



SRM VALLIAMMAI ENGINEERING COLLEGE
SRM Nagar, Kattankulathur – 603203.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
QUESTION BANK

SUBJECT : CS8494 - SOFTWARE ENGINEERING

SEM / YEAR : IV/II

UNIT I - SOFTWARE PROCESS AND AGILE DEVELOPMENT

Introduction to Software Engineering, Software Process, Perspective and Specialized Process Models – Introduction to Agility-Agile process-Extreme programming-XP Process.

PART-A (2 - MARKS)

Q. No	QUESTIONS	Competence	BT Level
1.	Write the IEEE definition of software engineering.	Remember	BTL-1
2.	Demonstrate your understanding of umbrella activities of a Software process.	Apply	BTL-3
3.	If you have to develop a word processing software product, what process model will you choose? Justify your answer and examine .	Apply	BTL-3
4.	Differentiate verification and validation. Give an example.	Understand	BTL-2
5.	List the characteristics of software contrasting it with characteristics of hardware.	Remember	BTL-1
6.	Explain How do we create a process that can manage unpredictability?	Evaluate	BTL-5
7.	Identify the human factors considered for an agile software development.	Remember	BTL-1
8.	Is it possible to realize Win-Win spiral model for software. analyse	Analyze	BTL-4
9.	Summarize the pros and cons of iterative software development model.	Evaluate	BTL-5
10.	Define agile process . Give any two agile principles.	Remember	BTL-1
11.	List two deficiencies in waterfall model. Which process model do you suggest to overcome each deficiency	Remember	BTL-1
12.	Compare perspective and specialized process model.	Analyze	BTL-4
13.	Predict about XP story.	Understand	BTL-2
14.	Discuss about the various drawbacks of spiral model	Understand	BTL-2
15.	Generalize on any two characteristics of software as a product.	Create	BTL-6
16.	Show what led to the transition from product oriented development to process oriented development.	Apply	BTL-3
17.	Differentiate SDD and DDD.	Analyze	BTL-4
18.	Create six new practices that are designed to help ensure that an XP project works successfully for significant projects within a large organization.	Create	BTL-6
19.	Summarize on extreme programming.	Understand	BTL-2
20.	Why system engineers must understand the environment of a system?Give two reasons.	Remember	BTL-1

PART-B (13- MARKS)				
1.	Define software life cycle. List all life cycle models and explain spiral model with a neat diagram.	(13)	Remember	BTL-1
2.	(i) Explain atleast one scenario where a)RAD model would be applicable and not the waterfall model. b)waterfall model is preferable compare to all other models. (ii) What are the pros and cons of using mathematical approach for software development?	(7) (6)	Analyze	BTL-4
3.	(i) Describe about agile modeling in detail. (ii) Explain the component based software development model with a neat sketch	(7) (6)	Remember	BTL-1
4.	(i) Write short notes on aspect oriented software development. (ii) Explain in detail about personal process models and team process models.	(7) (6)	Evaluate	BTL-5
5.	(i) What is a process model? Describe the process model that you would choose to manufacture a car explain giving suitable reasons. (ii) Describe the various Evolutionary Process Models with neat diagram.	(7) (6)	Understand	BTL-1
6.	(i) Compare the life cycle models based on their distinguishing factors, strengths and weaknesses. (ii) Discuss the prototyping model .what is the effect of designing prototype on the overall cost of the software project?	(7) (6)	Analyze	BTL-4
7.	(i) Explain in detail about iterative and waterfall model. (ii)Write short notes on concurrent models.	(7) (6)	Analyze	BTL-4
8.	(i) Discuss in detail about Scrum. (ii) What is the significance of the spiral model when compared with other model?	(7) (6)	Understand	BTL-2
9.	(i) Discuss the Extreme Programming process. (ii) What are some of the issues that lead to an XP debate?	(7) (6)	Understand	BTL-2
10.	(i) Illustrate about agility and cost of change. (ii) What key traits must exist among the people on an effective software team?	(7) (6)	Apply	BTL-3
11.	(i) What is agility in the context of software engineering work? (ii) List the principles of agile software development.	(7) (6)	Understand	BTL-2
12.	(i) Compose your view about agile software development. (ii) Generalize your view about extreme programming.	(7) (6)	Create	BTL-6
13.	(i) Describe about pair programming and how unit tests used in XP? (ii) List the new practices appended to XP to create IXP.	(7) (6)	Remember	BTL-1
14.	(i) Explain software product engineering with its services and advantages. (ii) Write a note on the unique characters of a software.	(7) (6)	Apply	BTL-3
PART-C (15- MARK)				
1.	Generalize about system engineering hierarchy with suitable diagram and give an overview of the Business process Engineering with a diagram.	(15)	Create	BTL-6
2.	Compare the following life cycle models based on their distinguishing factors, strengths and weakness-waterfall model, AD model, Spiral Model, and Formal Methods Model.(Present in the form of table only-use diagrams wherever necessary).	(15)	Evaluate	BTL-5
3.	Explain about the umbrella activities which support software development process and discuss about their necessity in maintaining	(15)	Evaluate	BTL-5

