

This Question Paper consists of 33 questions of "New Syllabus" and 06 questions of "Old Syllabus" and 16 total printed pages.

Sl. No.

Roll No.

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Code No. "NEW SYLLABUS" : 60/OSS/1/NEW

Code No. "OLD SYLLABUS" : 60/OSS/1/OLD

Set

B

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. **60/OSS/1/NEW OR 60/OSS/1/OLD, Set - B** (as applicable) on the Answer-Book.

IMPORTANCE INSTRUCTIONS

1. This Question Paper Booklet contains two Question Papers - one based on revised study material marked as **New Syllabus** and the other based on pre-revised study material marked as **Old Syllabus**.
2. **New Syllabus** is compulsory for candidates those who have registered for 2019-20 (Block-I) admission and are appearing in March-April - 2020 Examinations.
3. **Old Syllabus** is compulsory for those who had registered before 2019-20 (Block-I) admission.
4. Candidates are required to answer only one Question Paper from the given two Question Papers.
5. Candidates are not allowed to mix questions from the given two Question Papers.

**COMPUTER SCIENCE
(330) (New syllabus)**

Time : 3 Hours]

[Maximum Marks : 60

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

(ii) Marks allotted to each question are given in the right-hand margin.

1. Which of the following identifiers cannot be used for naming variable, constants or functions in a program: [1]

pass&fail, _variable, float, For, IOSTREAM, Your_Book

2. Explain the following terms with examples from C++ [2 × 1 = 2]

i) Data Abstraction

ii) Modularity

3. Give two differences between << and >> operators. [2]

4. Name the header files to which the following built in functions belong [2 × ½ = 1]

i) putchar()

ii) strcmp()

5. Assume an integer variable MyNumber. Write a C++ statement **using Conditional Operator** to assign the value 0 to variable X, if the MyNumber is odd and 1 if MyNumber is even. [1]

6. In a switch..case statement, when is the default statement executed? [1]

7. Find the syntax errors from the following program. Justify each error. [2]

```
#include<iostream. h>

void main()
{
float al=11. 0;
Try_this(fvarl);
}

float Try_this( float fvarl)
{
    fvarl++;
    cout<<' The Number is '<<fvarl;
}
```

8. Write a function CHECKPRIME(), that takes a number as an argument and checks whether it is a prime number or not. [2]

9. Write the output of the following code. Assume all the required header files are already included. [3]

```
#include<iostream. h>

int score=50;

void Testify(int& var , char ch='K')
{
    var=var*score;
    if (var%10==0)
        cout<<ch;
    else
        cout<<"Sorry";
}
```

```

void main()
{
    int score=15;
    char cstr= 'P';
    Testify(: :score,cstr);
    cout<<score<<"***" <<cstr<<endl;
    Testify (score);
    cout<<score<<"***" <<cstr<<endl;
    Testify(score, 'D');
    cout<<: : score<<" " <<cstr<<endl;
}

```

10. Write a function CHECK() in C++ which accepts a number as an argument and displays number of odd number of digits in it. for eg for input 607885 output 2 is displayed. [2]

11. Predict the output of the following program : [2]

```

#include<ctype.h>
#include<stdio.h>
void main ()
{
    char STR[ ]="#E1x2";
    for (int b=0; STR[b] != '\0 '; b++)
    {
        if (!isdigit(STR[b]))
            STR[b] = '@' ;
        else if (isupper (STR[b]))
            STR [b] = '*';
        else
            STR [b] = STR[b+1];
    }
    puts (STR) ;
}

```

12. Define a Register variable. [1]

13. Write a function that takes an array of 100 integers and a number as an argument and displays the position of the number using binary search. [2]

14. Declare a structure CONTACT having Building(string), Floor(int), Street(string) and City(string) as its members. Thereafter create another structure COMPANY having the following members :

Reg_No of type integer

CName of type string

Revenue of type float

Address an instance of CONTACT

Write a C++ statement to accept the value of City from the user. [3]

15. Write a C++ statement that creates an alias of double datatype as cost. [1]

16. Define a class Sports_Academy in C++ with following descriptions: [4]

Private members :

SCode of type Long

SName of type String

Course_Fees of type Float

Duration of type integer

Public members :

- Constructor to assign initial values of SCode as 9999, SName as “Khelo”, course_fees as 100, Duration 99
- A function Enter() which allows the user to enter SCode, SName and Duration. Also assign the values to Course_Fees as 1000 if duration is more than 100.
- A function DisplaySports() to display all the details.

