Question Types and Examples

PART A QUESTION TYPES

1. Multiple Choice Questions

- Selection type.
- Each question carries 1 mark.
- Each question will have 4 choices for answer.
- "None of the above" as one of the choices is to be avoided.
- **Examples:**

1) The domain name in a URL refers to the
(A) protocol
(B) file name
(C) server
(D) directory

2) ROM means
(A) Read Once Memory
(B) Read Only Memory
(C) Read On Memory
(D) Read Other Memory

2. State TRUE or FALSE

- Selection type
- Each question carries 1 mark.
- **Examples:**

1) State True or False
The increment operator ++ does not work with float variable.
2) State True or False
Cookie is information that is exchanged between one specific Browser and one specific Server exclusively.

3. Match the following

- Selection type
- Each question carries 1 mark.
- A word / phrase is given in column X. A list of descriptions is provided in column Y. The

candidate has to match the word / phrase in column X to the nearest matching description in column Y.

- The list in column Y can have 2/3 descriptions only one of which is the best match for the entry in column X.
- **Examples:**

1) Match words and phrases in column X with the closest related meaning/ word(s) / phrase(s) in column Y.

X	**Y**
Returns initialized storage in run-time	calloc ( )
	malloc()

4. Fill Up the Blanks using Given List

- Selection type.
- Each question carries 1 mark.
- A list of words / phrases is provided. The candidate has to fill up the blank using a word / phrase from the given list only.
- The list can have 2 to 3 words / phrases, only one of which is correct
- **Examples:**

1) Fill up the blanks using a word / phrase from the list: URL, HTTP

_____ is an acronym for the address of a document on the Internet.

2) Fill up the blanks using a word / phrase from the list: a character, an integer

File Descriptor is_____

PART B QUESTION TYPES

1. Short question

- Question is for specified marks (generally 5)
- Can be Supply type or Selection type. Any one single type from Types I to V described above is to be used.
- The entire question must be related to a single competency or at most 2 competencies from the specified part of the syllabus.
- **Example 1**: With reference to Pointers, select the correct option for each of the following:

i) A pointer is

A. A keyword used to create variables

B. A variable that stores address of an instruction

C. A variable that stores address of other variable

D. All of the above

ii) What is (void*)0?

A. Representation of a pointer to character 'o'

B. Representation of void pointer

C. Error

D. Representation of a pointer to character '0'

iii) Can you combine the following two statements into one?

```
char *p;
p = (char*) malloc(100);
```

A. char p = *malloc(100);

B. char *p = (char) malloc(100);

C. char *p = (char*)malloc(100);

D. char *p = (char *)(malloc*)(100);

iv) If a variable is a pointer to a structure, then which of the following operator is used to access data members of the structure through the pointer variable?

A. .

B. &

C. *

D. →

v) The operator used to get value at address stored in a pointer variable is

A. *
B. &
C. &&
D. ||

- **Example 2:** With reference to the Mail Merge operation in MS-Word, Fill up the blanks:

The document that contains information that is to be identical in each copy is called ----------. After clicking Select Recipients, you have clicked Type a new list as you don't have a data file yet. You then used the form that opened to create your list. The list is saved as a file that you can reuse. This extension of this file will be ----- . While editing the recipient list, you can combine multiple criteria for filtering, using ------ . ---------- is an example for a file that can't be a data source. ---------- is an example for a file that can be a data source.

2. Use features of package question

- Question is for specified marks (generally 5)
- The question is on the use of some features of a specific application software package included in the syllabus. Examples are: MS-Word, MS-Excel, MS-Office
- Some structured data is assumed to be given (for example, in an MS-Excel sheet, or in an MS-Access Table, or in a HTML Table etc). A specific value based on this data is required.
- The question may be asked for the actual value or a formula to compute the value, or a query to get the value etc.
- Can be Supply type or Selection type. Any one single type from Types I to V described above is to be used.
- The entire question must be related to a single competency or at most 2competencies from the specified part of the syllabus.
- **Example 1:** Assume the following :

Cell A1,B1,C1,D1, E1 consist of Headers : Candidate Name, Aptitude, Round 1 , Round 2, Total Score.
Cell A2 thru A101 : 100 Candidate names
Cell B2 thru B101, C2 thru C101, D2 thru D101 : Scores of candidates in Aptitude test, Round 1 & Round 2 interview out of 100 each.
Write Excel Formula for the following operations using built-in functions :
[Note : You can assume that the formula in cell E2 will be copied into cells E3 thru E101. Similar assumption can be made for other formulas in (iv) and (v) also.]

