11th COMPUTER SCIENCE
PUBLIC EXAMINATION MARCH 2019
ANSWER KEY

1-Marks

Q.NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANS	A	B	C	C	D	C	C	D	A	B	A	B	C	D	A

2-Marks

Q.NO	ANSWER	MARKS
16	• **Impact printers** print with striking of hammers or pins on ribbon. These printers can print on multi-part (using carbon papers) by using mechanical pressure. For example, Dot Matrix printers and Line matrix printers are impact printers. • A Dot matrix printer that prints using a fixed number of pins or wires. • Line matrix printers use a fixed print head for printing. Basically, it prints a page-wide line of dots.	1 ½ ½
17	The **Program counter (PC)** is a special register in the CPU which always keeps the address of the next instruction to be executed.	1
18	• It is used in computers and laptops that allow same data and applications to be accessed by multiple users at the same time. • The users can also communicate with each other. Windows, Linux and UNIX are examples for multi-user Operating System.	1 1

19	j=20, p=4 p=p*++j;
	p=4*21;
	p=84
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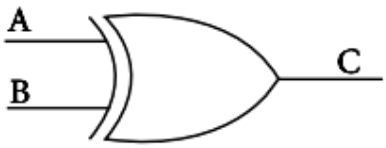
		2

20	A person or program collects login and password information from a legitimate user to illegally gain access to others' account(s) is called **Harvesting**.	2
21	data-type variable [row-size][column-size]; Example: int a[2][3];	1 1
22	**Disadvantages of OOP:** **Size:** Object Oriented Programs are much larger than other programs. **Effort:** Object Oriented Programs require a lot of work to create. **Speed:** Object Oriented Programs are slower than other programs, because of their size.	2
23	**Class member:** Class comprises of members. Members are classified as Data Members and Member functions. Data members are the data variables that represent the features or properties of a class. Member functions are the functions that perform specific tasks in a class. Member functions are called as methods, and data members are also called as attributes.	2

24	int i=5;
	while(i<=50)
	{
	cout<<i<<",";
	i+=5;
	}
	O/P: 5,10,15,.....,50
		2

3-Marks

<table>
<tr><th>Q.NO</th><th>ANSWER</th><th>MARKS</th></tr>
<tr><td>25</td><td>The logical symbol of XOR gate is
 

<table>
<tr><th colspan="2">Input</th><th>Output</th></tr>
<tr><td>A</td><td>B</td><td>C</td></tr>
<tr><td>0</td><td>0</td><td>0</td></tr>
<tr><td>0</td><td>1</td><td>1</td></tr>
<tr><td>1</td><td>0</td><td>1</td></tr>
<tr><td>1</td><td>1</td><td>0</td></tr>
</table></td><td>3</td></tr>
<tr><td>26</td><td>Network indicator - This manages network connections, allowing you to connect to a wired or wireless network.
Session indicator - This is a link to the system settings, Ubuntu Help, and session options (like locking your computer, user/guest session, logging out of a session, restarting the computer, or shutting down completely).</td><td>1
2</td></tr>
<tr><td>27</td><td>The values of variables m and n after assignment in line (1) stores 4 in variable m, 10 in variable n.
m n
4 10
The assignment in line (3) evaluates the expressions m+5 and n-2 using the current values of m and n is.
m+5, n-2
=4+5,10-2
=9,8.
and stores the values 9 and 8 in the variables m and n, respectively.
m n
9 8</td><td>1
2</td></tr>
<tr><td>28</td><td>The process of converting one fundamental type into another is called as “Type Conversion”. C++ provides two types of conversions.
• Implicit type conversion
• Explicit type conversion
An Implicit type conversion is a conversion performed by the compiler automatically. It is called as Automatic conversion.</td><td>1
2</td></tr>
<tr><td>29</td><td>Syntax of switch statement:

switch(expression)
{
case constant 1:
statement(s);
break;
case constant 2:
statement(s);
break;
.
.
.
default:
statement(s);
}

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</table>

	Purpose of switch statement : i. The switch statement is a multi-way branch statement. ii. A switch statement can only work for quality of comparisons. iii. No two case labels in the same switch can have identical values.	2

