Exam Date & Time: 17-Jan-2024 (02:30 PM - 05:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SEVENTH SEMESTER B.TECH END SEMESTER MAKEUP EXAMINATIONS, JAN 2024

PRINCIPLES OF SOFTWARE ENGINEERING [CSE4306]

Marks: 50 **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates:
Answer ALL questions
Missing data may be suitably assumed

1) Differentiate between waterfall model and V model with suitable diagrams. (5)

A)

B) Explain three challenges faced by software Engineering. (3)

C) Distinguish between program and software product. (2)

2) The requirement process is the sequence of activities that need to be performed in the requirements phase and that culminates in producing a high-quality document containing the software requirements specification (SRS). Explain three different activities in requirement process. (3)

A)

B) Design a Level 0 Data Flow Diagram (DFD) for the following scenario.

Kellogg State Bank provides car and home loans to its banking customers. Initially, a potential loan customer meets with a Kellogg loan officer, requests a loan for a certain amount and time frame, and completes a loan application. Next, the loan officer determines the customer's credit standing, the type of loan required, and available interest rates. While the loan officer can authorize car loans for credit worthy customers, a loan committee must approve all home loans. (4)

C) Define the following terms in Software Configuration Management.

i.Baseline

ii.Software configuration item (3)

iii.Version

3)		What will be the outcome of first-level factoring? Illustrate how factoring is done in the input module of word count problem.	(3)
	A)		
	B)	Differentiate between top-down and bottom-up design strategies.	(4)
	C)	Design a data flow graph for transactions in an ATM.	(3)
4)		Design a Use case diagram for the following scenario. Also list the possible use cases for the scenario.	
	A)	Suppose we want to develop software for an alarm clock. The clock shows the time of day. Using buttons, the user can set the hours and minutes fields individually and choose between 12 and 24-hour display. It is possible to set one or two alarms. When an alarm fires, it will sound some noise. The user can turn it off or choose to 'snooze'. If the user does not respond at all, the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable.	(4)
	B)	Illustrate Extends and Include in use case diagram with suitable example.	(4)
	C)	Compare single inheritance and multiple inheritance in object-oriented design.	(2)
5)		Compare Incremental coding process and Test Driven Development (TDD).	(4)
	A)		
	B)	Explain any two advantages and disadvantages of white box testing.	(4)
	C)	Differentiate between unit testing and integration testing.	(2)

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