCHOOL**

CODE	TEACHER NAME	SUBJECT	DOJ	PERIODS	EXPERIENCE
1101	SHYAM SUNDAR	MATHS	13/5/2001	25	12
2201	RAVI PRASAD	ENGLISH	07/06/1996	22	08
3301	TEJENDR SINGH	PHYSICS	10/10/1999	26	14
4401	HARI OM	CHEMISTRY	15/02/2001	26	14
5501	UMA SHANKAR	SPORTS	22/12/2000	20	10
6601	GUNJAN	COMPUTER	16/11/1998	24	09

(i) To display TEACHER NAME, PERIODS of all teachers whose experience is less than 10 years.

(ii) To display the teachers name and subject whose name contains "R"

(iii) To display CODE, TEACHERNAME and SUBJECT of all those teachers who have joined the school after '01/01/2000'



- 14 Identify the error(s). Rewrite the corrected code and underline the corrections. 2

```
#include<iostream.h>
void main()
{   int  val=18;
    double();
    cout>>val;
}
void double(int & val)
{   val=*2;
}
```

- 15 Write a function to search a specific element in an integer array of 20 elements using binary search technique. 2

- 16 Define a class Mobilebill with the following specifications 4

Private Members

- M_no of type unsigned long
- C_Name of type character array (String)
- NOC type integer //Number of calls
- Amount of type double
- Define a member function call_bill() to calculate the mobile bill for the month as per the following criteria

No. of calls	Amount
0 – 50	Free
51 – 100	20p per call
101 – 200	50p per call
201 and above	75p per call

Rent will be Rs. 100/- and is compulsory.

Public Members :

- A function getDetails() which allows the user to enter mobile no., customer name, total no. of calls and invoke a function call_bill().
- A function display_bill() to display the calculated bill with all details.



17 Answer the questions (i) to (iii) based on the following :

3

```
class Top
{
    int No_of_cars;
    int no_of_hrs;
public:
    float Price;
    Top();
    void enter_T();
    void exit_T();
};

class Middle : protected Top
{
protected:
    int No_of_bikes;
    int no_of_mins;
public:
    Middle();
    void enter_M();
    void exit_M();
};

class Ground : Public Middle
{
    int no_of_cars;
    int No_of_bikes;
    int duration;
public:
    Ground();
    void enter_G();
    void exit_G();
};
```

- (i) Write statement to find sizes of an object class Ground and class middle in bytes.
- (ii) Write a statement to invoke member function(s) of class middle by the object of class Ground.
- (iii) Write name of all the data members which are accessible from the objects of class Ground.



- 18 Define a function not_sold() in C++ to copy record(s) of a binary file GIFT.DAT, into another file LEFTOUT.DAT, which have not sold during festival season. 3

```
struct GIFT
{
    int G_code;
    char Gift_item[20], Gift_type[20];
    char G_status; //sold status 'Y' for yes and 'N' for No
    float Gift_price;
};
```

- 19 (a) What is Normalization ? Why there is a need for Normalization ? 2
(b) Define Logical Data Model with the help of an example. 1
- 20 Differentiate between structural tags and Formatting tags in HTML with an example of each. 2
- 21 Write the HTML code to create the following : 3

Streams available are :

I. Commerce

- Accounts
- Business Studies

II. Science

- Chemistry
- Physics

- 22 What happens if the image to be displayed on the web page is not available ? 3
Explain the tag and attribute used to do so with the help of an example.
- 23 Explain the difference between '/' and '%' operator in C++. 2



24 Write the equivalent switch...case statement for the following : **2**

```
if (no==15 || no==21)
    cout<<"Odd number";
else if (no==12 || no==24)
    cout<<"Even number";
else if (no==11 || no==17)
    cout<<"Prime number";
else
    cout<<"Not a specified number";
```

25 How many times string "Hello" will be printed on the screen ? **1**

```
while(0)
{   cout<<"Hello";   }
```

26 Give the difference between getch() and getchar() functions in C++. **1**

27 Differentiate between ios::nocreate and ios::noreplace modes in C++. **1**

28 Write a statement to move get file pointer to the end of the file in C++. **1**

29 Define foreign key of a table. **1**

30 Write the HTML code to set the height and width of an inserted image "Star.jpg" as 200 pixels and 150 pixels respectively. **1**

31 Complete the following HTML code to set the text colour of the whole body as "Blue". **1**

```
<BODY _____ >
```

