Department of Computer Applications

23mx21 – Software Engineering – Practice Test-1

Note: Answer all the questions

COCOMO table is permitted to use

Recommended to use pencil for drawing models.

Co 1 – Introduction, SDLC Models, Estimation Techniques

1. a) What is meant by CODE-and-FIX or BUILD-and-FIX model of software development?

   b) i) Assume that, there is a software development request from a customer. They are ready to give complete requirements in the beginning itself; assured for not changing requirements in between. Only condition is that, they need to have the completed software at the earliest and no budget constraints. Is it possible to use hybrid approach for SDLC? If yes, suggest SDLC Models can be combined to meet the customer requirements. If no, suggest a SDLC model to meet the customer expectations. Draw the respective model(s) and justify your answer. [3]

   ii) Write a short introduction for Agile Methodology. List the benefits of using agile approach in software development. [4]

   c) i) If a software product of size S takes m months to develop, then according to the COCOMO estimation model, how long (in months) will it take to develop a product of size 2 × S? [5]

   a) Greater than 2 × m months

   b) Greater than 3 × m months

   c) Less than 2 × m months

   d) Greater than 4 × m months

   ii) Apply COCOMO technique to compute all the estimates required for an embedded project having 4 modules of size 12.34 KLOC, 12,345 LOC, 33.125 KLOC and 23,678 LOC respectively. Consider the following cost drivers: High Skilled Programmer and Analyst, High Database Size and Very High Use of Software Tools. Use a=2.8, b=1.20, c=2.4 and d=0.32 for Embedded Systems project. [10]

2. a) Tabulate the functional requirements for an online food delivery system.

b) Re-Write the following statement of requirements for part of a ticket-issuing system: An automated ticket-issuing system sells rail tickets. Users select their destination and input a credit card and a personal identification number. The rail ticket is issued and their credit card account charged. When the user presses the start button, a menu display of potential destinations is activated, along with a message to the user to select a destination. Once a destination has been selected, users are requested to input their credit card. Its validity is checked and the user is then requested to input a personal identifier. When the credit transaction has been validated, the ticket is issued.

c) A) Draw a neat USE CASE Model to depict Railway Ticket Reservation Vending Machine System. The Railway Ticket Vending Machine "– similar to ATM for money transaction. It is explained as follows: Customer register with Indian Railways (IR). IR issues a Railway card after verification. The card is like a credit card, but used only for booking train tickets. Customer inserts card in the Railway Ticket Vending Machine. Enters PIN – if PIN is correct, menu displayed. Customer chooses an option to reserve. Enters his/her travel plan. Check the availability. Book the ticket. Payment using the same card. Ticket is issued from the machine. For cancellation: Insert the card and PIN. Enter PNR number of the ticket. Ticket details are displayed. Select the passenger to cancel. Confirm the cancellation. A slip generated for the cancelled tickets with refund details. New ticket issued from the machine. For query: Insert the card & PIN. Select the query. Enter the relevant inputs for the query. Get the result.

[OR]

B) Depict USE CASE Model [5 Marks] for a Banking Software without ATM and write a suitable USE CASE Story [10 Marks] to illustrate the Withdrawal of cash.