

SECTIONAL GROUP:

DISCUSSION GROUP:

MATRICULATION NO:

(Write your matriculation number legibly using a **PEN**.)TOTAL
MARKS

1.

C

2.

D

3.

E

4.

D

5.

[2 marks]

Number is between 3 and 7 inclusively.**x = 9**

6.

[2 marks]

It counts the number of odd digits in a.

7.

[4 marks]

(a) **TRUE. 'Continue' is a valid identifier name.**(b) **FALSE. Should be sumArray(arr, 5).**(c) **FALSE. Function can have more than one return statement. (It only cannot execute more than one of them.)**(d) **FALSE. It is an infinite loop, because variable i is not updated in the update statement i+2.**

8.

[4 marks]

```

void printDouble(int arr[][8], int row, int col)
{
    int i, j;

    for (i = 0; i < row; i++) {
        for (j = 0; j < col; j++)
            printf("%d %d ", arr[i][j], arr[i][j]);
        printf("\n");
    }
}

```

9. a) Write your pseudo-code in the box below [7 marks]

```
declare int variables i, j, temp, array sequence[8]

read in start number and assign to sequence[0]

loop for i = 1 to 7
    temp = mid square value of number
    if temp is zero, print message and return

    loop for j = 0 to i - 1
        if (temp == sequence[j]), print message and return

    assign temp to sequence[i] and print value

end of loop
```

9. b) Write your code in the box below [7 marks]

```
#include <stdio.h>

int main(void){
    int i, j, temp, sequence[8];
    printf("Enter your 4-digit number: ");
    scanf("%d", &sequence[0]);

    printf("The sequence is: ");
    printf("%d", sequence[0]);

    for (i = 1; i < 8; i++){
        temp = sequence[i-1]*sequence[i-1];
        temp = temp/100;
        temp = temp%10000;
        if (temp == 0) {
            printf("\nNext number 0 generated.
            Sequence terminated.\n");
            return 0;
        }
        for (j = 0; j < i; j++) {
            if (temp == sequence[j]) {
                printf("\nNext number %d is repeated.
                Sequence terminated.\n", temp);
                return 0;
            }
        }
        sequence[i] = temp;
        printf("%d", temp);
    }
    printf("\n");
    return 0;
}
```