	the quality in both software process and product that is being developed for railway reservation system.			
4.	Assume that you are the technical manager of a software development organization. A Client approached you for a software solution the problems stated by the client have uncertainties which lead to loss if it not planned and solved which software development model you will suggest for this project –justify. Explain that model With its pros and cons and neat sketch.	(15)	Evaluate	BTL-5

UNIT II- REQUIREMENTS ANALYSIS AND SPECIFICATION

Software Requirements: Functional and Non-Functional, User requirements, System requirements, Software Requirements Document – Requirement Engineering Process: Feasibility Studies, Requirements elicitation and analysis, requirements validation, requirements management-Classical analysis: Structured system Analysis, Petri Nets- Data Dictionary.

PART-A (2 - MARKS)

Q.No	QUESTIONS	BT Level	Competence
1.	Give a use case diagram for an online shopping which should provide provisions for registering authenticating the customers and also online payment through any payment gateway like PayPal.	Understand	BTL-2
2.	Define feasibility study. And list the types.	Remember	BTL-1
3.	Classify the following as functional /non-functional requirements for a banking system (a)Verifying bank balance (b) Withdrawing money from bank (c) Completion of transactions in less than one second. (d)Extending the system by providing more tellers for the customers	Apply	BTL-3
4.	Draw and explain a simple semantic data model for a library Management system	Analyze	BTL-4
5.	List the characteristics of a good system requirements specification(SRS)	Remember	BTL-1
6.	Define Quality Function Development(QFD)	Remember	BTL-1
7.	How requirements are classified ? List them with an example for each.	Apply	BTL-3
8.	Develop the spiral view of requirement engineering process.	Create	BTL-6
9.	Differentiate between normal and exciting requirement.	Understand	BTL-2
10.	Point out the problems faced when user requirements are written in natural language.	Analyze	BTL-4
11.	Distinguish between the terms inception, elicitation and elaboration with reference to requirements.	Understand	BTL-2
12.	List two advantages of using traceability tables in the requirements management phase.	Remember	BTL-1
13.	Classify the metrics for specifying non-functional requirements.	Analyze	BTL-4
14.	Express the different types of check list that should be carried out for requirement validation process.	Understand	BTL-2
15.	Explain how to manage changing requirements during the requirements elicitation process?	Evaluate	BTL-5
16.	What is meant by structural analysis and volatile requirement?	Remember	BTL-1
17.	Classify the common data Dictionary notations	Apply	BTL-3
18.	Define Petri Net and list types of traceability in a software process.	Remember	BTL-1
19.	Explain , how the requirements are validated?	Evaluate	BTL-5
20.	Generalize on the concept of data dictionary.	Create	BTL-6

