SECOND YEAR HIGHER SECONDARY EXAMINATION 2025

FIRST TERM

ANSWER KEY

SUBJECT: COMPUTER APPLICATION (Commerce)

PART - I

(Answer any 5 questions, each carries 1 score.)

1. Which jump statement transfers control to a labeled statement?

Answer: goto

2. Which among the following is the ternary operator in C++?

(a) == (b) ?: (c) && (d) !=

Answer: (b) ?:

3. The first element in an array named list can be accessed by

(a)list(0) (b) list[0] (c)list.0 (d) list{0}

Answer: (b) list[0]

4. pick the library function that terminates a C++ program

(a)break (b) exit() (c)return (d) pow()

Answer: (b) exit()

5. In the hexadecimal color code #FF0000, the red component is:

(a) 00 (b) FF (c) FF00 (d) not present

Answer: (b) FF

6. The default port number associated with SMTP is _____

Answer: 25

PART - II

(Answer any 9 questions, each carries 2 scores.)

7. Give the output:

(a)

```
 for(int i=1;i<=10;i++)
{ if(i%5==0)  break;
```

cout<<i<<" "; }

Answer: 1 2 3 4 (Loop breaks when `i` is 5)

(b) for(int i=1;i<=10;i++)

{ if(i%5==0) continue;

cout<<i<<" "; }

Answer: 1 2 3 4 6 7 8 9 (Skips printing only when `i` is 5 and 10)

8. Match the data type in first column with its use in second column

Answer:

- float → decimal values
- double → high-precision decimals
- char → Storing characters
- void → Function that returns nothing

9. Name the Essential tags of an HTML document

Answer:

- <html>
- <head>
- <title>
- <body>

10. Give array declarations for the following:

(a) a float array **prices** to store the cost of 12 items in a shop

Answer: float prices[12];

(b) a character array **initials** to store 20 alphabets

Answer: char initials[20];

11. if you declare

char title[15] = "Festival";

(a) What is the total memory allocated?

Answer: 15 bytes

(b) How many unused bytes are left?

Answer: 6 bytes (15 total - 8 for 'F','e','s','t','i','v','a','l' - 1 for '\0')

12. Fill in the blanks to find the largest among 10 values in the array, price

Answer:

large = price[0];

for (i = 1 ; i < 10 ; i++)

{

```
if (price[i]>large)
   large = price[i]; }
```

13. Fill in the blanks in the following table:

Answer:

Prototype	**Arguments**	**Return**
float sum(int,int)	Int,int	Float
void disp(float)	Float	None

14. What is a preprocessor directive? Give one example and state its purpose.

Answer: A preprocessor directive is a command for the C++ preprocessor, which processes the source code before compilation.

Example: `#include <iostream>`. Its purpose is to include the contents of the iostream header file, which is necessary for input/output operations.

15. Compare the functions `strcmp()` and `strcmpi()` with example.

Answer: `strcmp("Hello", "hello")` would return a non-zero value (case-sensitive, so they are different). `strcmpi("Hello", "hello")` would return `0` (case-insensitive, so they are considered the same).

16. Name any two attributes each:

(a) <IMG>

Answer: src, alt

(b) <HTML>

Answer: lang, dir

17. Define:

(a) Web server

Answer: A web server is a powerful computer which is always switched on and connected to a high bandwidth Internet connection.

(b) Data center

Answer: A data center is a dedicated physical location used for storing, processing and serving large amounts of mission-critical data to their clients.

18. Expand the following:

(a) DNS

Answer: Domain Name System

(b) HTML

Answer: HyperText Markup Language

PART - III

(Answer any 9 questions, each carries 3 scores.)

19. int i = 1;

while(i > 3)

{ cout << i;

i++; }

(a) How many times will the loop body execute? Justify.

Answer: 0 times. The condition i > 3 (1 > 3) is false initially, so the loop body is never executed.

(b) Modify this to a do-while version.

Answer:

```
int i = 1;
do
{
   cout << i;
   i++;
} while (i > 3);
```

(c) What is the output of the modified loop?

Answer: 1 (The do-while loop executes the body once before checking the condition).

20. Convert to switch case structure:

Answer:

```
switch(choice)
{
   case 'a': cout << "Academics"; break;
   case 'b': cout << "Sports"; break;
   default: cout << "Next slot";
}
```

21. grade = (score>50)?'B':'A';

(a) What will be the value stored in grade if score is 55?

Answer: 'B'

(b) Rewrite this using any other decision statement.

