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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Programming in C++ (course)**

 Announcements (announcements) **About the Course (preview)** Ask a Question (forum)

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Unit 2 - Week 0

Course outline

How does an NPTEL online course work?

Week 0

- Quiz : Assignment 0 (assessment? name=120)

Week 1

- Module 1 : Recap of C (Lecture 01) (unit? unit=17&lesson=18)
- Module 1 : Recap of C (Lecture 02) (unit? unit=17&lesson=19)
- Module 1 : Recap of C (Lecture 03) (unit? unit=17&lesson=20)
- Module 2 : Programs with IO and Loop

Assignment 0

 The due date for submitting this assignment has passed. **Due on 2020-09-14, 23:59 IST.**
Assignment submitted on 2020-09-13, 23:54 IST

- 1) What is the output / Error of the following program?

1 point
Note: sizeof(int) = 4

```
#include <stdio.h>
```

```
main() {
    typedef int x[2];
    x myArray[3] = { 1, 2, 3, 4 }; // Line-1
    printf("%u", sizeof(myArray)); // Line-2
    printf(" %d", myArray[1][0]); // Line-3

    return 0;
}
```

☐

a) Error in Line-1: wrong typedef, mismatch of declared size and defined size.

☐

b) Output Line-2: 16

☒

c) Output Line-2: 24

☒

d) Output Line-3: 3

 Yes, the answer is correct.
Score: 1

(Lecture 04)
(unit?
unit=17&lesson=21)

Module 3 :
Arrays and
Strings (Lecture
05) (unit?
unit=17&lesson=22)

Module 4 :
Sorting and
Searching
(Lecture 06)
(unit?
unit=17&lesson=23)

Module 5 : Stack
and Its
Applications
(Lecture 07)
(unit?
unit=17&lesson=24)

Lecture Materials
(unit?
unit=17&lesson=25)

Quiz :
Assignment 1
(assessment?
name=123)

W1_Programming-
Qs1
(/noc20_cs57/progassignment?
name=126)

W1_Programming-
Qs2
(/noc20_cs57/progassignment?
name=127)

W1_Programming-
Qs3
(/noc20_cs57/progassignment?
name=128)

Feedback For
Week 1 (unit?
unit=17&lesson=26)

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Accepted Answers:

c) Output Line-2: 24

d) Output Line-3: 3

2)

Which of the following is/are not a valid variable name/s in C-Language?

1 point

- ☐ a) int num;
- ☒ b) float rate@12;
- ☐ c) char* _123;
- ☐ d) float main;

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) float rate@12;

3)

Find out the output / Error in the following program.

1 point

```
#include<stdio.h>
```

```
enum hello { a, b, c = 20.1, d };
```

```
main() {
    enum hello m = c;
    printf("%d", d);

    return 0;
}
```

- ☐ a) 21
- ☐ b) 3
- ☐ c) 21.1
- ☒ d) Compilation Error: Non-integral constant not allowed in enum

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) Compilation Error: Non-integral constant not allowed in enum

4)

1 point

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Consider the following program, identify the correct pair of truth statement if the program will be executed while it is saved with .c (Case-1) and .cpp (Case-2) extension.

```
#include <stdio.h>
#include <string.h>

main() {
    struct emp {
        char name[10];
        unsigned int sal;
        void TestDisp() {
            printf("%s %u", name, sal);
        }
    };
    struct emp e1;
    strcpy(e1.name, "Employee-1");
    e1.sal = 20000;
    e1.TestDisp();

    return 0;
}
```

☒

a) Case-1: Error: function is not allowed inside structure. Case-2: Output: Employee-1 20000

☐

b) Case-1: Output: Employee-1 20000. Case-2: Error: function is not allowed inside structure.

☐

c) Case-1: Error: function is not allowed in structure. Case-2: Error: function is not allowed inside structure.

