Printed Pages—4   IT—502

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

PAPER ID : 1009   Roll No. ☐☐☐☐☐☐☐☐☐☐

B.Tech.

FIFTH SEMESTER EXAMINATION, 2004-2005

SOFTWARE ENGINEERING

Time : 3 Hours   *Total Marks : 100*

Note : (i)   *Attempt **ALL** the questions.*

        (ii) *All questions carry equal marks.*

1. Answer *any four* of the following :   [5x4=20]

    (a) What do people mean by software crisis ?
        Discuss the problems and causes for the
        software crisis.

    (b) Explain what is wrong with the notion that
        software engineering is too time consuming
        and interferes with a programmer's
        productivity.

    (c) How do software characteristics differ from
        hardware characteristics? Also illustrate with
        a diagram that the software doesn't wear out.

    (d) Why evolutionary models are considered by
        many to be the best approach to software
        development in a modern context ?

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(b) Answer the following questions :

  (i) Distinguish among error, fault and failure.

  (ii) Given a software and its requirements specification document, how can you design black box suits for this software .

  (iii) How cyclomatic complexity is useful in program testing ?

(c) Briefly discuss the following :

  (i) Reliability assessment models

  (ii) Top-down structure programming

  (iii) Information hiding

  (iv) System testing

4. Answer *any two* of the following :   [10x2=20]

  (a) List out various project estimation techniques and discuss any two of them.

  (b) Answer the following questions :

   (i) Enumerate five important desirable characteristics of a good software engineer.

   (ii) Distinguish between a DFD and a flow chart.

   (iii) What are the reasons for increased productivity when an object oriented design is used ?

(e)   How does preventive maintenance differ from adaptive maintenance? Explain.

(f)   What models are created during the analysis phase of a software development process ? What is the purpose of each ?

2.   Answer *any four* of the following :   [5x4=20]

(a)   How can the selection of an inappropriate software process model be avoided ?

(b)   List the four design models required for a complete specification of a design and explain how each is created.

(c)   Discuss different type of coupling and cohesion measures of modules.

(d)   Write a short note on 4GL.

(e)   List the important issues which an SRS document must address.

(f)   Explain some of the causes and remedies for high coupling between two software modules.

3.   Answer *any two* of the following :   [10x2=20]

(a)   Explain how size – oriented metrics differ from function oriented metrics. Discuss the pros and cons of each.

(c)   Write short notes on the following :

    (i)   Extending DFD to real time systems

    (ii)   Risk management

    (iii) Project monitoring

Answer *any two* of the following :   [10x2=20]

(a)   Answer the following questions :

    (i)   Can a program be correct and still not be reliable ? Explain.

    (ii)   What is ISO 9000 certification ?

    (iii) What are the salient features of ISO 9001 requirements ?

    (iv)   What is software reliability ? Explain.

(b)   What is CASE ? What are the main advantages of using CASE tools ? Describe some of the important features that a future generation CASE tools should support.

(c)   Draw a schematic diagram of the architecture of a CASE environment and explain how the different tools are integrated.

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