INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

INFORMATION TECHNOLOGY

DEFINITIONS AND TERMINOLOGY QUESTION BANK

Course Name	:	**SOFTWARE PROCESS AND PROJECT MANAGEMENT**
Course Code	:	**AIT512**
Program	:	**B.Tech**
Semester	:	**VI**
Branch	:	**Information Technology**
Section	:	**A**
Course Faculty	:	**Mr. E Sunil Reddy, Assistant Professor**

COURSE OBJECTIVES:

The course should enable the students to:	
I	Understand overall software development life cycle and adopt suitable processes..
II	Analyze, prioritize, and manage both functional and quality requirements.
III	Estimate efforts required, plan, and track the plans.
IV	Understand and apply configuration and quality management techniques.

DEFINITIONS AND TERMINOLOGYQUESTION BANK

S.No	QUESTION	ANSWER	Blooms Level	CO	CLO	CLO Code
		MODULE-I				
1	What is process?	A process is an instance of a program running in a computer	Understand	CO 1	CLO 3	AIT512.03
2	Define Personal Software Process?	PSP is a structured software development process that is intended to help software engineers understand and improve their performance, by using a "disciplined, data-driven procedure"	Remember	CO 1	CLO 1	AIT512.01
3	What is Team Software Process?	The team software process (TSP) provides a defined operational process framework that is designed to help teams of managers and engineers organize projects and produce software the principles products that range in size from small projects of several thousand lines of code (KLOC) to very large projects greater than half a million lines of code.	Remember	CO 1	CLO 1	AIT512.01
4	Define Unified Process and agile	It describes a simple, easy to understand approach to	Remember	CO 1	CLO 1	AIT512.01

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	Process?	developing business application software using agile techniques and concepts yet still remaining true to the RUP				
5	What are the software development activities?	Software development is the process of conceiving, specifying, designing, programming, documenting, testing, and bug fixing involved in creating and maintaining applications, frameworks, or othersoftware components.	Remember	CO 1	CLO 1	AIT512.01
6	What are the types of software development model?	The most used, popular and important SDLC models are given below: Waterfall model Iterative model Spiral model V-shaped model Agile model	Remember	CO 1	CLO 3	AIT512.03
7	Which projects that waterfall model and spiral model applicable?	Waterfall model is applicable for small project, While Spiral model is used for large project	Remember	CO 1	CLO 1	AIT512.01
8	Define Iterative and incremental development?	During software development, more than one iteration of the software development cycle may be in progress at the same time." and "This process may be described as an 'evolutionary acquisition' or 'incremental build' approach."	Remember	CO 1	CLO 1	AIT512.01
9	What is agile development process?	Agile software development refers to software development methodologies centered round the idea of iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.	Remember	CO 1	CLO 1	AIT512.01
10	Define Rapid Application development?	Rapid Application Development is a development model prioritizes rapid prototyping and quick feedback over long drawn out development and testing cycles.	Remember	CO 1	CLO 1	AIT512.01
11	Write the TSP principles.	Use structured processes Use proven techniques Practice self-management Focus on quality Regard design as a fundamental element of quality work	Remember	CO 1	CLO 3	AIT512.03
12	What are the stages in SDLC?	Given below are the various phases of SDLC: Requirement gathering and analysis	Remember	CO 1	CLO 1	AIT512.01

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		Design Implementation or coding Testing Deployment Maintenance				
13	What is prototype model?	The Software Prototyping refers to building software application prototypes which displays the functionality of the product under development, but may not actually hold the exact logic of the original software.	Understand	CO 1	CLO 1	AIT512.01
14	What is the purpose of PSP?	The PSP aims to provide software engineers with disciplined methods for improvingpersonal software development processes.	Remember	CO 1	CLO 2	AIT512.02
15	What are the levels in PSP structure?	Base line personal process (PSP0) Personal planning process (PSP1) Personal quality management (PSP2) Cyclic personal process (PSP3)	Remember	CO 1	CLO 3	AIT512.03
MODULE-II						
1	Define functional requirements.	A functional requirement document defines the functionality of a system or one of its subsystems	Remember	CO 2	CLO 5	AIT512.05
2	Mention quality attributes.	Correctness, Reliability, Adequacy, , Robustness, Maintainability, Readability, Extensibility, Testability, Efficiency, Portability	Remember	CO 2	CLO 5	AIT512.05
3	Give the advantages and disadvantages of elicitation techniques.	Advantages: • Collecting the rich and detailed data • Collecting information to design a survey or other usability activity • Getting a holistic view of the whole system • Disadvantages: • Collecting data from large samples or people • Collecting data very rapidly is not feasible	Understand	CO 2	CLO 7	AIT512.07
4	What are the different elicitation techniques?	Interviews Brain Storming Focus Groups Exploratory Prototypes User Task Analysis Observation Surveys Questionnaire Story Board	Understand	CO 2	CLO 9	AIT512.09
5	What is brainstorming?	It is a group creativity technique by which efforts are	Understand	CO 2	CLO 9	AIT512.09

