# ODD 2020
# Tutorial Sheet - 2

## Software Development Fundamentals – I (15B11CI111)

| Course Outcomes (CO) | |
|---|---|
| **CO1** | Explain various phases of software development life cycle |
| **CO2** | Explain various data types, memory allocation schemes, precedence of arithmetical and logical operations, and need of array, and structures |
| **CO3** | Draw the flow chart and write the high level code for different problems |
| **CO4** | Apply and implement functions with or without pointers for different problems |
| **CO5** | Demonstrate and implement various operations like traverse, insertion, deletion, *etc.* on files |

**Note:** Students are advised to submit their solutions to their respective tutorial faculties

**Q1. [CO3]** Find out the minimum count of races required to identify three fastest horses, if count of horses is 25 and at a time only 5 horses can participate in a race. Also, you do not have the accessibility to watches.

**Q2. [CO3]** Let us modify the Fake Coin puzzle as follows: 8 coins are given, out of which 1 coin is fake; you do not know whether the fake coin is lighter or heavier than the genuine coin. You have accessibility of two pan weighing machine without weights. Identify the minimum count of required weighing to identify the fake coin

**Q3. [CO3]** Constrained with, no accessibility to watches, draw the flow chart to find out the minimum count of races required to find three fastest horses, if count of horses is 25 and at a time only 5 horses can participate in a race

**Q4. [CO3]** You have three jugs/containers (without marker) named as A, B, and C with capacities as 8 litres, 5 litres, and 3 litres respectively. The 8 litres jug is full of water whereas other two are empty jugs. Without weighing the jugs, it is desired to put 4 litres water into jug B with minimum number of steps

**Q5. [CO3]** Covering all the requirements of the Snake & Ladder game, draw the flow chart

**Q6. [CO3]** Draw the flow chart to verify whether the user inputted number is a prime number or not

**Q7. [CO3]** It is desired to compute the average and total marks of a student in five subjects. Draw the flow chart and write C program to input the marks obtained in five subjects and display the average and total marks

**Q8. [CO3]** Draw the flow chart and write C program to swap the values of two variables without using the third variable

**Q9. [CO3]**Let us create a magic square of3×3 square grids by placing distinct numbers in the range between 5 and 13. Which one of the following is the sum of the values present in each column or each row, or each corner to corner diagonal?

- **A.** 38
- **B.** 32
- **C.** 30
- **D.** None of the listed options