PART-B (13- MARK)				
1.	(i) Differentiate functional and non-functional requirements. (ii) Give the steps involved in initiating requirements engineering.	(7) (6)	Understand	BTL-2
2.	(i) What are called as non-functional requirements? Explain in detail. (ii) Summarize on user requirements and system requirements in detail.	(7) (6)	Understand	BTL-2
3.	(i) List and explain the Three aspects that SRS should clearly document. (ii) List the characteristics of good SRS document and their components.	(7) (6)	Remember	BTL-1
4.	(i) Demonstrate the structure of requirement document. (ii) Show the possible users of requirement document.	(7) (6)	Apply	BTL-3
5.	(i) Explain the different ways of writing a system requirement specification. (ii) Describe the spiral view of system requirement.	(7) (6)	Remember	BTL-1
6.	Analyze about the requirement engineering process and how the requirements are managed.	(13)	Analyze	BTL-4
7.	(i) What is the purpose of feasibility study? (ii) State the inputs and results of the feasibility study. (iii) List any four issues addressed by a feasibility study. (iv) Elaborate the phases involved when carrying out a feasibility study.	(4) (3) (3) (3)	Remember	BTL-1
8.	What is requirement elicitation? Briefly describe the various activities performed in requirements elicitation with an example of a watch system that facilitates to set time and alarm and assess .	(13)	Evaluate	BTL-5
9.	i)What is feasibility study?how it helps in requirement engineering process. ii) How will you classify the requirement types of a project, give example. iii)List the stake holders and all types of requirements for an online train reservation system .	(5) (4) (4)	Create	BTL-6
10.	Write short notes on the list given below (i) Requirements discovery and Interviewing. (ii) Scenarios and Use cases. (iii) Ethnography.	(5) (4) (4)	Remember	BTL-1
11.	(i) Classify the different types of checks carried out on the requirements in the requirements document during the validation process. (ii) Demonstrate on the requirement validation techniques.	(7) (6)	Apply	BTL-3
12.	(i) Discuss about the requirement management planning. (ii) Describe about the requirement change management.	(7) (6)	Understand	BTL-2
13.	(i) Analyze briefly about the structural system analysis in detail. (ii) Explain about classical perti nets model.	(7) (6)	Analyze	BTL-4
14.	(i) What is the purpose of data flow diagrams? What are the notations used for the same? (ii) Explain by constructing a context flow diagram level-0 DFD and Level-1 DFD for a library management system.	(7) (6)	Analyze	BTL-4
PART-C (15 -MARKS)				
1.	Develop an online railway reservation system, which allows the user to select route, book/cancel tickets using net banking/credit/debit cards.	(15)	Create	BTL-6

	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.			
2.	Assess on software requirement specification for banking system.	(15)	Evaluate	BTL-5
3.	Draw and Explain the use case diagram for an ATM system in requirement elicitation.	(15)	Evaluate	BTL-5
4.	Develop the process of ordering a pizza over the phone. Draw the use case diagram and also sketch the activity diagram representing each step of the process, from the moment you pick up the phone to the point where you start eating the pizza. Include activities that others need to perform. Add exception handling to the activity diagram you developed. Consider at least two exceptions (e.g. delivery person wrote down wrong address, deliver person brings wrong pizza).	(15)	Create	BTL-6

UNIT III- SOFTWARE DESIGN

Design process – Design Concepts–Design Model– Design Heuristic – Architectural Design -Architectural styles, Architectural Design, Architectural Mapping using Data Flow- User Interface Design: Interface analysis, Interface Design –Component level Design: Designing Class based components, traditional Components.

PART-A (2 - MARKS)

