Lecture Questions:

Lecture_01-

/* 01. Welcome code */

/* 02. Size of variables */

/* 03. Write a C program to calculate area of a rectangle

(a)using hand coded input

(b)using inputs supplied by user;

/* 04. Calculate the area of a circle and modify the same program to calculate the volume of a cylinder given its radius and height */

/* 05. Write a program to convert celsius to Fahrenheit */

/* 06. Write a program to calculate simple interest for a set of values representing principal, number of years and rate of interest */

Lecture_02-

/* 01. Type casting */

Lecture_03-

/* 01. if-else one line code format (Ternary) */

/* 02. Switch format */

/* 03. Write a program to find grade of a student given his marks based on below

90 – 100 => A

80 – 90 => B

70 – 80 => C

60 – 70 => D

50 – 60 => E

<50 => F */

/* 04. Write a program to determine whether a student passed or failed. to pass a student requires a total of 40% and at least 33% in each subject. Assume there are three subjects and take the marks as input from the user */

/* 05. Calculate income tax paid by an employee to the government as per the stabs mentioned below

Income slab	Tax
2.5L - 5.0L	5%
5.0L - 10.0L	20%
Above 10.0L	30%

Note that there is no tax below 2.5L Taka income amount as an input from the user */

/* 06. Write a program to find whether a year entered by the user is a leap year or not.

Take year as an input from the user */

Lecture_04-

/* 01. Write a program to print natural numbers from 10 to 20 when initial loop counter is initialized to 0 */

/* 02. write a program to print first 'n' natural numbers using do-while loop */

/* 03. write a program to print first 'n' natural numbers using for loop */

/* 04. Table program */

/* 05. Write a program to print multiplication table of 10 in reversed order */

/* 06. Write a program to sum first ten natural numbers using for loops */

/* 07. Write a program to sum first ten natural numbers using while loops */

/* 08. Write a program to sum first ten natural numbers using do-while loops */

/* 09. Write a program to calculate the sum of the numbers occurring in the multiplication table of 8 (Consider 8x1 to 8x10) */

/* 10. Write a program to calculate the factorial of a given number using for loop */

/* 11. Write a program to calculate the factorial of a given number using while loop */

/* 12. Write a program to calculate the factorial of a given number using do-while loop */

/* 13. Write a program to check whether a given number is prime or not using for loop */

/* 14. Write a program to check whether a given number is prime or not using while loop */

/* 15. Write a program to check whether a given number is prime or not using do-while loop */

Lecture_05-

/* 1. Int function */

/* 2. Write a program with three functions

1. Good Morning function which prints "good morning!"

2. Good Afternoon function which prints "good afternoon!"

3. Good Evening function which prints "good evening!"

main() should call all of these in order 1 -> 2 -> 3 */

/* 3. Misnomer function */

/* 4. Use the library function to calculate the area of a square with side a */

/* 5. Factorial using recursion */

/* 6. Write a program using function to find average of the three numbers */

/* 7. Write a function to convert celcius temperature into Fahrenheit */

/* 8. Write a function to calculate force of attraction on a body of mass m exerted by earth */

/* 9. Write a program using recursion in calculate nth element of fibonacci series */

/* 10. Write a program using recursion to calculate the sum of first n natural numbers */

/* 11. Write a program using functions to print the following pattern (first n lines)

```
 *
 ***
 *****
 */
```

Lecture_06-

/* 1. Pointer */

/* 2. Pointer to pointer */

/* 3. Call by value */

/* 4. Call by reference 1 */

/* 5. Call by reference 2 */

/* 6. Swap */

/* 7. Write a program to print the address of a variable. Use this address to get the value of the variable */

/* 8. Write a program to change the value of a variable to ten times of its current value. Write a function and pass the value by reference */

/* 9. Write a program using a function which calculates the sum and average of two numbers. Use pointer and print the values of sum and average in main() */

Lecture_07-

/* 1. Array_1 */

/* 2. Array_2 */

/* 3. Other way to init the values of array */

/* 4. Array in memory */

/* 5. Array using pointer */

/* 6. Create a 2D array by taking input from the user. Write a display function to print the content of this 2D array on the screen */