i) Calculate Total score of each candidate and store in cells E2 thru E101 respectively(Formula to be written in cell E2): _____

ii)Count the number of candidates with total score more than 240 and store in cell E105. The formula is : _____

iii) Find the Highest score in aptitude test and store in cell E106. The formula is: _____

iv) Calculate Average score of each candidate and store in cells F2 thru F101 respectively(Formula to be written in cell F2):_____

v) Declare the result for each candidate as "Selected" or "Rejected" in cells G2 thru G101 respectively based on the criteria : If the average score is greater than or equal to 85 then "selected". If the average score is below 85 then "Rejected":_____

(Formula to be written in cell G2)

3. Reorder the sequence question

- Question is for specified marks (generally 5)
- A sequence of actions is provided.
- The specific objective that the sequence of actions is supposed to achieve is also specified.
- However, the given sequence of actions may not be the correct sequence though the individual actions are all correct.
- The actions in the given list need to be reordered into correct sequence to achieve the specified objective.
- **Example 1:** The steps involved in creating Digital Video from Analog source are listed below. But the steps may not be in the correct order. Indicate the correct sequence of steps by marking the correct step number, 1 to 5, against each step.

1) The video source is played and the analog signal is sent to the video card.

2) Digitized video is processed, using suitable tool, to add special effects.

3) A video source such as a video camera, VCR, or TV is connected to a video capture card in a computer.

4) The video file is compressed in to suitable format like MPEG4.

5) The sound from the video source is digitized using the video capture card.

4. Compute question

- Question is for specified marks (generally 5)
- Some data is given and the question is that some specific value or values based on the given data need to be computed.
- The entire question must be related to a single competency or at most two competencies from the specified part of the syllabus.

- **Example 1:** It is given that the playback frequency for CD-quality audio is 22,050 Hz. What should be the sampling frequency according to Nyquist criterion? _____

What would be the resulting bit rate in Kbps, for a mono channel, if we assume 16-bit quantization? _____

What would be this value for stereo but with 8-bit quantization? _____

5. Complete the program question

- Question is for specified marks (5/ 10 marks)
- A program(C, HTML) with some blanks is provided. Authors should provide the blanks such that it permits only one unique answer. If the blank can have multiple values, authors are supposed to provide sufficient auxiliary information to avoid such cases. The blanks in the program need to be filled up appropriately to make it a correct and complete program that implements the specified objective. For example: A variable k is supposed to be incremented in some program. If a single blank is given, student can write k++ or k = k+1 or ++k. To avoid such situation, author can give blank as k = _____, so that student has only one way to answer the question.
- **Example 1:** The following function is to implement Selection Sort. However, there are some blanks in the program. Fill up the blanks to make the function a complete and correct function that implements Selection Sort:

```
// function to implement Selection Sort
// list is an array of n integer elements
// the array list and its size n are passed as parameters
// the elements of list are sorted into ascending order

Void selectSort (int list [ ], int n)
{
int j, k, min, temp;
for (j = 0; j<n-1; j++) {
min = _____;
for (k = ____ ; k <n; k++)
if (list[k] ____ list[min])
min = k;
temp = list[j];
list[_____] = list[_____];
list[min] = temp;
}
```

}

6. Correct and complete the program question

- Question is for specified marks (5/ 10 marks)
- A program with some errors is provided. The errors could be semantic (logical) or syntactic ones only. The specific objective that the program is to implement is also specified. The errors in the program need to be corrected appropriately to make it a correct and complete program.
- Authors will provide complete program with blanks. Each blank need to filled with incorrect answer. The correct answer corresponding to each block need to be provided by the author.