1.	What do you interpret from design heuristics?		Understand	BTL-2
2.	List two principles of good design.		Remember	BTL-1
3.	What do you infer from the design quality attributes ‘FURPS’?		Analyze	BTL-4
4.	Draw the context flow graph of an ATM automation system.		Remember	BTL-1
5.	'A system must be loosely coupled and highly cohesive'. Justify .		Evaluate	BTL-5
6.	Define Modularity.		Remember	BTL-1
7.	Give the various types of architectural styles with example.		Understand	BTL-2
8.	What is coupling and list the various types of coupling?		Remember	BTL-1
9.	How do you apply modularization criteria for monolithic software? Discuss .		Understand	BTL-2
10.	Define mapping.		Remember	BTL-1
11.	Analyze an UI design pattern are used for the following. i) Page layout ii) Tables iii) Navigation through menus and webpages iv) Shopping cart.		Analyze	BTL-4
12.	Distinguish between transform flow and transaction flow.		Understand	BTL-2
13.	List the basic design principles of class based component.		Remember	BTL-1
14.	Point out the steps that are applied to develop a decision table in tabular design notation.		Analyze	BTL-4
15.	Classify the four distinct frame work activity in the user interface analysis and design process.		Apply	BTL-3
16.	Design the architectural context diagram.		Create	BTL-6
17.	In case of user interface analysis, assess the steps that are taken for understanding the problems.		Evaluate	BTL-5
18.	Classify the user interface design steps.		Apply	BTL-3
19.	Show the facilities to be provided in a system to recover users from the mistakes.		Apply	BTL-3
20.	Generalize on the concept of user interface design pattern.		Create	BTL-6

PART-B (13- MARKS)				
1.	Explain the following list of design concept (i) Abstraction and Modularity (ii) Patterns (iii) Functional independence	(5) (4) (4)	Remember	BTL-1
2.	Explain about software architecture design, with emphasize as fan in, fan-out, coupling, cohesion and factoring.	(13)	Evaluate	BTL-5
3.	Analyze your understanding on the following design models (i) Data design elements and Architectural design elements. (ii) Interface design elements and Component-level design elements. (iii) Deployment-level design elements.	(5) (4) (4)	Analyze	BTL-4
4.	(i) Demonstrate in detail about architectural design. (ii) Illustrate in detail about any four architectural styles.	(7) (6)	Apply	BTL-3
5.	(i) Give the steps involved in transform mapping. (ii) Discuss transform mapping with example.	(7) (6)	Understand	BTL-2
6.	(i) List the steps involved in transaction mapping. (ii) Describe transaction mapping with example.	(7) (6)	Remember	BTL-1
7.	(i) Discuss the basic design principles of class based components. (ii) Discuss the component-level design guidelines.	(7) (6)	Remember	BTL-2
8.	Describe the various coupling and cohesion methods used in software design.	(13)	Understand	BTL-2
9.	Examine Architectural Styles. (i) Data centered Architecture and Data Flow Architecture. (ii) Call and Return Architecture and Object Oriented Architecture. (iii) Layered Architecture.	(5) (4) (4)	Apply	BTL-3
10.	(i) Analyze on the concept of graphical design notation. (ii) Explain Tabular Design Notation.	(7) (6)	Analyze	BTL-4
11.	i) Describe about user interface analysis in detail. ii) Explain the general model of a real time system.	(7) (6)	Remember	BTL-1
12.	(i) Generalize on the concept of user interface design and list the characteristics of a good user interface design (ii) Develop the design issues in interface design.	(7) (6)	Create	BTL-6
13.	(i) Analyze about program design language in designing conventional components. (ii) Classify and explain the various architectural styles in detail.	(7) (6)	Analyze	BTL-4
14.	i) What are? Describe how UID may be developed for a data acquisition system. ii) Discuss the design heuristics for effective modularity design.	(7) (6)	Remember	BTL-1
PART-C(15 -MARKS)				
1.	Model a Dataflow diagram for a "Library Management System". State and explain the functional requirements you are considering.	(15)	Evaluate	BTL-5
2.	What is the purpose of DFD ?what are the components of DFD? Design DFD for the following system: An on-line shopping system for XYZ provides many services and benefits to its members and staffs. Currently ,XYZ staffs manually handle the purchasing information with the use of basic office software, such ass Microsoft office word and excel.it may results in having mistakes easily and the process is very inconvenient .XYZ needs an online shopping system at their intranet based on the requirement of users. XYZ online shopping system has 5 key features:	(15)	Create	BTL-6