Answer:

```
if (score > 50)
   grade = 'B';
else
   grade = 'A';
```

22. Write a nested for loop structure to create the following output:

```
1
2 2
3 3 3
```

Answer:

```
for (int i = 1; i <= 3; i++)
{
   for (int j = 1; j <= i; j++)
   {
      cout << i << " ";
   }
   cout << "\n";
}
```

23.

```
void modify(int x)
{ x = x + 10; }
int main()
{ int a = 5;
modify(a);
cout << a; }
```

(a) What will be the output?

Answer: 5

(b) Justify your answer.

Answer: Call by value method.The parameter x is passed by value. A copy of a's value (5) is sent to the function. Modifying the copy x inside the function does not affect the original variable a in main().

24.
```
int a,b;
void show(int p)
{ cout << p*p; }
int main ()
{ int m=5;
show(m); }
```

(a) Identify the local and global variables.

Answer:

Global: a, b

Local: p (parameter in show), m (in main)

(b) State the scope and lifetime of each.

Answer:

Global (a, b**):** Scope is the entire program. Lifetime is the entire runtime.

Local (m**):** Scope is within main(). Lifetime is until main() ends.

Local (p**):** Scope is within show(). Lifetime is for the duration of the show() function call.

25. Define modular programming? List two merits.

Answer: Modular programming is a programming in which breaking large program into smaller sub programs .

Merits:

a. Reduces the size of the program
b. Less chance of error occurrence
c. Reduces programming complexity
d. Improves reusability

26. Explain the step-by-step method of how DNS resolves an IP address.

Answer:

1. The browser first searches its local memory (mini cache).
2. If it is not found in the browser cache, it checks the operating system's local cache.
3. If it is not found there, it searches the DNS server of the local ISP.
4. If it is not found there, ISP's DNS server initiates a recursive search starting from the root server till it receives the IP address.
5. DNS server returns IP address to the browser.
6. The browser connects to the web server using the IP address.

27. State any 3 points that distinguish a static web page from a dynamic web page.

Answer:

Static web page	Dynamic web page
The content and layout of a web page is fixed.	The content and layout may change during run time.
Static web pages never use databases.	Database is used to generate dynamic content through queries.
Static web pages directly run on the browser and do not require any server side application program.	Dynamic web page runs on the server side application program and displays the results.
Static web pages are easy to develop.	Dynamic web page development requires programming skills.

28. int calc(int a,int b=4,int c=10)

{ return a*b*c; }

Predict the result of the function calls

(a) calc()

Answer: Error. The first parameter a has no default value and must be provided.

(b) calc(2,3)

Answer: 2 * 3 * 10 = 60 (Uses default value for c)

(c) calc(1,2,3)

Answer: 1 * 2 * 3 = 6 (Uses all provided values, ignores defaults)

29. Compare the result of the two expressions:

(a) cout << 3 / 2;

Answer: 1 (Integer division, fractional part is truncated)

(b) cout << 3 / 2.0;

Answer: 1.5 (Floating-point division because one operand is a double)

PART - IV

(Answer any 2 questions, each carries 5 scores.)

30. C++ program to input a number and display its multiplication table with 10 rows.

Answer:

```
#include <iostream>
using namespace std;
int main()
{
   int num;
   cout << "Enter a number: ";
```

```
    cin >> num;
    cout << "Multiplication Table of " << num << ":\n";
    for (int i = 1; i <= 10; ++i) {
        cout << num << " x " << i << " = " << (num * i) << "\n";
    }
    return 0;
}
```

31. Name the C++ built-in function and header file.

Answer:

Task	Function	Header File
(a) Console function to input a string	gets()	<cstdio>
(b) Check if a character is a number	isdigit()	<cctype>
(c) Find the absolute value of a floating number	fabs() / abs()	<cmath>
(d) Join two strings	strcat()	<cstring>
(e) Convert a character to upper case	toupper()	<cctype>

32. Write an HTML program to create a web page with blue background and white coloured letters. Include the following features

(a)Give a heading " Onam " in the largest size at the center of the page.
(b)A scrolling text "The harvest festival"
(c) Insert an image "fest.jpg" to the left of the page
(d)Add a text "Join the festivities" in a bold, underlined format.

Answer:

```
<HTML>
<HEAD>
   <TITLE>Onam Celebration</TITLE>
</HEAD>
<BODY bgcolor="blue" text="white">
   <CENTER>
      <H1>Onam</H1>
   </CENTER>
   <MARQUEE>The harvest festival</MARQUEE>
   <IMG src="fest.jpg" align="left">
   <B><U>Join the festivities</U></B>
</BODY>
</HTML>
```