/* 7. Create a array of 10 numbers. Verify using pointer arithmetic that (ptr+2) points to the third element where ptr is a pointer pointing to the first element of the array */

/* 8. Write a program to create an array of 10 integers and store multiplication table of 5 in it */

/* 9. Write a program to create an array of 10 integers and store multiplication table and general input provided by the user using scanf */

/* 10. Write a program containing a function which reverses the array passed to it */

/* 11. Write a program containing a function which reverses the array passed to it by the users */

/* 12. Write a program counting functions which counts the number of positive integers in an array */

/* 13. Create an array of size 3x10 containing multiplication tables of the numbers 2, 7 and 9 respectively */

/* 14. Create an array of 3x10 containing multiplication tables for a custom input given by the user */

/* 15. Create a three-dimensional array and print the address of its elements in increasing order */

Lecture_08-

/* 1. String */

/* 2. Printing string */

/* 3. Input */

/* 4. Gets and puts */

/* 5. String function */

/* 6. write a program to take string as an input from the user %s confirm that the string is equal */

/* 7. write a program to take string as an input from the user %c confirm that the string is equal */

/* 8. Write your own version of strlen function from <strin.h> */

/* 9. Write a function slice() to slice a string. It should change the original string such that it is now the sliced string. Take 'm' and 'n' as the start and ending position for slice */

/* 10. Write your own version of strcpy function from <string.h> */

/* 11. Write a program to encrypt a string by adding 1 to ascii value of its characters */

/* 12. Write a program to decrypt the string encrypted using encrypt function */

/* 13. Write a program to count the occurrence of a given character in a string */

/* 14. Write a program to check whether a given character is present in a string or not */

Lecture_09-

/* 1. Structure */

/* 2. Write a program to store the details of 3 employees from user defined data. Use the structure declared above */

/* 3. Pointer to string */

/* 4. void show(struct employee e);

Complete this show function to display the content of employee */

/* 5. Typedef */

/* 6. Use of typedef */

/* 7. Create a two-dimensional vector using structures in C */

/* 8. Write a function 'sumVector' which returns the sum of two vectors passed to it. The vector must be two-dimensional */

/* 9. Write a program to illustrate use of arrow operator -> in C */

/* 10. Write a program with structure representing a complex number */

/* 11. Create an array of 5 complex numbers and display them with the help of a display function. The value must be taken as an input from the user */

/* 12. Write a structure capable of storing data. Write a function to compare those data */

/* 13. Write a structure capable of storing data. Write a function to compare those data also using 'typedef' keyword */

Lecture_10-

/* 1. File read "r" */

/* 2. Modify the program above to check whether the file exists or not before opening the file */

/* 3. File write "w" */

/* 4. File write (append) "a" */

/* 5. Use of fgetc */

/* 6. Use of fputc */

/* 7. Reading character by character / Use of EFO */

/* 8. Write a program to read three integers from a file */

/* 9. Write a program to generate multiplication table of a given number in text format. Make sure that the file is readable and well formatted */

/* 10. Write a program to read a text file character by character and write its content twice in separate file */

/* 11. Take name and salary of two employees as input from the user and write them to a text file in the following format:

i. Name1, 3300

ii. Name2, 7700 */

/* 12. Write a program to modify a file containing an integer to double its value */

Lecture_11-

/* 1. Write a program to create a dynamic array of 5 floats using malloc() */

/* 2. Write a program to create an array of size n using calloc() where n is an integer entered by the user */

/* 3. Write a program to demonstrate the usage of free() with malloc() */

/* 4. Use of realloc() */

/* 5. Write a program to dynamically create an array of size 6 capable of storing 6 integers */

/* 6. Use the array in problem 1 to store 6 integers entered by the user */

/* 7. Solve problem 1 using calloc() */

/* 8. Create an array dynamically capable of storing 5 integers. Now use realloc() so that it can now store 10 integers */

/* 9. Create an array of multiplication table of 7 up-to 10(7x10=70). Use realloc() to make it store 15 number (from 7x1 to 7x15) */

/* 10. Attempt problem 4 using malloc() */