	<p>i) to provide the user friendly online shopping cart function to members to replace hardcopy ordering form.</p> <p>ii) to store inventory and sales information in data base to reduce the human mistakes, increase accuracy and enhance the flexibility of information processing.</p> <p>iii) to provide an efficient inventory system which can help the XYZ staffs to gain enough information to update the inventory.</p> <p>iv) to able to print invoice to members and print a set of summary reports for XYZ internal usage.</p> <p>v) to design the system that is easy to maintain the upgrade.</p>			
3.	Summarize on the Hierarchical concept of user interface design and Draw the swim lane diagram for prescription refill function.	(15)	Evaluate	BTL-5
4.	Rewrite the concept of OCP in your own words. Why is it important to create abstraction that serve as an interface between components?	(15)	Create	BTL-6
UNIT IV- TESTING AND MAINTENANCE				
Software testing fundamentals-Internal and external views of Testing-white box testing – basis path testing-control structure testing-black box testing- Regression Testing – Unit Testing – Integration Testing – Validation Testing – System Testing And Debugging –Software Implementation Techniques: Coding practices-Refactoring-Maintenance and Reengineering-BPR model-Reengineering process model-Reverse and Forward Engineering.				
PART-A (2 -MARKS)				
1.	Describe the objectives of testing. What is "cyclomatic complexity"? Point out its primary use.		Remember	BTL-1
2.	Analyze on what is a "good" test and List two principles of good design.		Analyze	BTL-4
3.	Differentiate verification and validation. Which type of testing address verification? Which type of testing address validation?		Understand	BTL-2
4.	Identify What methods are used for breaking very long expression and statement.		Remember	BTL-1
5.	What is flow graph notation and show how it is important in white box testing?		Remember	BTL-1
6.	Measure the performance of equivalence partitioning.		Evaluate	BTL-5
7.	What is controllability in testing?		Remember	BTL-1
8.	Point out the purpose of stud and driver used for testing.		Analyze	BTL-4
9.	What are the generic characteristics of software testing?		Remember	BTL-1
10.	Summarize various testing strategies for conventional software?		Understand	BTL-2
11.	Examine how the software Testing results related to the reliability of the software.		Remember	BTL-1
12.	Between "statement coverage and Branch Coverage", Examine which is a stronger criteria? Why?		Apply	BTL-3
13.	Identify and analyze the type of maintenance for each of the following: a) Correcting the software faults. b) Adapting the change in environment.		Apply	BTL-4
14.	Give the testing principles the software engineer must apply while performing the software testing.		Understand	BTL-2
15.	Generalize your opinion about Smoke Testing.		Create	BTL-6
16.	Classify the Reverse Engineering process.		Apply	BTL-3
17.	Show your understanding on maintainability.		Apply	BTL-3
18.	Generalize on What options exist when we are faced with a poorly designed and implemented program?		Create	BTL-6

19.	Give the software reengineering activities.		Understand	BTL-2
20.	Assess on BPR model with neat diagram.		Evaluate	BTL-5
PART-B (13- MARKS)				
1.	Describe the type's basic path testing given. (i)Flow graph notation. (ii) Independent program paths.	(7) (6)	Remember	BTL-1
2.	What is black box testing? Explain the different types of black box testing strategies. Explain by considering suitable examples.	(13)	Analyze	BTL-4
3.	(i) Write elaborately on unit testing. How do you develop test suites. (ii) Explain how to broaden testing coverage and improve the quality of white box-testing.	(7) (6)	Remember	BTL-1
4.	(i) What is cyclomatic complexity and what are the ways to compute it? (ii) Give the steps to select the path in data flow testing. (iii) Explain how the various types of loops are tested.	(5) (4) (4)	Understand	BTL-2
5.	(i) Describe in detail about software testing strategies. (ii) Explain in detail about any one control structure testing.	(7) (6)	Remember	BTL-1
6.	(i) Summarize on Top-down Integration testing and Bottom -up integration testing . (ii) Describe business process reengineering.	(7) (6)	Understand	BTL-2
7.	(i)How would you apply your understanding about Software implementation techniques. (ii) What is refactoring? when is it needed? Explain with an example.	(7) (6)	Apply	BTL-3
8.	(i) Analyze on equivalence partitioning. List rules used to define valid and invalid equivalence classes. explain the technique using examples. (ii) What is boundary value analysis? Explain the technique specifying rules and its usage with the help of an example.	(7) (6)	Analyze	BTL-4
9.	(i)What conclusions can you draw from regression testing? Support your answer with a neat sketch. (ii)explain the list given below (a) Reverse Engineering to Understand Data. (b) Reverse Engineering to Understand Processing. (c) Reverse Engineering User Interfaces.	(7) (6)	Evaluate	BTL-5
10.	Write a generalize concept on the following system testing (i) Recovery testing and Security testing. (iii) Orthogonal array testing and Graph-based testing.	(7) (6)	Create	BTL-6
11.	(i) Describe in detail about BPR model with a neat diagram. (ii) Explain Forward Engineering in detail.	(7) (6)	Remember	BTL-1
12.	Apprise and analyze the purpose of system testing with a high level explanation on all its types.	(13)	Analyze	BTL-4
13.	(i) What is the purpose of software reengineering? Explain with a neat diagram. (ii) Summarize the activities involved in software reengineering.	(7) (6)	Understand	BTL-2
14.	(i) Illustrate in detail about Reverse engineering process. (iii) Explain Forward Engineering for Client-Server Architectures.	(7) (6)	Apply	BTL-3
PART-C (15-MARKS)				
1.	Consider the following program segment. /*num is the number of function searches in a presorted integer array arr*/ int bin_search(int num) {	(15)	Evaluate	BTL-5

