FIRST YEAR COMPUTER APPLICATION MODEL EXAMINATION, JUNE 2022
COMPUTER APPLICATION (COMMERCE)
Maximum Score : 60
Part 1
Answer any 5 Questions from 1 to 7. 1 mark Each

1. MSD of the number 2089.05 is _____
Ans : 2
2. Expand USB.
Ans : Universal Serial Bus

3. Conversion of source code into object code is called _____
Ans : Translation

4. Pick out the odd one +, %, >, *
Ans : >

5. "default" keyword is used with _____ decision making statement in C++.
Ans : **switch**

6. Unwanted electrical or electronic magnetic energy that lowers the quality of data signals is called Ans : **Noise**

7. Name any one email related protocol
Ans: SMTP, POP3

Part 2

Answer any 9 Questions from 8 to 19. 2 marks Each

8. List any four characteristics of computer.
Ans : Speed, Accuracy, Diligence, Versatile, Huge Memory, No IQ, No Decision making capacity

9. Write the names of any four registers in CPU.
Ans: Accumulator, Memory Address Register (MAR), Memory Buffer Register(MBR), Instruction Register(IR), Program Counter (PC)

10. What are the major functions of operating system.
Ans : File management, Memory management, Process management, Device management

11. Define algorithm. List any two characteristics of algorithm.
Ans : Finite sequence of instructions or step by step procedure to solve a problem.

Characteristics of Algorithm (Any Two)

1) Algorithm should begin with instruction(s) to accept inputs.
2) Variables must be used for inputting data and assigning values or results.
3) All instructions should be precise and unambiguous.

4) Each instruction must be sufficiently basic.

5) The total time to carry out all the steps in the algorithm must be finite.

6) After performing the instructions given in the algorithm, the desired results (out-puts) must be obtained.

12. Define tokens in C++. Name any two tokens.

Ans : Tokens are Fundamental Building Blocks of the Program.

Tokens in C++ are(Any Two):

Keywords, Identifiers, Literals, Punctuators, Operators

13. Write any four fundamental data types in C++.

Ans: char, int, float, double and void

14. Write the syntax of variable declaration in C++.

Ans : <data type> <variable name> ;

int a;

15. What are the elements of a loop statement in C++?

Ans: initialisation, test expression, update statement, body of loop

16. Compare dialup and mobile broad brand connections.

Ans :

Dial Up Connection	**Mobile Broadband**
Slow Connection Speed upto 54 kbps Require Dialing to ISP Uses telephone line exclusively Uses dialup modem	Wireless Internet access using mobile phone Uses USB wireless modem Uses the cellular network of mobile phones for data transmission. 2G,3G,4G etc

17.Explain any two advantages of Social Media

Ans : **Bring people together:** Social networking allows people to find long-lost childhood friends and make new ones.

Plan and organise events: These sites help users to organise and participate in events.
Business promotion: Social media offers opportunities for businesses to connect with customers, implement marketing campaigns, manage reputation, etc.
Social skills: These sites allow people to express their views over a particular issue and become an agent for social change.

18. Explain EPS.

Ans : **Electronic Payment System (EPS):** A system of financial exchange between buyers and sellers in an online environment is called an **Electronic Payment System (EPS).** The financial exchange is facilitated by a digital financial instrument (such as credit/debit card, electronic cheque or digital cash)backed by a bank and/or an intermediary.

19. List any four e-Learning tools.

Ans : Electronic Book Reader, e - Text, Online Chat, e - Content, Educational TV Channel.

Part 3

Answer any 9 questions from 20 to 32. # marks each.

20. Find the octal and hexadecimal equivalent of number $(101010111)_2$

Ans :

Octal

101 010 111

5 2 7

$(527)_8$

Hexadecimal

1 0101 0111

0001 0101 0111

1 5 7

$(157)_{16}$

21. Explain three types of integer representation.

a)Representation of integers

i.Sign and magnitude representation : first bit from left (MSB) is used for representing sign of integer and remaining 7-bits are used for representing magnitude of integer. For negative integers sign bit is 1 and for positive integers sign bit is 0.

ii.1's complement representation : first find binary equivalent of absolute value of integer. If number of digits in binary equivalent is less than 8, provide zero(s) at the left to make it 8-bit form. 1's complement of a binary number is obtained by replacing every 0 with 1 and every 1 with 0.

iii.2's complement representation : first find binary equivalent of absolute value of integer and write it in 8- bit form. If the number is negative it is represented as 2's complement of 8-bit form binary. If the number is positive 8-

bit form binary itself is the representation. 2's complement of a binary number is calculated by adding 1 to its 1's complement

22. Compare RAM and ROM

RAM	ROM
• It is faster than ROM • It stores the operating system, application programs and data when the computer is functioning. • It allows reading and writing. • It is volatile, i.e. its contents are lost when the device is powered off.	• It is a slower memory • It stores the program required to boot the computer initially • Usually allows reading only. • It is non-volatile, i.e. its contents are retained even when the device is powered off.

