POKHARA UNIVERSITY

Level: Bachelor | Semester: Spring | Year : 2019
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) What is lean software development? Mention the lean principles and explain how each of these principles can be adapted to software process with examples. 8

   b) Why do you consider UML as language? Give reason. When do you use prototype model? Explain. 7

2. a) What is risk management? What are different types of risks and how can we identify risk? Explain. 8

   b) What is project management? State and explain the concepts (the 4 P's) of project management. 7

3. a) Prepare level 1DFD for the following food ordering system. 8

   A potential patient joins the doctors by submitting a patient application form. A new patient record is created and stored in the patient records store. A patient makes an appointment by providing their patient details. An appointment card is given to the patient after they have made the appointment. The appointment details are stored in the database.

   A receptionist makes a telephone appointment for a patient by entering a patient details. A receptionist also cancels appointments for a patient by entering their cancelation details. Both process update the appointment section of the database.

   A doctor will see a patient. When they see a patient a list of appointments and patients record will be sent to the doctor. A doctor may want to issue a prescription by entering prescription details into the system and a prescription be issued to the patient.

   b) Draw a Use Case diagram from the given case study. 7

   In hospital a patient goes to registration machine he press the ON

button then the screen open. He enters patient ID number. He books for the doctor for checkup. He checks the category of disease from given list, then he chooses the doctor's name from given doctor's name list, he enters time he wants to meet with doctor. For this registration he need to enter the amount, if the amount digit is ok it accepts the registration and prints the registration slip, otherwise it will give a signal of alarm insufficient amount.

4. a) What is modularity? Differentiate between sequence and communication diagram with regards to the strength and weakness with example. 7

   b) What is state chart diagram? Draw a sequence diagram for the given scenario : 8

   A customer wants to draw money from his bank account. He enters his card into an ATM (Automated Teller Machine). The ATM machine prompts "Enter pin". The customer enters his pin. The ATM (internally the retrieves the bank account number from the card). The atm encrypts the pin and the account number and sends it over to the bank. The bank verifies the encrypted account and pin number. If the pin number is correct the ATM displays "Enter amount", draw money from bank account and pays out the amount.

5. a) Demonstrate use of control structure testing with suitable example. 7

   b) What is the difference between an SCM audit and a technical review? Can their function be folded into one review? What are the pros and cons? 8

6. a) Demonstrate relationship of mean-time-between-failure (MTBF), mean-time-to-failure (MTTF), mean-time-to-repair with service availability with suitable example. 7

   b) What is the capacity maturity model? Describe the five levels defined in CMMI. 8

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

   a) Functional Vs. Non-Functional Requirements
   b) Baseline
   c) Requirement engineering