Nepal college of information technology

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| Level: Bachelor | Semester – VI(Spring) | Year : 2012 |
| Programme: BE | | Full Marks: 70 |
| Course: Object Oriented Software Engineering | | Time : 2hrs. |

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| *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. |

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|  | 1. Define Software Engineering in your own words. List the relation of software engineering to other areas of computer science and explain any three of them. 2. Compare RAD model, prototype model, and spiral model. List out their advantages and disadvantages. | 8  7 |

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|  | 1. Differentiate Controlled Centralized (CC) and Controlled Decentralized (CD) genetic team organization. List four “organizational paradigm” for software engineering suggested by Constantine and explain any two of them. 2. You are asked to develop software for a Soda Vending Machine. The machine delivers a Can of Soda after inserting the Rs. 2 coin in the machine and selects a particular brand of soda. Consider that machine has different brands of soda available.   *Questions:*   * Identify all the Use-cases and Actors and draw the Use-Case diagram for the above scenario. * Draw the collaboration diagram for the primary transaction of the machine. | 8  7 |
|  | 1. Describe the state transition diagram with an appropriate example. 2. Let us consider a scenario of a library system that is Borrowing a book.   A Book Borrower presents a book. The system checks that the potential borrower is a member of the library, and that s/he does not already have the maximum permitted number of books on loan. This maximum is six unless the member is a staff member, in which case it is 12. If both checks succeed, the system records that this library member has this copy of the book on loan. Otherwise it refuses the loan.  Draw sequence diagram for the above scenario. | 8  7 |
|  | 1. Discuss how Use case and CRC modeling aids in Object Oriented Analysis. 2. Case study: Identify classes and draw class diagram   A user can open a new or existing document. Text is entered through a keyboard. A document is made up of several pages and each page is made up of a header, body and footer. Date, time and page number may be added to header or footer. Document body is made up of sentences, which are themselves made up of words and punctuation characters. Words are made up of letters, digits and/or special characters. Pictures and tables may be inserted into the document body. Tables are made up of rows and columns. Users can save or print documents. | 8  7 |
|  | Write short notes on (Any Two)   1. 4 P's in Project Management 2. Encapsulation, inheritance and Polymorphism   c) message passing between objects | 2×5 |