Comparison of RAM and ROM

23. What is the use of documentation in a Program? . List the two types of documentations.

Ans : Information regarding the program for understanding its working.
Internal documentation (comments)
External documentation

24. Identify the type of literals from the followings. 25, 'A', "HELLO"

Ans : 25 - integer literals
'A' – Character literals
" HELLO" – String literals

25. What is a variable? Identify the name and content of variable from the following diagram.

1000	1001	1002	1003
		25	
		Num	

Ans : variable is named memory location used for storing values.
Name : num
Content : 25

26. Write the structure of C++ program

```
#include<iostream>
using namespace std;
int main()
{
    cout<<"Hello, Welcome to C++";
    return 0;
}
```

27. Explain type conversions in C++ with suitable examples.

Type conversion means converting the data type of one operand into another. Type conversion can be done in two ways.

1. Implicit type conversion (Type promotion) : Data type is converted by compiler from lower data type to higer data type .

Eg :

For example, consider the expression `5 / 2 * 3 + 2.5` which gives the result `8.5`. The evaluation steps are as follows:

Step 1: 5 / 2 → 2 (Integer division)

Step 2: 2 * 3 → 6 (Integer multiplication)

Step 3: 6 + 2.5 → 8.5 (Floating point addition, 6 is converted into 6.0)

2.Explicit type conversion (Type casting) : Programer can decide the data type of the result of evaluation.

```
int p=5, q=2;
        float x, y;
        x=(float)p/q; (here result will be 2.5)
```

28. Differentiate switch and else if ladder.

switch statement	else if ladder
• Permits multiple branching.	• Permits multiple branching.
• Evaluates conditions with equality operator only.	• Evaluate any relational or logical expression.
• Case constant must be an integer or a character type value.	• Condition may include range of values and floating point constants.
• When no match is found, `default` statement is executed.	• When no expression evaluates to True, `else` block is executed.
• `break` statement is required for exit from the `switch` statement.	• Program control automatically goes out after the completion of a block.
• More efficient when the same variable or expression is compared against a set of values for equality.	• More flexible and versatile compared to `switch`.

29. Define data communication. List the basic elements for building data communication system.

Data communication is the exchange of digital data between any two devices through a transmission medium.

Message : It is the information to be communicated. Major forms of information include text, picture, audio, video, etc.

Sender :The computer or device that is used for sending messages is called the sender, source or transmitter.

Receiver :The computer or device that receives the messages is called the receiver.

Medium : It is the physical path through which a message travels from the sender to the receiver. It refers to the way in which nodes are connected.

Protocol : The rules under which message transmission takes place between the sender and the receiver is called a protocol.

30. Write short notes on:

a) Switch

b) Router

c) Gateway

Ans:

Switch : An intelligent device that connects several computers to form a network.Stores the addresses of all the devices connected to it in a table.

Router :A router is a device that can interconnect two networks of the same type using the same protocol.

Gateway : A gateway is a device that can interconnect two different networks having different protocols.

31. What are the hardware and software requirements for internet connection

Ans :

- A computer with Network Interface Card (wired/wireless) facility and an operating system that supports TCP/IP protocol.
- Modem
- Telephone connection
- An Internet account given by an Internet Service Provider (ISP)
- Software like browser, client application for e-mail, chat, etc.

32. What is e - Governance? Name the types of e - Governance.

e-Governance is the application of ICT for delivering Government services to citizens in a convenient, efficient and transparent manner.

Types of e-Governance

Government to Government (G2G)
Government to Citizens (G2C)
Government to Business (G2B)
Government to Employees (G2E)

Part IV
Answer any 2 questions from 33 to 36. 5 Marks each.

33. a. What is e-Waste?
b. Briefly explain the e-waste disposal methods.
c. List the four different approaches of green computing.

a. e-Waste or Electronic waste may be defined as discarded computers, electronic equipments, mobile phones etc. It contains some toxic substances which can cause health problems.

b. e-waste disposal methods :

Reuse: It refers to second-hand use or usage after the equipment has been upgraded or modified.

Incineration: It is the process of burning e Waste at high temperature in in the range of 900 to 1000 degree Celsius.

Recycling of e-Waste: It is the process of making new products from existing e-Waste.