17. Consider the following class definition and answer the questions that follow.[3]

```
class NATION
{
    int population;
protected:
    int states;
    float revenue;
public:
    NATION ();
    ~NATION ();
    void INPUT ();
    void OUTPUT ();
};

class WORLD: private NATION
{
    char type;
protected:
    int countries;
public:
    WORLD () ;
    ~WORLD () :
    void INDATA(int, int);
    void OUTDATA ( );
};

class STATE: public WORLD
{
    char CM[10];
public:
    STATE ( );
    ~STATE ();
    void DISPLAY(void);
};
```

- i) Name the base class and derived class of the class WORLD.
- ii) Name the data member(s) that can accessed from function DISPLAY () of class STATE.
- iii) Name the member function(s) which can be accessed from the objects of class STATE.

18. Give C++ statements to do the following : **[2 × ½ = 1]**

- i) Create a character pointer myptr
- ii) Make myptr hold the address of character variable var.

19. Assuming the class CLINIC is defined below. Write a user defined function to add the objects of CLINIC at the end of the binary file clinicdata.dat. The records should be entered till the user wishes to. **[3]**

```
class CLINIC
{
    int Patient_Id ;
    char Patient_Name [13];
    float fees ;
    char Attending_Doctor [30];
public:
    void enterdata ( )
    {
        cin>>Patient_Id;
        gets (Patient_Name) ;
        gets (Attending_Doctor) ;
        cin>>fees;
    }
    void showdata ( )
    {cout<<Patient_Id<<Patient_Name<<fees<<Attending_Doctor;}
    } ;
```

20. Define Bold & Italic pointer. **[1]**

21. Give one point of difference between ios::app and ios::ate. **[1]**

22. Write the statement to position the read pointer at the beginning of the file that is opened using the ifstream object named F1. **[1]**

23. Define the following : **[2]**

- i) Schema
- ii) Database

24. Give any two reasons for which normalization should be carried out. [1]

25. Observe the table -EMPLOYEES given below and write the queries (i), (ii) and (iii) that follow. [3 × 1 = 3]

Table : EMPLOYEES

EMPID	FNAME	LNAME	ADD	CITY
601	MRINALINI	JAIN	45 AVE	BANGALORE
409	SAMARTH	TOBY	67 DLF	GURGAON
106	SARAH	KHAN	98 CPURI	DELHI
216	MANI	SWAMY	77 CDG	CHANDIGARH
234	ROHIT	SAMBAL	65 DLH	N DELHI
152	RANJIT	LOTA	33 SLOK	GURGAON
274	PEETAMBAR	TRILOK	42 GM	MUMBAI

- To display the contents of EMPLOYEES table in ascending order of EMPID.
- To change the city from CHANDIGARH to HYDERABAD.
- To display the first name and city of the employees whose EMPID is more than 250.

26. Give one difference between <P> and
 element in HTML. [1]

27. Differentiate between degree and cardinality of a table. [1]

28. Design the following web page with the specifications given below : [3]

Internet

Internet is network of networks. It connects each one of us across the globe. Using Internet, we can send emails, watch videos, book airline, railway or movie tickets. It also helps us to view online tutorials.

- i) The title of the page should be Internet.
- ii) The background colour of the page is pink and the text colour of paragraph text is red.
- iii) The heading is in the centre of the page, has the font style as “Impact”, colour as blue and size as 20.
- iv) The paragraph should be of font size 16.
- v) The solid line in the centre is of 5 pixels width, is of blue colour and covers half the page.

29. Differentiate between PNG and GIF image formats. [2]

30. Write the HTML code to create the following list (without rectangular boundary)[3]

Types of Networks	
•	PAN
•	LAN
•	MAN
•	WAN
Applications of Networks	
A.	Sharing of Resources
B.	Communicating with any one across the globe

31. Differentiate between container and empty elements. Give two examples of each.[2]

32. Define Universal virtualization in modern computing environment. [1]

33. Give one advantage and one disadvantage of mobile computing. [1]



**COMPUTER SCIENCE
(330) (Old Syllabus)**

Time : 3 Hours]

[Maximum Marks : 60

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

(ii) Marks allotted to each question are given in the right-hand margin.