Example 1: // function to implement Selection Sort

```
// list is an array of n integer elements
// the array list and its size n are passed as parameters
// the elements of list are sorted into ascending order
Void selectSort (int list [ ], int n)
{
int j, k, min, temp;
for (j = 0; j<n-1; j++) {
min =j+1;
for (k = j+1; k <n-1; k++)
if (list[k] > list[min])
min = k;
temp = list[j-1];
list[j-1] = list[min];
list[min] = temp;
}
}
```

7. Modify code question

- Question is for specified marks (5/ 10 marks)
- A program is given along with its purpose. A contiguous block of code fragment in the program needs to be modified in accordance with the given requirements. Author needs to give explicit list of keywords which need to exist in the modified code fragment for it to be correct answer.
- **Example 1:** The values of 2 integer variables x and y can be interchanged using the following program:

```
 int main()
{
  int x = 10, y = 5;
```

```
  x = x + y;
  y = x - y;
  x = x - y;
  printf("After Swapping: x = %d, y = %d", x, y);
  return 0;
}
```

Modify the above code replacing the sequence of +/- statements with bit-wise XOR statements and any other statements necessary. The purpose of the modified code remains same as earlier.

8. Programming question

- Question is for specified marks (5/ 10 marks)
- A complete program in accordance with the given requirements is expected from students.
- Please ensure that any C program which is asked does not produces a fixed output, instead it should depend on the one or two parameters.
- **Example 1:** Write a 'C' program to generate first n numbers.
- **Example 2:** Write the HTML code for creating the following layout:

THE EURO CUP RESULTS		
Game	**Brazil**	**Germany**
1	3	2
2	4	1
3	0	8
4	8	7
5	2	1

9. Compare Question

- Question is for specified marks (generally 5)
- Two or more programs, products, systems need to be compared based on the given criteria.
- **Examples:**

1) Compare Laser Printers with Dot Matrix Printers with respect to the following criteria (for each criterion, write the type of Printer to be selected; if you reason that both are equal with respect to a criterion, write "Either"):

- Printing Speed
- Printing powerful graphics

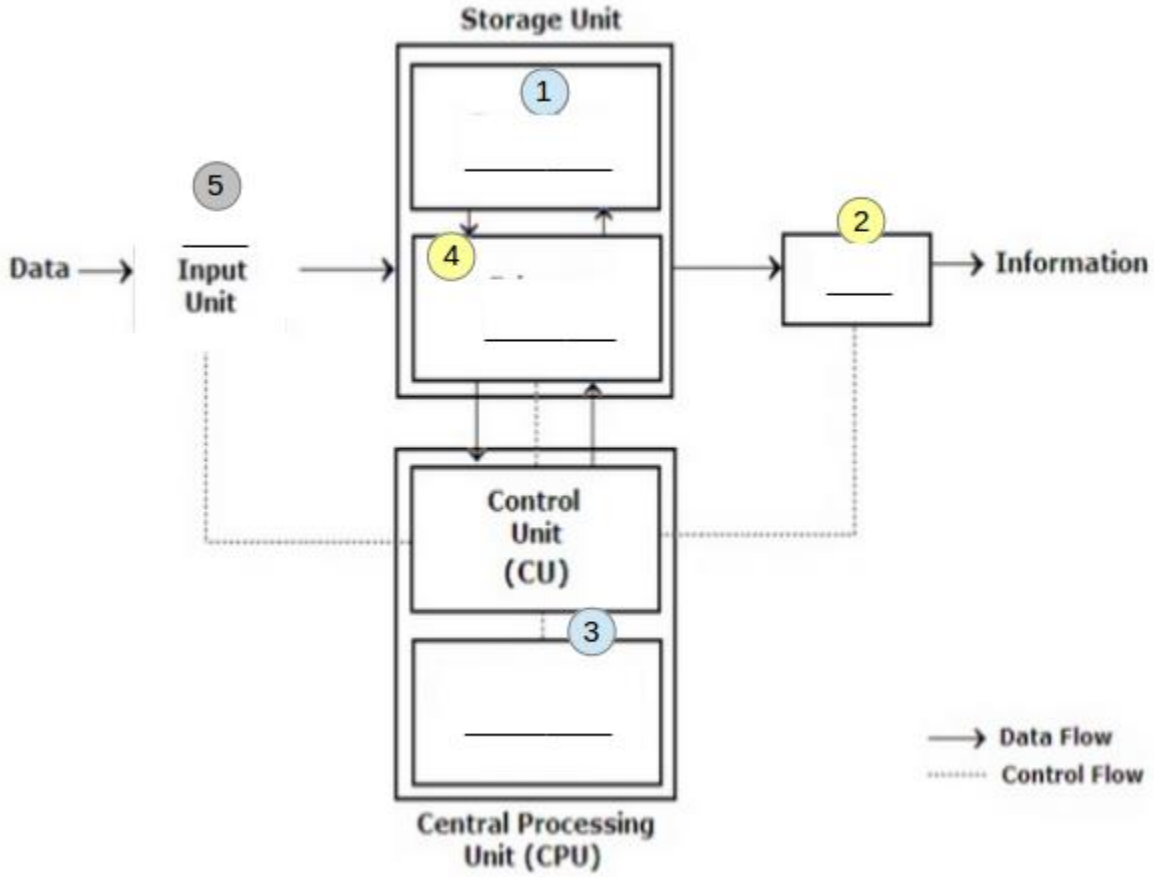
- Printing multiple copies using carbon paper
- Printing in color
- Printing on continuous stationery

