38.5/40

S.No. 303850

SHIV NADAR

INSTITUTION OF EMINENCE DEEMED TO BE UNIVERSITY

DELHI NCR

TEST ANSWER BOOK

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Course Code CSD101 Course Title Introduction to Computing & Programming

Date 1/10/24 No. of Continuation Sheets Used 0

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2. Any identification mark at any other place inside the answer sheet will make it liable to be cancelled.
3. Students should take their seats at least ten minutes before the commencement of the exam. Student will not be allowed to leave the examination hall prior to 30 minutes after the commencement of the examination. Candidates arriving late will not be permitted to enter the examination hall 15 minutes after the schedule commencement of the examination.
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8. This answer book contains 12 pages.

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SECTION-A

Ans1) Identifier is a name given to a function / variable or any user defined item in the program.

Rule 1: It cannot have spaces in between.

Eg. new num ✗ newnum ✓

Rule 2: It can only start with an alphabet ~~and~~ or underscore and not with a digit.

Eg. 9alpha ✗ _alpha ✓ OR alpha_ ✓

3

Ans2) We use rules of precedence.

```
7%7+ 7/7 - 7* 7 >>1
 0 +1 - 49 >>1
     -48 >>1
```

a>>1 is given by a = a/(2^1)

= -48/(2^1)

= -24

Answer

2

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Answer

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Ans3) 3.1

(Ans) (B) b, a ✓ +2

This is because a++ is post increment.

∴ b = 6

and a = a++ = 7

3.2

(Ans) (C) i=0; i<4; i++ +2

The code given is for finding the minimum number in an array.
The minimum number in this array is 8, whereas we get the output as 10, which means the loop does not iterate through the complete array, it only goes till index 3.

Ans4) 4.1

Dry run :-

i = 0 count = 0

i = 1 count = 1 = (0+1)

i = 2 count = 3 = (1+2)

i = 3 count = 6 = (3+3) ∴ Output is (A) 10

i = 4 count = 10 = (6+4)

4.2

~~Dry Run:-~~ $c = a + b = 6$

Here, the function we have to evaluate is foo(6, 3, 3);

It is equivalent to foo(int *x, int *y, int *z)

$a = a + 1;$ $\Rightarrow a = 4$

$a = c + c =$ ~~$a+b+a+b$~~ $\Rightarrow a = 6 + 6 = 12$

(Ans) (B) 12

4.3

32 bit = 4 byte

sizeof arr = $4 \times 5 = 20$

$\therefore$ arr = 20

arr + 1 = 21

arr + 3 = 23

$\therefore$ Output will be 20 21 23

Correct Answer: 2000 2004 2012

Base address of arr: 2000. (This address is equivalent to arr.)

arr + 1 points to the next integer in the array.

Address of arr+1: 2000+4=2004

arr + 3 points to the fourth integer in the array.

Address of arr+3: 2000+(3×4)=2000+12=2012

So, arr + 3 is 2012.

Ans5) find (a,b) with return 0 if b>a and return a-b is a>b.

Case I: b>a (returns 0)
find (a,0)

Here a is non negative (can be 0 also)

if a=0 returns 0 and if a>0 it returns a

(a ≯ 0)

0-0=0

Case II: a>b (returns a-b)
find (a, a-b)

Here, a > a-b ∴ it will return a-(a-b) = b

∴ the function returns (D) minimum of a, b.

3.5

Ans6) (C) and (D) correctly satisfy the flow chart.

in (C), acc. to the flow chart if c>d is false then it should print b=2, and condition given in code is if c<=d (implies) then it prints b=2 which means the same thing.

3.5

in (D), all conditions of loop are similar to that given in the flowchart.

SECTION-B

Ans1)

function name ← function header

```
int addition (int num1, int num2) {
    int sum = num1 + num2;
    return sum;
}
```

int → return type; (num1, num2) → parameters; sum = num1 + num2; return sum; → function body; whole block → function definition

```
int main() {
int var1;
int var2;
scanf ("%d", &var1);
scanf ("%d", &var2);
int ans = addition (var1, var2);
printf ("The answer is %d", ans);
}
```

var1, var2 → arguments; addition (var1, var2); ← function call

In this execution of code, first value of var1 & var2 is taken and then function addition is called with var1 and var2 as arguments.

As soon as the function is called, the compiler reads the function definition and returns the value (here, 'sum') and stores it in a variable 'ans' and prints it.

Ans2)

```
int main() {
int n, id, quan;
int sum=0;
inv_list[5][2] = {{3,10}, {5,30}, {9,12}, {11,15}, {15,80}};

printf("Enter the no. of bought items: ");
scanf("%d", &n);

for (int i=0; i<n; i++){
printf("Enter item id: ");
scanf("%d", &id);
printf("Enter item quantity: ");
scanf("%d", &quan);

for (int j=0; j<5; j++){

  if (id == invlist[j][0]){
    sum = sum+ (quan* inv_list[j][1]);
  }
  }
  }
  }
printf("Total shopping cost is %d", sum);

}
```

+8

Ans2)

```
int main () {

int rows = 4;


for (int i=0; i<rows; i++){

for (int j=0; j < i+1 ; j++){
printf("*");
}
for (int k=0; k < 2*(rows-i-1) ; k++) {
printf(" ");
}
for (int l = 0; l<i+1 ; l++) {
printf ("*" );
}
}


for (int m=rows-1 ; m<=0 ; m--) {
for (int n=0 ; n<m+1 ; n++) {
printf("*");
}
for (int p=0; p< 2*(rows-m-1); p++) {
printf(" ");
}
for (int q=0 ; q < m+1 ; q++) {
printf("*");
}
}
}
```