☐

d) Case-1: Output: Employee-1 20000. Case-2: Output: Employee-1 20000

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) Case-1: Error: function is not allowed inside structure. Case-2: Output: Employee-1 20000

5) What will be the output of the following Program?

1 point

```
#include <stdio.h>
int main() {
    int i = 0;
    for(i = 0; i < 20; i++) {
        switch (i) {
            case 0: i += 2;
            case 1: i += 5;
            case 5: i += 5;
            default: i += 3;
            break ;
        }
        printf("%d", i);
    }
    return 0;
}
```

- ☐ a) 2 7 12 15 16 17 18 19 20
- ☐ b) 2 5 10 13 16 19
- ☒ c) 15 19
- ☐ d) Compilation Error

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) 15 19

6)

1 point

Consider the following linked list:

$$I \rightarrow I \rightarrow T \rightarrow K \rightarrow G \rightarrow P$$

What is the output of following function when it is called with the head of the list?

```
void fun(struct node* start) {
    if (start == NULL)
        return;

    printf("%c ", start->data); // Considering data is of 'char' type

    if (start->next != NULL)
        fun(start->next->next);

    printf("%c ", start->data);
}
```

- ☐ a) I T G I G
- ☐ b) I T G G

- ☒ c) I T G G T I
- ☐ d) I T G I T G

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) I T G G T I

7)

1 point

A single array $A[1..MAXSIZE]$ is used to implement two stacks. The two stacks grow from opposite ends of the array. Variables $top1$ and $top2$ ($top1 < top2$) point to the location of the topmost element in each of the stacks. If the space is to be used efficiently, the condition for *stack full* is:

- ☐ a) ($top1 = MAXSIZE/2$) and ($top2 = MAXSIZE/2+1$)
- ☐ b) $top1 + top2 = MAXSIZE$
- ☐ c) ($top1 = MAXSIZE/2$) or ($top2 = MAXSIZE$)
- ☒ d) $top1 = top2 - 1$

Yes, the answer is correct.

Score: 1

Accepted Answers:

d) $top1 = top2 - 1$

8)

1 point

The seven elements A, B, C, D, E, F and G are pushed onto a stack in reverse order, i.e., starting from G. The stack is popped five times and each element is inserted into a queue. Two elements are deleted from the queue and pushed back onto the stack. Now, one element is popped from the stack. The popped item is:

- ☐ a) A
- ☒ b) B
- ☐ c) F
- ☐ d) G

Yes, the answer is correct.

Score: 1

Accepted Answers:

b) B

9)

1 point

Consider an array $A[20][10]$, assume 4 words per memory cell and the base address of array A is 100. What is the address of $A[11][5]$? Assume row major storage and index starting with zero.

- ☒ a) 560
- ☐ b) 565
- ☐ c) 570
- ☐ d) 575

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) 560

10)

1 point

Consider the following code snippet and identify the correct declaration statement/s inside function main(), associated with the definition of func().

```
void func(int a) {
    printf("Value of a is %d\n", a);
}

int main() {
    void (*fun_ptr1)(int) = func; // Statement-1
    void (*fun_ptr2)(int) = &func; // Statement-2
    void (*fun_ptr3)() = &func;    // Statement-3
    void (*fun_ptr4)() = func;     // Statement-4

    return 0;
}
```

- ☒ a) Statement-1
- ☒ b) Statement-2
- ☐ c) Statement-3
- ☐ d) Statement-4

Yes, the answer is correct.

Score: 1

Accepted Answers:

a) Statement-1

b) Statement-2

11)

1 point

Consider an array

```
int num[ ] = {1, 2, 3, 4, 5 ,6 };
```

p1 and p2 are two pointers of type (int *). If p1 = num and p2 = p1 + 5 then what is the value of (char*)p2 - (char*)p1.

Note: int and char takes 4 bytes and 1 byte respectively.

- ☐ a) 5
- ☐ b) 16
- ☒ c) 20
- ☐ d) 24

Yes, the answer is correct.

Score: 1

Accepted Answers:

c) 20

