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SF-7693

B. E. IV (Sem. VIII) (CO. / IT.) Examination

May / June – 2011

Software Engineering

Time : **3** Hours] [Total Marks :**100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ B. E. 4 (SEM. 8) (CO. / IT.)

Name of the Subject :

☛ SOFTWARE ENGINEERING

☛ Subject Code No. : 7 6 9 3 ☛ Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

1 (a) Attempt the following : **10**

(1) Define software engineering.

(2) List out of different umbrella activities.

(3) Explain cardinality and modality in data modeling.

(4) Define cohesion and coupling

(5) What is CMMI ?

(b) Software is to be develop for an ATM of banking network :

(1) Prepare a problem statement making necessary assumptions. **2**

(2) Find actors, use cases and draw use case diagram. **4**

(3) Draw the sequence diagram for withdraw money from ATM. **4**

2 (a) Explain the process model which is more suitable when the risk are high **7**

(b) Briefly describe Hooker's seven core principles that focus on software engineering practice. **7**

OR

2 (a) Explain the phases of unified process. **6**

(b) Describe various elements of analysis model. **7**

3 Attempt any **four** : **16**

(a) Explain " Software doesn't wear out, but it does deteriorate". How we can reduce software deterioration ?

(b) Describe briefly generic process framework activities.

(c) What is usefulness of prototyping model ?
When prototyping is problematic ?

(d) List out principles for effective communication.

(e) Describe the "Restraining factors" to construct a system model.

(f) What are the steps required to initiate requirement engineering ?

4 Answer the following : **20**

(a) (i) Describe the following : **5**

(1) Sandwich Testing

(2) DU chain

(ii) Do as directed : **5**

(1) Verification refers to the set of activities that ensure that software correctly implements a specific function, justify the statement.

(2) "Any change in software even a change for the better is accompanied by drawbacks and discomforts". State whether the statements is true and false. Justify your answer.

(b) (i) Determine the cyclomatic complexity of the following program code using flow graph and also find out the linearly independent paths. **5**

```
class BinSearch{
  void search(int key, int[] elemArray, result r){
      int bottom=0;
      int top = elemArray.length-1;
      int mid;
      r.found = false:
      r.index = -1;
      while (bottom< = top){
       mid  = (top + bottom) /2;
       if (elemArray[mid] == key){
        r.index =mid;
        r.found = true;
        round;
       }
       else {
        if (elemArray[mid]<key)
           bottom = mid +1;
         else
             top = mid-1;
       }
      }
    }
  }
```

(ii) Explain equivalence partitioning. **5**

5 Answer the following : **15**

(a) Explain the design issues related to UI. **8**

(b) Why is software architecture important ? **7**

OR

(b) Explain design principles applicable to component level design. **7**

6 Answer any three from the following : **15**

(i) Discuss reactive risk and proactive risk strategy.

(ii) What are the objectives of FTR ?

(iii) Explain timeline charts for project scheduling.

(iv) What should we do when management demands that we make a deadline that is impossible ?