30	The structure declared within another structure is called a nested structure. Nested structures act as members of another structure and the members of the child structure can be accessed as parent structure name. Child structure name. Member name.
	Eg:
	struct dob
	{
	int date;
	char month[3];
	int year;
	};
		2
		
		1

31	The mechanism by which the data and functions are bound together into a single unit is known as **Encapsulation**. Encapsulation is about binding the data variables and functions together in class. It can also be called data binding. This encapsulation of data from direct access by the program is called **data hiding** or **information hiding.**	1 1 1
32	**The following points should be observed for defining the derived class.** a. The keyword class has to be used. b. The name of the derived class is to be given after the keyword class c. A single colon (:) d. The type of derivation (the visibility mode), namely private, public or protected. If no visibility mode is specified, then by default the visibility mode is considered as private. e. The names of all base classes (parent classes) separated by comma. **class derived_class_name : visibility_mode base_class_name** **{** **// members of derivedclass** **};**	2 1
33	**(i) int m,n; void add(); float calc();** **(ii) Memory for Objects x1 and x2 are:** **m →4bytes** } **8 bytes for each objects x1,x2.** **n →4bytes** }	1 2

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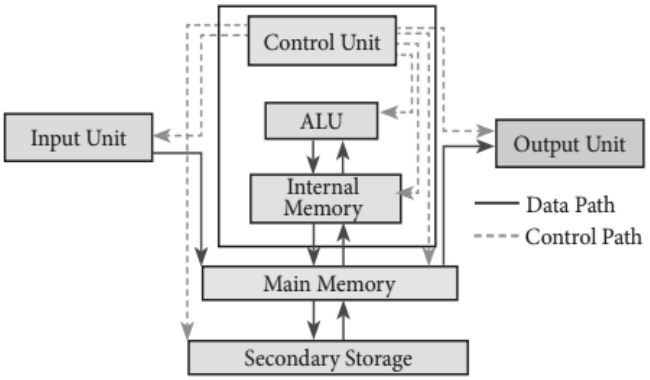
5-Marks

Q.NO	ANSWER	MARKS
34	The computer is the combination of hardware and software. Hardware is the physical component of a computer like motherboard, memory devices, monitor, keyboard etc., while software is the set of programs or instructions. Both hardware and software together make the computer system to function. Let us first have a look at the functional components of a computer. Every task given to a computer follows an Input- Process- Output Cycle (IPO cycle). It needs certain input, processes that input and produces the desired output. The input unit takes the input, the central processing unit does the processing of data and the output unit produces the output. The memory unit holds the data and instructions during the processing.	



Components of a Computer (Block Diagram) — 1

Input Unit

Input unit is used to feed any form of data to the computer, which can be stored in the memory unit for further processing. Example: Keyboard, mouse, etc. — ½

Central Processing Unit

CPU is the major component which interprets and executes software instructions. It also controls the operation of all other components such as memory, input and output units. It accepts binary data as input, process the data according to the instructions and provide the result as output. The CPU has three components which are Control unit, Arithmetic and logic unit (ALU) and Memory unit. — 1

Arithmetic and Logic Unit

The ALU is a part of the CPU where various computing functions are performed on data. The ALU performs arithmetic operations such as addition, subtraction, multiplication, division and logical operations. The result of an operation is stored in internal memory of CPU. The logical operations of ALU promote the decision-making ability of a computer. — 1

Control Unit

The control unit controls the flow of data between the CPU, memory and I/O devices. It also controls the entire operation of a computer. — ½

Output Unit

An Output Unit is any hardware component that conveys information to users in an understandable form. Example: Monitor, Printer etc.

Memory Unit

The Memory Unit is of two types which are primary memory and secondary
memory. The primary memory is used to temporarily store the programs and data when the instructions are ready to execute. The secondary memory is used to store the data permanently. The Primary Memory is volatile, that is, the content is lost when the power supply is switched off. The Random Access Memory (RAM) is an example of a main memory. The Secondary memory is non volatile, that is, the content is available even after the power supply is switched off. Hard disk, CD-ROM and DVD ROM are examples of secondary memory. — 1

(or)

(i) $(1920)_{10}$ = ($3600)_8$ get through divide the values by 8 and write the reminder from bottom to top the values. — 1

(ii) $(1920)_{10}$ = $(11110000000)_2$ get through divide the values by 2 and write the reminder from bottom to top the values. — 1

