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Roll No.

V Semester
B.Tech.

END SEMESTER EXAMINATION

(November-2024)

CO301 SOFTWARE ENGINEERING

Time: 3 Hours

Max. Marks: 40

Note: Answer any four questions.
Assume suitable missing data, if any.

Q1. Answer the following questions briefly:

a) Differentiate between Black Box Testing and White Box Testing with suitable examples. [CO3]

b) What are the advantages of using DFDs for requirement analysis? Mention at least three benefits and provide a brief explanation for each. [CO2]

c) Your team is developing a mobile application for online food delivery. Which software process model would you recommend for this project? Justify your choice. [CO5, 6]

[4+4+2=10] [BTL 4,2,5]

Q2. a) A software team is working on a project with the following metrics:

- Total lines of code (LOC): 10,000
- Effort per KLOC: 25 person-months
- Average productivity: 200 LOC/person-month

50,9

Calculate the total effort required and the estimated number of people required to complete the project in 6 months. [4][CO4][BTL 3]

b) A client is unhappy with the prototype of their software application. As a project manager, how would you handle this situation? Suggest three steps you would take to resolve their concerns. [2][CO1,6][BTL 6]

c) What is regression testing? Why is it important in the software lifecycle? [4][CO5][BTL 2]

Q3. a) Define coupling and cohesion in software design. How do they impact software quality? [5] [CO2,3] [BTL 2]

b) Explain and analyze the distinctions and similarities between incremental development and iterative development, focusing on their methodologies, practical applications, and impact on software project outcomes. [5] [CO1] [BTL 4]

Q4. a) A university wants to automate its admission process. As a software engineer, draw a context-level-0 and context-level-1 DFD for this system. Include:

- External entities: Applicant, Admin Office
 - Processes: Submit Application, Verify Documents, Process Fee
 - Data stores: Application Records, Payment Records
- [6] [CO3] [BTL 6]

b) You are managing a software development team for an e-commerce website. How would you ensure the quality of the software during its development? Mention any three strategies you would follow. [4][CO5] [BTL 3]

Q5. a) Define software prototyping and explain its benefits and drawbacks. [5] [CO4] [BTL 2]

b) List the importance of requirement engineering in the software development process? Explain its main steps. [5] [CO4] [BTL 1]

END