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**Question Paper Code: U4805**

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Fourth Semester

Computer Science and Engineering

21UIT405-SOFTWARE ENGINEERING METHODOLOGY

(Regulations 2021)

(Common to Information technology)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10 x 2 = 20 Marks)

1. List two deficiencies in waterfall model. Which process model do you suggest to overcome each deficiency? CO1-U
2. Draw a use case diagram for an online shopping which should provide provisions for registering, authenticating the customers and also for online payment through any of the payment system like PayPal. CO1-U
3. What are the metrics for specifying non-functional requirements? CO1-U
4. Classify the following as functional or non-functional requirements for a banking system. CO2-App
  - a) Verifying bank balance
  - b) Completion of transactions in less than one second
  - c) Withdrawing money from bank
  - d) Extending the system by providing more tellers for the customers.
5. Can we code without design? Justify your answer CO1-U
6. Mention the design heuristics for achieving effective modularity. CO1-U
7. What is meant by integration testing? CO1-U
8. What are the various black box testing techniques? CO1-U
9. What is COCOMO-II? CO1-U
10. List some of the project estimation techniques. CO1-U

PART – B (5 x 16= 80 Marks)

11. (a) Explain in detail the concept of waterfall life cycle model. CO1-U (16)  
Or  
(b) Explain in detail the types of an agile framework. CO1-U (16)
12. (a) Draw a use case and data flow diagrams for a restaurant system. CO2-App (16)  
The activities of the restaurant system are listed as below.  
Receive the customer food orders, produce the customer ordered foods, serve the customer with their ordered foods, collect payment from customers, store customer payment details, order raw materials for food products, pay for raw materials and pay for labor.  
Or  
(b) Draw an ER Diagram for Student course registration system in an university CO2-App (16)
13. (a) Illustrate various software design concepts with example. CO1-U (16)  
Or  
(b) What is UML? Explain in detail the various types of UML diagrams? CO1-U (16)
14. (a) Explain the black box testing techniques with suitable example. CO1-U (16)  
Or  
(b) Explain in detail the integration testing and system testing? CO1-U (16)
15. (a) Explain COCOMO-II Model. CO1-U (16)  
Or  
(b) Explain the necessity of risk management in a project. CO1-U (16)