2) Compare Insertion Sort with Merge Sort with respect to the following criteria (for each criterion, write the Sorting Algorithm preferred; if you reason that both are equal with respect to a criterion, write "Either"):

- Number of comparisons required in the worst case
- Suitability for sorting very large amount of data
- Suitability for sorting very small amount of data
- Additional memory required

10. Complete the block diagram question

- Question is for specified marks (generally 5)
- Block diagram with certain number of blanks(block type/ block labels) will be provided to students and they will be asked to fill those blanks. Block type can be input output, process, decision, summation, etc.
- Corresponding to each blank, any one single type from Types I to V described above is to be used.
- The specific system that the diagram is supposed to represent is also specified.
- **Example 1:** The figure shown below is supposed to be the block diagram showing the basic organization of a computer system. There are five blanks in the block diagram. Complete them.



Label	Expected response
1	Secondary storage
2	↑
3	Arithmetic and logical unit
4	→
5	▭

11. Complete the flow chart question

- Question is for specified marks (generally 5)
- Flow chart with certain number of blanks(block type/ block labels) will be provided to students and they will be asked to fill those blanks. Block type can be input output,

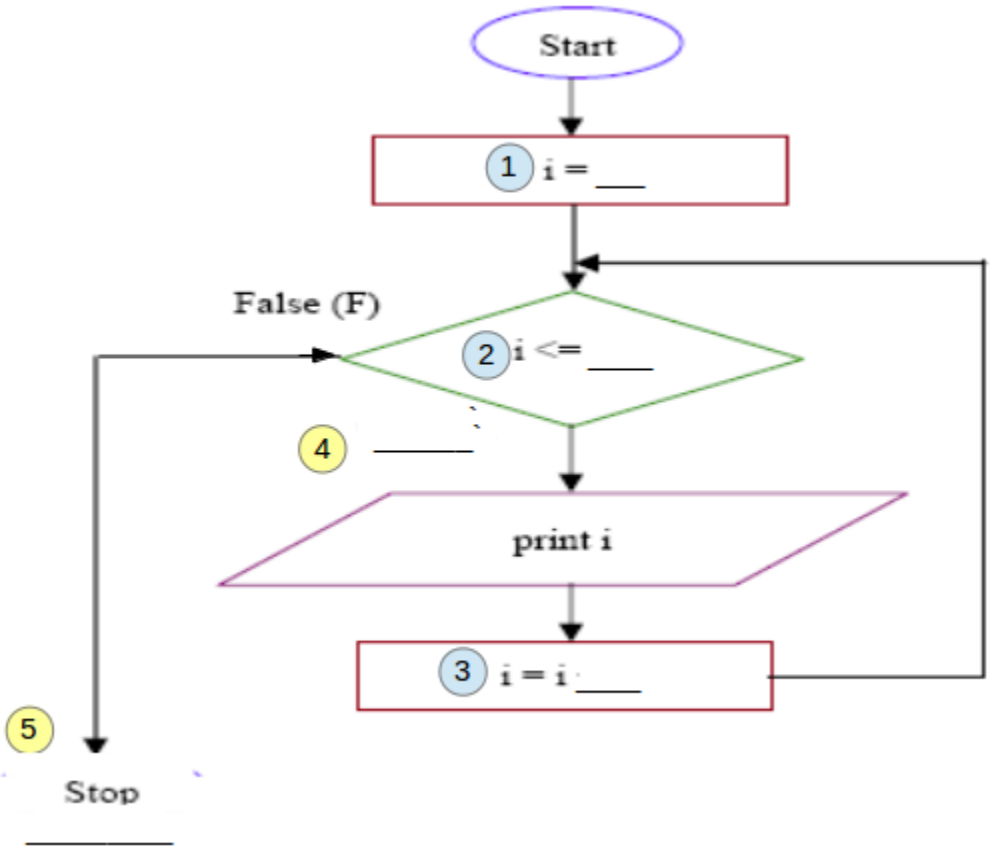
process, decision, summation, etc.

