



# NEPAL COLLEGE OF INFORMATION TECHNOLOGY

Level: Masters

Faculty: Computer Engineering, Computer Science

Subject: Object-oriented Software Engineering, Fall 2019

Time: 2 hours

Full marks: 50

Pass marks: 30

*Candidates are required to give their answers in their own words as far as practicable.*

## ANSWER FOLLOWING QUESTIONS

1. Describe how different models of COCOMO are used in different phases of project management. 5
2. *A mobile phone app is used to control a pet robot. When the app is launched, it scans for available robots via bluetooth connection. Once found, the mobile app shows a green icon to indicate that a robot has been found. Now whenever user presses 'Forward' button in the app, robot moves forward, 'Back' button in the app makes robot move backwards.* 5+5  
For the given scenario of robot movement control, find out entity objects, boundary objects and control objects. Develop sequence diagram for the scenario.
3. How reuse is implemented in sub-system design. Provide examples of 4 different types of reuse in sub-system design. 2+8
4. Differentiate functional testing and object-oriented testing. 5
5. How inheritance is mapped into persistent data storage? Demonstrate two different types of inheritance being mapped into persistence data storage. 2+3
6. Write short notes on 5+5+5
  - Quality requirements of use-cases
  - Delegation
  - Complex systems and elements of object models