

**NEPAL COLLEGE OF INFORMATION TECHNOLOGY**  
**ASSESSMENT\_FALL\_2023**

Level: Bachelor  
Programme: BE\_SE  
Course: Software Engineering Fundamentals  
Semester : IT/Software III

Year: 2024  
Full Marks: 100  
Pass Marks: 45  
Time: 3 hrs.

*Candidates are required to answer in their own words as far as practicable.  
The figures in the margin indicate full marks.*

**Attempt all the questions.**

- Q.n 1.a Why do you think agile process of software development is considered better than conventional method of software development? Explain scrum process with suitable diagram. 7
- b Define empirical estimation technique? 8
- Given the data below, compute the function point value, effort and total cost of a project with the following information domain characteristics.
- Number of user inputs: 37
- Number of user outputs: 53
- Number of user inquiries: 5
- Number of files: 5
- Number of external interfaces: 3
- Assuming that the complexity of given software is complex, productivity of software developers is 25 FP/PM and their salary is Rs.1000 /PM
- Q.n 2.a Define the role of primary, secondary actors and use cases in use case diagram. Draw use case diagram for online food delivery system. 8
- b Define functional modeling. Explain how DFD helps to acquire functional model of any system 7
- Q.n 3.a Explain need of design while developing software. Explain data design with suitable example. 8
- b Explain the concept of modularity, structural partitioning and control hierarchy for effective software design. 7
- Q.n 4 Why do we need to calculate cyclomatic complexity of a code. Calculate the Cyclomatic Complexity of following snippet 7

**While(condition)**

```
{  
    if(condition)  
    {  
        if body  
    }  
    else if (condition)  
    {  
        else if body  
    }  
    value update  
}
```

- b      Mention the significance of software testing? Explain different types of software testing taking an example of each.      8
- Q.n 5.a      Define software configuration management. Difference between version control and change control.      8
- .b      What are the attributes for good quality software? Difference between international standard organization (ISO) and capability maturity model (CMM)      7
- Q.n 6.a      Explain the important features of object oriented software project (OOP).      8  
Explain different types of abstraction with an example.
- b.      Differentiate between object oriented analysis (OOA) and object oriented design (OOD).      7
- Q.7      Write down short notes on any of two[2\*5 = 10]
- a. Four Ps
  - b. Design Patterns
  - c. Software risks