

Quiz 1: Set A

Introduction to Computing and Programming (CSD101)

Max. Marks: 15

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Duration: 35 min.

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1. If integer needs two bytes of storage, then maximum value of unsigned integer is
 (a) $2^{16} - 1$ (b) $2^{15} - 1$ (c) 2^{16} (d) 2^{15}
 (1 mark)

Solution:

2^{16}

2. Match the following:

(2 marks)

a) ;	1) Output function
b) %f, %d, %c	2) function
c) printf	3) Address Operator
d) main()	4) Format specifier
e) &	5) Statement terminator

Solution:

(a) → (5) (d) → (2)
 (b) → (4) (e) → (3)
 (c) → (1)

3. Point out the errors, if any in the following C statements

3.1

(0.5 mark)

(a) char = '5';

Solution: No error

(b) $4/3 * 3.14 * r = vol$;

(0.5 marks)

Solution: ~~$4/3 * 3.14 * r * r$~~

$vol = (float) 4/3 * 3.14 * r * r * r$; ⇒ corrected statement

3.2

(1 mark)

```
#include<stdio.h>
int main(){
int a = 3, b = 4, c;
c = b - a;
switch (c)
{ case 1 || 2:
printf("Help the needy people\n");
```

case 1: ⇒ corrected statement

Solution: Output = 49 as $a-- = 49$.

6. What are the functions of computers?

(1 mark)

Functions of computers are as follows:-

- (a) Accepting data from user (Input)
- (b) Processing the given data based on instructions given (Processing)
- (c) Showing/Displaying the result (Output)
- (d) Storing the data (Storage)

7. What is the significance of the default case in a switch statement?

(1 mark)

In a switch statement, when none of the cases are executed, the default case is executed.

When none of the case statements satisfy the condition, the default case is executed.

8. Convert the numbers in the given format

8.1 $(21.35)_{10}$ to $()_2$

(1 mark)

Solution:

2	21	
2	10	1
2	5	0
2	2	1
	1	0

10101

For decimal:

$$\begin{array}{l} 0.35 \times 2 = 0.7 \quad 0 \\ 0.7 \times 2 = 1.4 \quad 1 \\ 0.4 \times 2 = 0.8 \quad 0 \\ 0.8 \times 2 = 1.6 \quad 1 \end{array}$$

0101

$$(21.35)_{10} \approx (10101.0101)_2$$

8.2 $(2BD.2A)_{16}$ to $(?)_{10}$

(1 mark)

Solution:

$$(2BD.2A)_{16}$$

$$\begin{array}{l} 2 \quad B \quad D \\ \swarrow \quad \downarrow \quad \searrow \\ 16^2 \times 2 \quad 16^1 \times 11 \quad 16^0 \times 13 \end{array}$$

$$= 512 + 176 + 13 = 701$$

$$\begin{array}{l} 2 \quad A \\ \swarrow \quad \searrow \\ 16^{-1} \times 2 \quad 16^{-2} \times 10 \end{array}$$

$$\begin{aligned} &= 0.125 + 0.039 \\ &= 0.164 \end{aligned}$$



$$(2BD.2A)_{16} \approx (701.164)_{10}$$

9. Write a C program to check whether a number is palindrome or not

(2 marks)

Program:

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

```
int main ()
```

```
{
```

```
int num;
```

```
printf("Enter number to check: ");
```

```
scanf("%d", &num);
```

```
while True {
```

```
num1 = num % 10;
```

```
num2 = num / 10;
```

```
}
```

```
num3 = (num1 * 100) + (num2 * 10);
```

```
if (num1 == num3) {
```

```
printf("They are palindrome");
```

```
}
```

```
else {
```

```
printf("They are not palindrome");
```

```
}
```

```
}
```