- Corresponding to each blank, any one single type from Types I to V described above is to be used.
- The specific objective that the flow chart is supposed to achieve is also specified.
- Please use blue color for block text box, gray color for block type and yellow color for connector labels.
- **Example 1:** The flow chart shown is for the following code snippet:

```
for(i = 1; i <= 2; i = i + 1)
print("%d\t", i);
```

Flow chart has five blanks marked from 1 to 5. Write the correct option for each one of them so that flow chart performs the desired action.

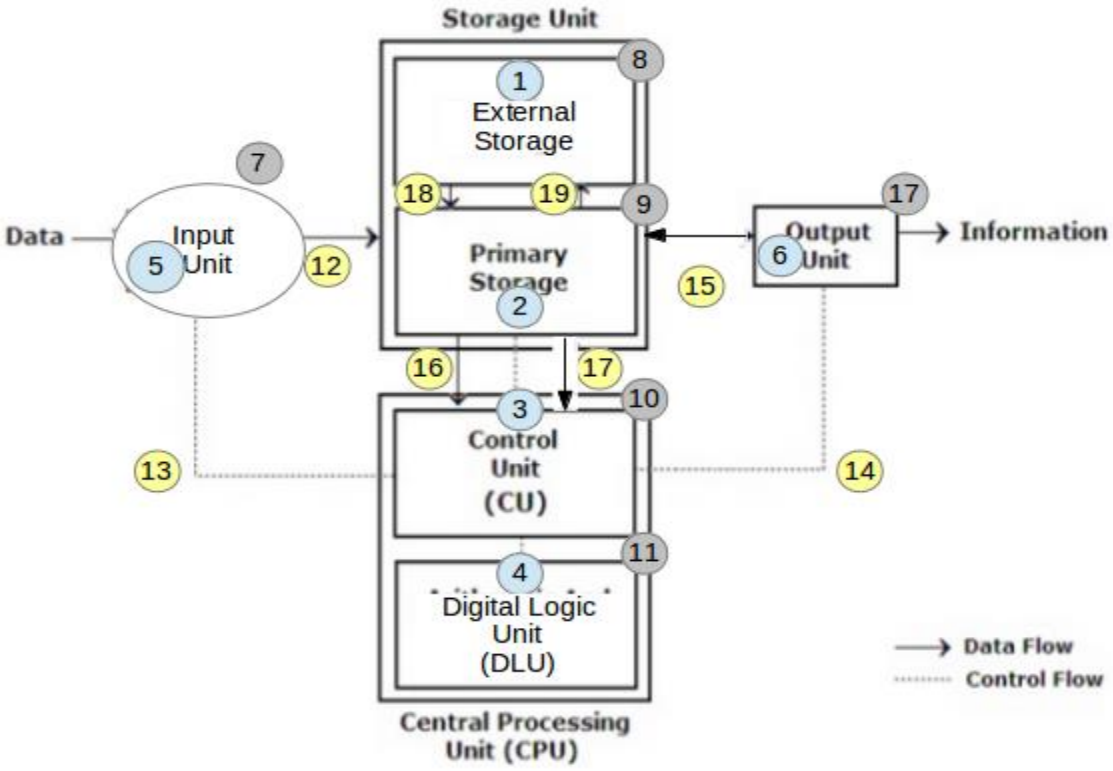
Label	**Expected response**
1	1
2	2
3	+1
4	TRUE
5	



12. Correct and complete the block diagram question

- Question is for specified marks (generally 5)
- For correct and completing the block diagram/ flow chart question, complete block diagram/flow charts with certain number of errors will be given to students and they will be asked to correct those errors. Three types of errors can be introduced by the authors, block type, connector type and block labels. Block type can be input output, process, decision, summation, etc. Connector can be any one of single sided arrow, double sided arrow, dotted line or connector without any arrows type.
- The errors in the diagram need to be corrected appropriately and any incomplete information has to be completed to make it a correct and complete diagram that represents the specified system.
- **Example 1:** The figure shown below is supposed to be the block diagram showing the basic organization of a computer system. There are five errors in the block diagram. Correct them.

