Subject: Fundamentals of Programming (FOP).

Program: BSCS. Section: G Code: A (ODD IDs).

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Marks allocated: 30 Marks.

Date of Final Assessment Exam: 19th of January 2021.

Duration of assessment: 11:00 am till 1:30pm.

Q1. Choose the best answer: [5]

1. The statement char ch = 'Z' would store in ch
    1. The character Z
    2. ASCII value of Z
    3. Z along with the single inverted commas
    4. Both (1) and (2)
2. In what sequence the initialization, testing and execution of body is done in a do-while loop
    1. Initialization, execution of body, testing
    2. Execution of body, initialization, testing
    3. Initialization, testing, execution of body
    4. None of the above
3. The real constant in C can be expressed in which of the following forms
    1. Fractional form only
    2. Exponential form only
    3. ASCII form only
    4. Both fractional and exponential forms
4. A do-while loop is useful when we want that the statements within the loop must be executed:
    1. Only once
    2. At least once
    3. More than once
    4. None of the above
5. The macro FILE is defined in which of the following files:

(1) stdlib.h

(2) stdio.c

(3) io.h

(4) stdio.h

6. Which function would you use if a single key were to be received through the keyboard?

1. scanf( )

2. gets( )

3. getche( )

4. getchar( )

7. Looking at the below declarations, which of the following refers to seconds correctly:

```
struct time {int hours; int minutes; int seconds;} t;
struct time *tt;
tt = &t;
```

1. tt.seconds

2. (*tt).seconds

3. time.t

4. tt -> seconds

8. When you pass an array as an argument to a function, what actually gets passed?

1. address of the array

2. values of the elements of the array

3. address of the first element of the array

4. number of elements of the array

9. Which of these are reasons for using pointers?

1. To manipulate parts of an array

2. To refer to keywords such as for and if

3. To return more than one value from a function

4. To refer to particular programs more conveniently

10. A header file is:

1. A file that contains standard library functions.

2. A file that contains definitions and macros.

3. A file that contains user - defined functions.

4. A file that is present in current working directory.

Q2. Predict the output: [3]

a. int i=10;
printf (“%d %d %d”, i, i++,++i);

b. float arr [] = {12.4, 2.3, 4.5, 6.7};
printf("%d\n", sizeof (arr)/sizeof (arr [0]));

c. int main(){
int i;
i =function ();
printf ("%d", i);
return 0;}
function () {
int a; a = 250;
return 0;}

Q3. WRITE A SINGLE LINE OF code: [2]

1.How will you initialize a three-dimensional array threed[3][2][3]? How will you refer the first and last element in this array?

2. zeroing a 1-D array

Q4) 3 sales of people for the month of July 2020, these 3 sales persons made 15 sales transactions combined. Make a program to input the 15 sales amount and the salesman code denoting the salesman who made the sales; [5]

Code 1 = salesman 1

Code2 = salesman 2

Code3 = salesman 3

The program should validate the value of the sales amount (must be between 1000 and 99999) and sales man code must be between 1 and 3.

If invalid display the message “Invalid entry” and then accept another value to disregard the invalid entry.

EXPECTED OUTPUT:

ABC ENTERPRISES

TOTAL SALES FOR THE MONTH OF JULY

Salesman1: (Total number of sales)

Salesman2: (Total number of sales)

Salesman3: (Total number of sales)

TOTAL: (total sales for the month of July): Sales man with the highest sale is salesman 1or 2or 3.

Q5) Implement the shape problem where each 2-D shape should contain function getarea() to calculate the area of the 2-D shape and 3-D shape should calculate the get area and get volume to calculate the surface area and volume respectively of the 3-Dshape. If a shape is 2-D print its area and if the shape is 3-D print its surface area and volume. [5]

Q6) Suppose you are running a company where 15 employees work [5]

Design a structure name employee to store their name, age, basic salary, bonus and other things that is needed. Take all data input from user.

Write a function name emp_bonus().For those employees who are older than 50 years will get the bonus of 40% of their basic salary . The rest of the employees will get the bonus of 25 % of their basic salary. Print the name and total salary of each employee.

Open a text file name employee_data . If the file open successfully write all the employee name and age on that file.

Q7) initialize and declare two-character arrays; [5]

Char name1[10]=”Filip”;

Char name2[10]=”George”;

And swap those two-character arrays value using pointers and without any inbuilt function.