	<pre>int min , max; min=0; max=100; while(min!=max) { if(arr[(min+max)/2]>num) max=(min+max)/2; else if(arr[(min+max)/2] min=(min+max)/2; else return((min+max)/2); } return(-1); }</pre> <p>(i) Draw the control flow graph for this program segment. (ii) Define cyclomatic complexity. (iii) Determine the cyclomatic complexity for this program. (Show the intermediate steps in your computation. writing only the final result is not sufficient)</p>			
2.	<p>Consider the pseudocode for simple subtraction given below: Program 'Simple Subtraction' Input (x,y) Output(y) If x> y then DO x-y=z else y-x=z endif output(z) output 'End Program'</p> <p>perform the basic path testin and generate test cases .Explain black box and white box testing.</p>	(15)	Evaluate	BTL-5
3.	<p>Given a set of numbers 'n', the function findprime(a[],n) prints a number if it is a prime number. Draw a control flow graph, calculate the cyclomatic complexity and enumerate all paths. State how many test cases are needed to adequately cover the code in terms of branches, decisions and statement? Develop the necessary test cases using sample values for 'a' and 'n'.</p>	(15)	Create	BTL-6
4.	<p>Generalize on forward and reverse engineering process in detail.</p>	(15)	Create	BTL-6
UNIT V-PROJECT MANAGEMENT				
Software Project Management: Estimation – LOC, FP Based Estimation, Make/Buy Decision COCOMO I & II Model – Project Scheduling – Scheduling, Earned Value Analysis Planning – Project Plan, Planning Process, RFP Risk Management – Identification, Projection – Risk Management-Risk Identification-RMMM Plan-CASE TOOLS				
PART-A (2 -MARKS)				
1.	Define risk. What are its type? Give an example.		Remember	BTL-1
2.	What is version control?		Analyze	BTL-1
3.	Organic software occupies 15,000 LOC. Assess how many programmers are needed to complete.		Evaluate	BTL-5
4.	Analyze on how are the software risks assessed.		Analyze	BTL-4
5.	List out the principles of project scheduling.		Remember	BTL-1
6.	Discuss is there a systematic way to sort through the options associated with the make/buy decision?		Understand	BTL-2
7.	Give the purpose of LOC based estimation.		Understand	BTL-2
8.	Compare size oriented and function oriented metrics.		Evaluate	BTL-5

