(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 1070 Roll No. | | | | | | | | | | |

B.Tech.

FOURTH SEMESTER EXAMINATION, 2005-2006

SOFTWARE ENGINEERING

Time : 3 Hours *Total Marks : 100*

Note : *(i) Attempt **ALL** questions.*
(ii) All questions carry equal marks.
(iii) In case of numerical problems assume data wherever not provided.
(iv) Be precise in your answer.

1. Attempt ***any four*** parts of the following : **(5x4=20)**

(a) What is principle aim of software Engineering discipline ? What does the discipline of software Engg. discuss ?

(b) Describe the various steps in software development life cycle ? What are end product of each step ?

(c) What is prototype ? Under what circumstances is it beneficial to construct a prototype ? Does the construction of prototype always increase the overall cost of software development ?

(d) What are symptoms of present software crisis ? What factors have contributed to making of present software crisis ? What are possible solutions to present software crisis ?

(e) Explain with suitable example, types of software development for which spiral model is suitable ? Is the no. of loops of spiral fixed for different development project ? If not, explain how the no. of loops in spiral is determined.

(f) Explain why it is not prudent to use the iterative water fall model for developing very large software product ?

2. Attempt *any four* parts of the following : **(5x4=20)**

(a) List five desirable characteristics of good SRS document. Discuss the relative advantages of formal and informal requirement specification.

(b) What is structured analysis ? Briefly review the tools used. How does it differ from traditional approach ?

(c) Define the decision table. What is difference between discision table and decision tree ?

(d) Discuss the significance and use of requirement engineering. What are problems in formulation of requirement ?

(e) Describe the major software quality assurance activity and indicate their importance.

(f) What is meant by "Formal Technical Review" ? Should it access both programming style as well as correctness of software ? Give reasons.

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3. Attempt *any two* parts of the following : **(10x2=20)**

(a) Discuss the objective of modular software design, what do you mean by term cohesion and coupling in context of software design ? How are concepts of cohesion and coupling useful in arriving at good software design ?

(b) Calculate Halestead's basic measure on factorial code given below :

```
int fact (int n) {
If (n = = 0)
{return 1;}
else
{return n * fact (n - 1);}
}
```

(c) Compare the relative advantages of object oriented and function oriented approaches to software design with help of suitable example. Explain how the inheritance feature of object oriented paradigm helps in code reuse ?

4. Attempt *any two* parts of the following : **(10x2=20)**

(a) Given software product and its requirement specification document, explain how would you design the system test suit for this software product.

(b) What are drivers and stub modules in context of integration and unit testing of software product ? Why are stubs and drivers modules required ?

(c) What is difference between coding standard and coding guidelines ? Why are these considered important in software development organization ? Write down five important coding standard and guidelines that you would recommend.

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5. Attempt *any two* parts of the following : **(10x2=20)**

(a) Schematically draw the architecture of CASE environment and explain how the different tools are integrated.

(b) (i) What are different types of maintenance that a software product might need ? Why is such maintenance required ?

(ii) What do you mean by term software re-engineering ? Why is it required ? Discuss.

(c) Discuss typical software Risk. What technique can we use to control each risk ? Is it possible to prioritize the risk, explain.

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