KUMARAGURU
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Register Number: ……..

B.TECH DEGREE EXAMINATIONS: APRIL 2015

(Regulation 2009)

Sixth Semester

INFORMATION TECHNOLOGY

CSE113: Software Engineering

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. _____refers to the support phase of software development.
   a) Adaption b) Enhancement
   c) Feed Back d) Maintenance
2. Agile Software Development is based on_____
   a) Incremental Development b) Iterative Development
   c) Both a and b d) Linear Development
3. Which one of the following is not a step of requirement engineering?
   a) elicitation b) design
   c) analysis d) documentation
4. Which model in system modelling depicts the static nature of the system?
   a) Behavioral Model b) Context Model
   c) Data Model d) Structural Model
5. In the Analysis phase, the development of the _____ occurs, which is a clear statement of the goals and objectives of the project.
   a) documentation b) flowchart
   c) program specification d) design
6. The importance of software design can be summarized in a single word which is_____
   a) Efficiency b) Accuracy
   c) Quality d) Complexity
7. In size oriented metrics, metrics are developed based on the _____
   a) number of lines of code b) number of user inputs
   c) number of Functions d) amount of memory usage

8. A graphical technique for finding if changes and variation in metrics data are meaningful is known as ___

a) DRE (Defect Removal Efficiency) b) Control Chart

c) Function points analysis d) LOC

9. What is related to the overall functionality of the delivered software?

a) Function-related metrics b) Size-related metrics

c) Product-related metrics d) Defect -related metrics

10. When does one decides to re-engineer a product?

a) when system crashes frequently b) when tools to support restructuring are disabled

c) subsystems of a larger system require few maintenance d) when hardware or software support becomes obsolete

PART B (10 x 2 = 20 Marks)

11. List the benefits of creating a prototyping model in software engineering process.
12. Identify the key characteristics that must exist among the people on an agile team.
13. Define data modeling.
14. Tell the use of data dictionary.
15. What are the key characteristics to have of good design?
16. Mention the needs of the SCM activity in the software development process.
17. Differentiate testing and debugging.
18. Infer the types involved in computing the cyclomatic complexity.
19. Find out how function point is used for estimation of software cost.
20. What is software project scheduling?

PART C (5 x 14 = 70 Marks)

21. a) (i) Analyze and justify why spiral model is most effective of the available software engineering paradigms. (7)

(ii) Identify the advantages of using DSDM software model. (7)

(OR)

b) Explain in detail on the importance and the principles followed for the software development in agile methodology.

22. a) (i) List down the types of models that results during the requirements modeling action. Also propose the rules of thumb that should be followed when creating the analysis model.

(OR)

b) (i) The department of public works for a large city has decided to develop a Web-based pothole tracking and repair system (PHTRS). A description follows:

Citizens can log onto a website and report the location and severity of potholes. As potholes are reported they are logged within a "public works department repair system" and are assigned an identifying number, stored by street address, size (on a scale of 1 to 10), location (middle, curb, etc.), district (determined from street address), and repair priority (determined from the size of the pothole). Work order data are associated with each pothole and include pothole location and size, repair crew identifying number, number of people on crew, equipment assigned, hours applied to repair, hole status (work in progress, repaired, temporary repair, not repaired), amount of filler material used, and cost of repair (computed from hours applied, number of people, material and equipment used). Finally, a damage file is created to hold information about reported damage due to the pothole and includes citizen's name, address, phone number, type of damage, and dollar amount of damage. PHTRS is an online system; all queries are to be made interactively.

a. Draw a UML use case diagram for the PHTRS system. You will have to make a number of assumptions about the manner in which a user interacts with this system. (7)

b. Develop a class model for the PHTRS system. (7)

23. a) Why user interface design is believed to be important task in the software development process? Describe briefly on the user interface designing steps followed in the software development process.

(OR)

b) Draw DFD for safe home software application process and explain.

24. a) (i) What is meant by defect Removal Efficiency? Explain the parameters involved in calculating DRE. (7)

(ii) Identify the steps that are followed in the integrated testing and discuss how integration test is performed. (7)

(OR)

b) (i) Describe the guidelines for BVA are similar in many respects to those provided for equivalence partitioning? (7)

(ii) Distinguish between Black and White Box testing. (7)

25. a) How could you differentiate measures and metrics of Web App Projects from traditional applications in software engineering projects? Explain.

(OR)

b) How do you estimate the cost for the software you have developed? Evaluate your cost through COCOMO model.

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