POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2015
Programme: BE | Full Marks: 100
Course: Object Oriented Software Engineering | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.
Attempt all the questions.

1. a) Explain Agility principles of software development. Which software development model is best suited for a risk driven software development. 7
   b) Can spiral model be used for all types of project? Give an example of development project for which spiral model is not appropriate. 8
2. a) What is risk management? What are different types of risks and how can we identify risk? Explain. 7
   b) Compare and contrast FP based estimation with COCOMO II Model. 8
3. a) Obtain DFD for the following System. 8
   A customer can book a ticket from the internet or can directly buy the ticket in the Movie Hall itself. There can be multiple halls within one movie theatre. The ticket operator provides a ticket with hall's stamp after checking the booking information to the customer. The guard in each hall validates the ticket and provides access to the customer inside the hall. There is also provision of complementary food item which the café will provide in the break time of the movie.
   b) Discuss the various steps of interface design. How is it evaluated? 7
4. a) What is the purpose of Unit Testing? Draw control flow of a program to find largest number among three numbers and find cyclomatic complexity of that program? 7
   b) Suppose you want to develop software for an alarm clock. The clock shows the time of day. Using buttons, the user can set the hours and minutes fields individually, and choose between 12 and 24-hour display. It is possible to set one or two alarms. When an alarm fires, it will sound some noise. The user can turn it off, or choose to 'snooze'. 8

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If the user does not respond at all, the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable. Draw use case for this system.

5. a) What do you mean by Design Patterns? What is the importance of incorporating reuse in a project? List out its major advantages. 7

   b) What is software quality control and software quality assurance? Explain in brief about the representative qualities of software. 8

6. a) What is capability maturity model? Describe the five levels defined in the CMM. 7

   b) Draw a UML Class Diagram representing the following elements from the problem domain for a hockey league. A hockey league is made up of at least four hockey teams. Each hockey team is composed of six to twelve players, and one player captains the team. A team has a name and a record. Players have a number and a position. Hockey teams play games against each other. Each game has a score and a location. Teams are sometimes lead by a coach. A coach has a level of accreditation and a number of years of experience, and can coach multiple teams. Coaches and players are people, and people have names and addresses. Draw a class diagram for this information, and be sure to label all associations with appropriate multiplicities. 8

7. Write short notes on: (**Any two**) 2×5

   a) Estimation of object oriented projects.

   b) Emerging Trends in Software Engineering.

   c) Debugging.