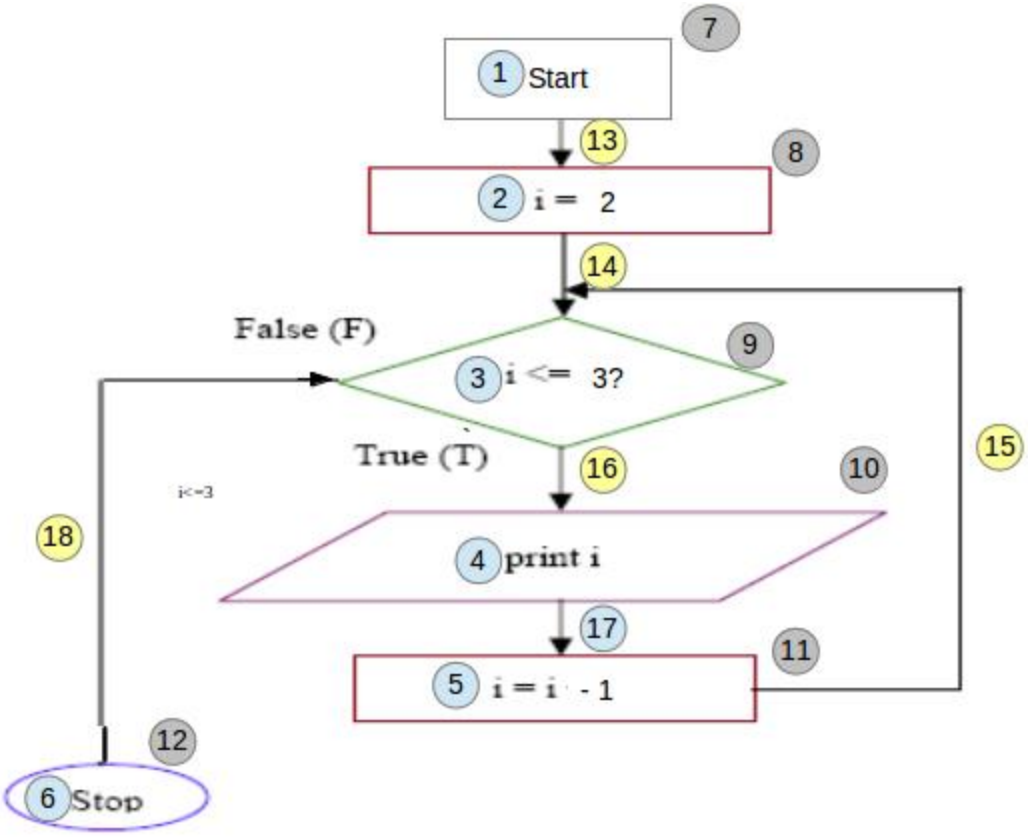
Label	**Incorrect answer**	**Expected answer**
5		
1	External Storage	Secondary Storage
4	Digital Logic Unit	Arithmetic Logic Unit
15		
17		



13. Correct and complete the flow chart question

- Question is for specified marks (generally 5)
- For correcting and completing the block diagram/ flow chart question, complete block diagram/flow charts with certain number of errors will be given to students and they will be asked to correct those errors. Three types of errors can be introduced by the authors, wrong shape of the block, missing text box inside the block, incorrect text box inside the block and incorrect connector. Block type can be input output, process, decision, summation, etc. Connector can be any one of single sided arrow, double sided arrow, dotted line or connector without any arrows type.
- The errors in the diagram need to be corrected appropriately and any incomplete information has to be completed to make it a correct and complete diagram that represents the specified system.
- **Example 1:** The flow chart shown is for the following code snippet:

for(i = 1; i <= 2; i = i + 1)
print("%d\t", i);
There are five errors in the flow chart. Correct them.



Label	Incorrect answer	Expected answer
3	i<=3	i<=2
5	i= i-1	i= i+1
7		
2	i =2	i=1
18		

14. Determine the output question

- Question is for specified marks (generally 5)
- Can be Supply type or Selection type. Any one single type from Types I to V described above is to be used.
- **Example 1:** The output produced by the following program is :_____.

void main( )

```
{
i n t n;
n = 2;
mtn ( n ,1, 2, 3 ) ;
return;
}

void mtn ( int n, int s, int d, int t)
{
i f (n > 0) {
mtn (n-1, s, t, d);
printf(”%d---%d\n”, s, d ) ;
mtn (n-1, t, d, s);
}
return;
}
```