

Roll No: -----



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2017

Program: B.Tech (CSE+CL)

Subject (Course): Software Engineering

Course Code : CSEG301

No. of page/s:

Semester – 5th

Max. Marks : 100

Duration : 3 Hrs

Section-A (4 Marks Each)

1. If you want to develop a word processing software product, what process model will you choose? Justify your answer.
2. Classify the following as functional/non-functional requirements for a banking system:
 - (a) Verifying Bank Balance
 - (b) Withdrawing money from bank
 - (c) Completion of Transaction in less than one second
 - (d) Extending the system by providing more tellers for customers.
3. What is risk management?
4. What is a data dictionary?
5. State the advantages and disadvantages in LOC based Cost Estimation.

Section-B (10 Marks Each)

6. Explain component level design with suitable examples. ((5 +5) Marks)
7. Consider the pseudocode for simple subtraction given below: ((5+5)Marks)
 - (1) Program 'Simple Subtraction'
 - (2) Input (x,y)
 - (3) Output(x)
 - (4) Output(y)
 - (5) if (x>y) then DO
 - (6) x-y=z
 - (7) Else y-x=z
 - (8) EndIf
 - (9)Output(z)
 - (10) Output "End Program"

Compute Cyclomatic Complexity of above pseudocode and generate test cases.

8. What is Black box Testing? Explain the different types of Black Box Testing Strategies. ((2+8)Marks)
9. Neatly explain the following models and write their advantages and disadvantages: ((5+5)Marks)
 - (a) Spiral model
 - (b) Rapid Application Development model

Section-C
(20 Marks Each)
(Attempt any two)

10. Explain the Cohesion and Coupling types with example. ((10 +10)Marks)
11. Explain integration and unit testing process with an example. ((10+10 Marks))
12. Discuss about user interface design of software with an example and neat sketch. ((10+5+5)Marks)

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Section-A (4 Marks Each)

1. What are the linkages between data flow and E-R diagram?
2. Define Risk and list its types? ((2+2) Marks)
3. Difference between Validation and Verification? ((2 + 2)Marks)
4. Depict the relationship between work product, task, activity and system
5. What is a data dictionary?

Section-B (10 Marks Each)

6. Elucidate the key features of software process models with suitable examples. ((6+4)Marks)
7. Write short note on following: ((2x5)Marks)
 - (a) User Interface Design
 - (b) Six Sigma of Software Engineering
8. What is modularity? State its importance and explain cohesion and coupling. ((2+8)Marks)
9. Describe in detail COCOMO model for software cost estimation? Use it to estimate the effort required to build software for a simple ATM that produces 12 screens, 10 reports and has 80 software components. Assume average complexity and average developer maturity. Use application composition model with object points. ((5+5)Marks)

Section-C
(20 Marks Each)

10. Consider an online railway reservation system, which allows the user to select route, book/cancel tickets using net banking/credit/Debit Cards. The site also maintains the history of the passengers. For the above system, list and draw the use case scenario and model the above specification using data flow diagram. ((10+10)Marks)

OR

Draw use case and Data Flow Diagrams for a “Restaurant System”. The activities of the Restaurant System are listed 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. ((10+10)Marks)

11. Describe the various White Box and Black Box Testing Techniques. Use Suitable examples for your explanation. ((10+10)Marks)