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

1. Define the following : **[4 × 1 = 4]**

- a) Literals
- b) Intranet
- c) Teleconferencing
- d) MiDi

2. a) What are the utilities of Recycle Bin and Network Neighborhood in Windows? **[1]**

b) Differentiate between the following : **[3 × 2 = 6]**

- i) 3 GLs and 4 GLs
- ii) Volatile and non-volatile memory
- iii) Dial-up Connection and Leased Connection

c) Explain in brief different communication media. **[3]**

d) Name the protocol that is used to upload e-mails to a web server. **[1]**

3. a) Write a program to accept a number n and print the following series : [3]
0, 1, 1, 2, 3, 5, 8, n
- b) Name the header files to which the following built in functions belong: & give one line description of each function. [2 × 1 = 2]
i) random()
ii) puts()
- c) Which of the following cannot be used as an identifier in C++ programs?[1]
myfile, double, Break, roll-no,_123, strings
- d) What is the difference between float and double? [2]
- e) Explain the following terms with examples from C++: [2 × 2 = 4]
i) Modularity
ii) Data Abstraction
4. a) Find the syntax errors from the following program. Justify each error. [2]
void main()
{ int X=10,Y=15;
cout<<sum_val(X, Y);
return 0;
}
void sum_val(int x, int y)
{
return x+y;
}

- b) Write the output of the following program : [3]

```
int a=6;

void Print(int a)
{   if(a%4==0) cout<<::a/2<<',';
    else cout<<a*2<<endl;
}

void main()
{
    for(int x=2; x<=11; x++)
        Print(x);
    cout<<a * x<<endl;
}
```

- c) Write a function VALIDATE in C++ which accepts an alphabet as an argument and print whether it is in upper case or in lower case. [3]
- d) Write a C++ statement to print “Hello” on screen, without using semicolon.[1]
- e) What is the difference between !and|| operators? Give example in support of your answer. [2]

5. a) Define a class Mobile in C++ with the following descriptions : [3]

Private members:

m_code, m_type and m_os_name of type string

m_mrp_value, m_discount and m_sale_price of type float

Public Members:

- i) A constructor to assign initial values of m_code with “MCODE01”, m_type with “Tablet”, m_os_name with “Android”, m_mrp_value, m_discount and m_sale_price with 0.
- ii) A function GetData() to input the values of the all data members.
- iii) A function to Display() which displays the content of all the data members for a Mobile.

- b) Consider the following class definition and answer the questions that follow.[3]

```
class Film
{
    int Film_Id, Film_Name, LeadRoles;

    public:

    char LeadRoleInMale[30], LeadRoleInFemale[30];

    Film( );

    void Accept( );

    void Display( );

};

class Commercialfilm::public Film
{
    int No_of_songs;
    float Cost_per_song;
    protected:
    int Type_code;
    public:
    char Remake;
    Commercial_film( );
    void Accept_comm( );
    void Display( );

};
```

```
class ArtFilm:private Film
```

```
{  
    char Theme[50];  
    public:  
    void Accept_art( );  
    void Display( );  
};
```

- i) What is the size of the object of class ArtFilm?
 - ii) Which data members are accessible from the member function of the class ArtFilm?
 - iii) Name the member functions, which can be accessed from the object of class ArtFilm.
- c) Write a program in C++ to find and print the second smallest number in an array of size N. [4]
- d) Predict the output of the following program : [2]

```
#include<string.h>  
  
void main( )  
{    char STR[] = "BEAUTIFUL";  
    for(int I=0; I < strlen(STR)-1; I++)  
    {    for(int J=I; J>=0; J--)  
        cout<<STR[J];  
        cout<<endl;  
    }  
}
```

6. a) Given a binary file “ELECTION.DAT”, containing records of the given class Election.

```
class Election
```

```
{
```

```
    int ward_no ;
```

```
    char candidate[20];
```

```
    public:
```

```
    void input( )
```

```
    {
```

```
        cin>>ward_no>>candidate;
```

```
    }
```

```
    void output( )
```

```
    {
```

```
        cout<<ward_no<<candidate;
```

```
    }
```

```
    char* ret_candidate( )
```

```
    {
```

```
        return candidate;
```

```
    }
```

```
};
```

[3]

Write a function to read a file ELECTION.DAT to print only those records whose name begin with “A”.

- b) Differentiate between ios::out, ios::app, ios::atr and ios::in. [2]
- c) Give the C++ statements to do the following : [2]
- i) Assign a memory dynamically to a integer pointer.
- ii) Declare a character pointer
- d) Define typedef. [1]
- e) Define a structure Date with members day, month, year. Write a function Equal(d1, d2) which returns 1 if both dates d1 and d2 are same, otherwise 0 is returned. [2]