(iii) $(8BC)_{16}$= $(1000\ 1011\ 1100)_2$ get through write the equivalent 4bits binary digit values. — 1

(iv) $(6213)_8$ = $(110\ 010\ 001\ 011)_2$ get through write the equivalent 3bits binary digit values. — 1

	(v) $(255)_{10}$ = $(FF)_{16}$ through divide the values by 16 and write the reminder from bottom to top the values.	1
35	factorial(3) i=1,f=1; =f=1x1 =f=1x2 =f=2x3 =f=6 **f=6** **PREPARED BY:** **T.THIRUMALAI, M.Sc(CS).,B.Ed.,** **9750827717.** **(or)**	5
	The Distributed Operating System is used to access shared data and files that reside in any machine around the world. The user can handle the data from different locations. The users can access as if it is available on their own computer. The advantages of distributed Operating System are as follows: • A user at one location can make use of all the resources available at another location over the network. • Many computer resources can be added easily in the network. • Improves the interaction with the customers and clients. • Reduces the load on the host computer.	1 4
36	a=15, b=20; a→ 0000 1111 b→ 0001 0100 a) a&b ➔ 0000 0100 → $(4)_{10}$ b) a|b ➔ 0001 1111 → $(31)_{10}$ c) a^b ➔ 1101 1100 → $(220)_{10}$ d) a>>3 ➔0000 0001 →$(1)_{10}$ e) (~b) ➔ 1110 1011 → $(235)_{10}$ **(or)**	1 1 1 1 1

	Call by value method copies the value of an actual parameter into the formal parameter of the function. In this case, changes made to formal parameter within the function will have no effect on the actual parameter.
	Example Program:
	#include<iostream>
	using namespace std;
	void display(int x)
	{
	int a=x*x;
	cout<<"\n\n The Value inside display function (a * a):"<<a;
	}
	int main()
	{
	int a;
	cout<<"\n\n Enter the Value for A :";
	cin>>a;
	display(a);
	cout<<"\n\n The Value inside main function "<<a;
	return(0);
	}
	Output :
	Enter the Value for A : 5
	The Value inside display function (a * a) : 25
	The Value inside main function 5
		3
		2

37	The Object Oriented Programming has been developed to overcome the drawbacks of procedural and modular programming. It is widely accepted that object-oriented programming is the most important and Powerful way of creating software. The Object-Oriented Programming approach mainly encourages: **Modularization:** where the program can be decomposed into **modules**. **Software re-use:** where a program can be composed from existing and new modules. **Main Features of Object Oriented Programming** • Data Abstraction • Encapsulation • Modularity • Inheritance • Polymorphism **(or)**	3 2
	Output: Enter the number 2 The square of 2 is 4 The square of 2 is 8	5
38	a) Precedence and Associativity of an operator cannot be changed. b) No new operators can be created, only existing operators can be overloaded. c) Cannot redefine the meaning of an operator's procedure. You cannot change how integers are added. Only additional functions can be to an operator. d) Overloaded operators cannot have default arguments. e) When binary operators are overloaded, the left hand object must be an object of the relevant class **(or)**	5

	Output:
	Enter data
	Name:Raman
	Code:1305
	Experience: 25
	Display Data
	Name:Raman
	Code:1305
	Experience:25 Years
	
	#include<iostream>
	#include<string>
	using namespace std;
	class Employee
	{
	private:
	char name[20];
	int code;
	public:
	void getdata();
	void display();
		5

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```
};
class staff: public Employee
{
private:
int ex;
public:
void getdata();
void display();
};
void Employee::getdata()
{
cout<<"Name:";
gets(name);
cout<<"Code:";
cin>>code;
}
void Employee::display()
{
cout<<"Name:"<<name<<endl;
cout<<"Code:"<<code<<endl;
}
void staff::getdata()
{
Employee::getadata();
cout<<"Experience:";
cin>>ex;
}
void staff::display()
{
Employee::display();
cout<<"Experience:"<<ex<<" Years"<<endl;
}
int main()
{
staff s;
cout<<"Enter data"<<endl;
s.getdata();
cout<"Display Data"<<endl;
s.display();
return 0;
}
```

(This model program is in Book page no: 305 to 307 in Vol –II)

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