Land filling: e-waste buried deep under the soil.

c . Four different approaches of green computing

Green design:

Designing energy-efficient and eco-friendly computers and other electronic devices.

Green manufacturing:

Minimising waste during the manufacturing of computers and other components.

Green use:

Minimising the electricity consumption of computers and peripheral devices.

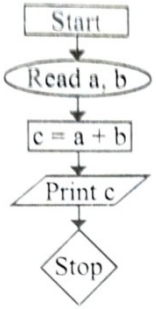
Green disposal:

Reconstructing used computers or appropriately disposing off or recycling unwanted electronic equipment.

34. a. What is debugging?

b. list any two programming errors.

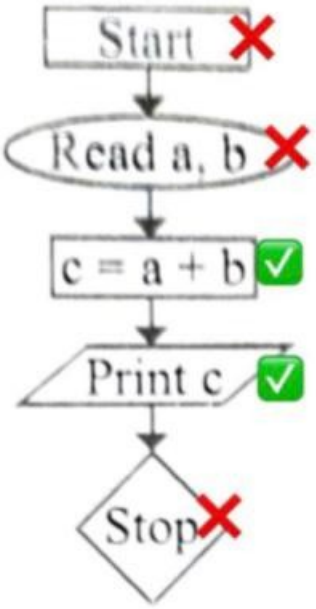
c. Find and correct errors in the flow chart.

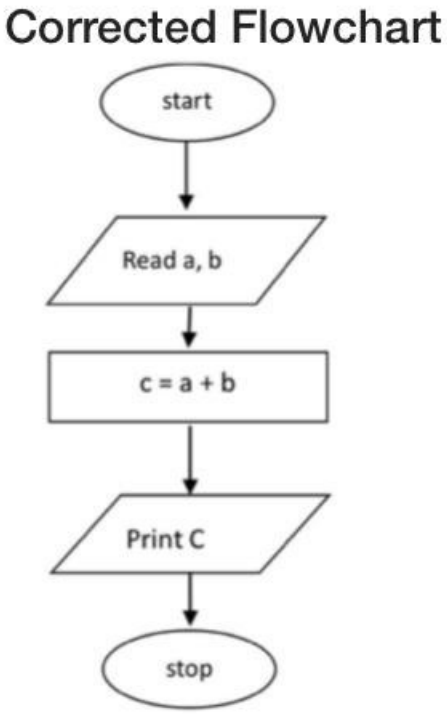


a. Debugging : Finding and correcting errors in the program.

b. Programming errors : Syntax error, Logical error, Run time error

c.





35 . a) Give examples for entry controlled loops

b) Compare while and do - while loop

a) for loop, while loop

b)

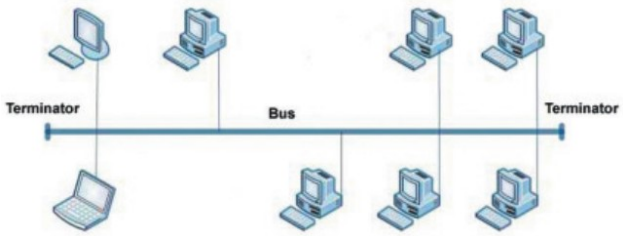
while loop	do...while loop
Entry controlled loop	Exit controlled loop
Initialisation before loop definition	Initialisation before loop definition
No guarantee to execute the loop body at least once	Will execute the loop body at least once even though the condition is False

36. a) Define topology. b) Explain any three network topologies.

a) The way in which the nodes are physically interconnected to form a network is called a Topology.

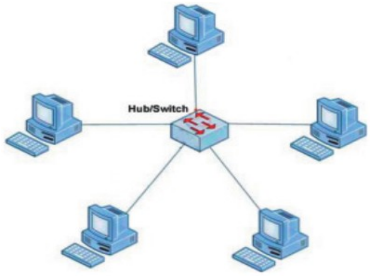
b) **1.Bus topology :** all the nodes are connected to a main cable called bus.

- Easy to install.
- Requires less cable length and hence it is cost effective.
- Failure of cable (bus) or terminator leads to a break down of the entire network.
- Only one node can transmit data at a time.



2 Star topology

•In star topology each node is directly connected to a hub/switch.
• Easy to install.
• Failure of hub/switch leads to failure of entire network.
• Requires more cable length compared to bus topology.



3.Ring topology

•All nodes are connected in form of a ring .
•Data travels only in one direction in a ring.
•Requires less cable length and hence is cost effective.
•If one node fails, entire network will fail. Addition of nodes is difficult.

4 Mesh topology

• Every node is connected to other nodes. Expensive because extra cables are needed.

• Network will not fail even if one path between the nodes fails.

• Very complex and difficult to manage.