9.	Predict on what is RFP risk Management.		Understand	BTL-2
10.	Examine ZIPF's law.		Remember	BTL-1
11.	Describe Earned Value Analysis.		Remember	BTL-1
12.	Give some steps in project planning.		Understand	BTL-2
13.	Relate task set and network.		Apply	BTL-3
14.	Generalize on how productivity and cost related to function points.		Create	BTL-6
15.	List the two characteristics of software risk.		Remember	BTL-1
16.	What are predictable risk? Classify some categories of predictable risk.		Analyze	BTL-4
17.	What do you infer from RMMM?		Analyze	BTL-4
18.	Write a note on Risk Information Sheet(RIS).		Apply	BTL-3
19.	Show the basic principles that guide software project scheduling.		Apply	BTL-3
20.	Generalize on the concept of project metrics.		Create	BTL-6
PART-B(13 MARKS)				
1.	(i) Examine the activities associated with project process planning. (ii) Write short notes on earned value analysis for project tracking.	(7) (6)	Remember	BTL-1
2.	(i) What elements used in COCOMO II model? (ii) Explain in detail about the COCOMO II model for software estimation.	(7) (6)	Analyze	BTL-4
3.	How do you compute Earned Value Analysis and use it to assess progress.	(13)	Create	BTL-5
4.	Develop a program for sorting of n numbers. Draw the flow chart, Flow graph, find out the cyclomatic complexity.(MAKE AND BUY)	(13)	Evaluate	BTL-6
5.	(i) Summarize on purpose of Delphi method .state advantages and disadvantages of the method. (ii) Discuss the steps involved in project planning. (iii)State ZIPF's law.	(5) (4) (4)	Understand	BTL-2
6.	Demonstrate on the following list given below (i) Function Point estimation. (ii) LOC based estimation.	(7) (6)	Apply	BTL-3
7.	Describe in detail about the following scheduling (i) Timeline charts. (ii) Tracking the schedule. (iii) Tracking progress for an OO project.	(5) (4) (4)	Remember	BTL-1
8.	(i) Explain in detail about risk identification. (ii) Analyze on the concept of risk Projection.	(7) (6)	Analyze	BTL-4
9.	(i) Discuss about risk management in a software development life cycle. (ii) Discuss on the concept of RMMM.	(7) (6)	Understand	BTL-2
10.	Discuss the process of functional point analysis. Explain the function point analysis with sample cases for components of different complexity. (ii) Describe a task set for the software project.	(7) (6)	Remember	BTL-1
11.	(i) Explain in detail COCOMO model for software cost estimation. (ii) if a team A found 342 errors prior to release of software and team B found 182 errors .what additional measures and metrics are needed to find out if the teams have removed the errors effectively? Analyze .	(7) (6)	Analyze	BTL-4
12.	Apply COCOMO-II model to estimate total time and effort required to develop a software of KLOC 230. (ii) Outline the importance of "project scheduling and use of Gantt charts".	(7) (6)	Apply	BTL-3

13.	Consider the following Function point components and their complexity. If the total degree of influences is 52, Predict the estimated function points.			(13)	Understand	BTL-2
	Function type	Estimated count	complexity			
	ELF	2	7			
	ILF	4	10			
	EQ	22	4			
	EO	16	5			
EI	24	4				
14.	(i) Describe in detail about Process Metrics.			(7)	Remember	BTL-1
	(ii) How should we use metrics during the project itself?			(6)		
PART-C(15 MARKS)						
1.	Compute and prepare function point value for a project with the following information domain characteristics.			(15)	Create	BTL-6
	No. of external inputs-30					
	No. of external outputs - 52					
	No. of external inquiries-22					
	No. of logical files-12					
	No. of external interface files-2					
Assume complexity adjustment values for the above are average (4,5,4,10,7 respectively).						
2.	Prepare RIS Sheets for any two risk associated with "Automated Airline controller" software.			(15)	Create	BTL-6
3.	Explain in detail about 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.			(15)	Evaluate	BTL-5
4.	Suppose you have a budget cost of a project as Rs.9, 00,000.The project is to be completed in 9 months. After a month, you have completed 10 percent of the project at a total expense of Rs.1, 00,000.The planned completion should have been 15 percent .you need to evaluate whether the project is on-time and on-budget? Use Earned Value analysis approach and interpret.			(15)	Evaluate	BTL-5