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		made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members.				
6	Define rapid prototyping.	Rapid prototyping is an agile strategy used throughout the product development process. With this approach, 3-dimensional prototypes of a product or feature are created and tested in an attempt to optimize characteristics like shape, size, and overall usability.	Remember	CO 2	CLO 5	AIT512.05
7	Define QAW.	(QAWs) provide a method for identifying a system's architecture-critical quality attributes, such as availability, performance, security, interoperability, and modifiability, that are derived from mission or business goals	Remember	CO 2	CLO 5	AIT512.05
8	Define trade-off.	is a situational decision that involves diminishing or losing one quality, quantity or property of a set or design in return for gains in other aspects	Remember	CO 2	CLO 7	AIT512.07
9	What is ACDM?	Software development approach in which the description of the architecture is the heart and central concern of the process. The use of this approach permits the (abstract) architectural description to be checked, refined and designed in order to obtain more concrete descriptions that will be executed	Remember	CO 2	CLO 5	AIT512.05
10	Give the goals for ACDM.	Validate that the architecture will meet the expectations once implemented. • Define meaningful roles for team members to guide their efforts. • Create better estimates and schedules based on the architectural blueprint. • Provide insight into project performance. • Establish a lightweight, scalable, tailorable, repeatable process framework	Remember	CO 2	CLO 7	AIT512.07
11	List out the stages in ACDM.	Architecture Requirement analysis, Architecture design, Architecture documentation, Architecture evaluation	Remember	CO 2	CLO 9	AIT512.09
12	Define requirements document.	A product requirements document (PRD) is a documentcontaining all the requirements to a certain product. It is written to allow people to understand what a	Remember	CO 2	CLO 7	AIT512.07

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		product should do.				
13	Define specification.	Software requirements specification document describes the intended purpose, requirements and nature of a software to be developed	Remember	CO 2	CLO 9	AIT512.09
14	Give the example for requirements document.	Requirements Specification document for a new web-based sales system for Solar Based Energy, Inc. (SBE). SBE is a distributor of alternative energy products including windmills, photovoltaics and fuel cells.	Remember	CO 2	CLO 9	AIT512.09
15	What is change management?	Change management is the process, tools and techniques to manage the people side of change to achieve the required business outcome.	Remember	CO 2	CLO 9	AIT512.09
MODULE-III						
1	What is use case point?	Isa software estimation technique used to forecast the software size for software development projects. UCP is used when the Unified Modeling Language(UML) and Rational Unified Process (RUP) methodologies are being used for the software design and development.	Understand	CO 3	CLO 13	AIT512.013
2	Define function point?	A function point is a "unit of measurement" to express the amount of business functionality an information system (as a product) provides to a user.	Remember	CO 3	CLO 13	AIT512.013
3	What is Environmental Complexity Factor?	factor applied to the estimated size of the software in order to account for environmental considerations of the system. It is determined by assigning a score between 0 (no experience) and 5 (expert) to each of the 8 environmental factors	Remember	CO 3	CLO 11	AIT512.011
4	What is Estimation?	is the process of finding an estimate, or approximation, which is a value that is usable for some purpose even if input data may be incomplete, uncertain, or unstable.	Remember	CO 3	CLO 13	AIT512.013
5	Define COCOMO?	Cocomo (Constructive Cost Model) is a regression model based on LOC, i.e number of Lines of Code. It is a procedural cost estimate model for software projects and often used as a process of reliably predicting the various parameters associated	Remember	CO 3	CLO 11	AIT512.011

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		with making a project such as size, effort, cost, time and quality.				
6	What is top down estimation	Top-down estimating is a technique used by upper level management to estimate the total cost of a project by using information from a previous, similar project	Understand	CO 3	CLO 13	AIT512.013
7	What is bottom up estimation?	In bottom-up estimating, each task is broken down into smaller components. Then, individual estimates are developed to determine what specifically is needed to meet the requirements of each of these smaller components of the work.	Remember	CO 3	CLO 15	AIT512.015
8	Define work breakdown structure?	Work breakdown structure (or WBS) is a hierarchical tree structure that outlines your project and breaks it down into smaller, more manageable portions.	Understand	CO 3	CLO 13	AIT512.013
9	What is macro plan? Write it use	The Macro or Top-Down approach can provide a quick but rough estimate– Done when the time and expense of a detailed estimate are an issue	Remember	CO 3	CLO 15	AIT512.015
10	define micro plan and Write its use	A Micro or Bottom-Up approach can provide a fairly accurate estimate, but is time consuming – Takes into account the project design and a "roll-up" of WBS elements	Remember	CO 3	CLO 13	AIT512.013
11	Define planning poker?	Planning poker, also called Scrum poker, is a consensus-based technique for estimating, mostly used to estimate effort or relative size of development goals in software development	Remember	CO 3	CLO 13	AIT512.013
12	Define Earned Value Method?	It is a project management performance and progress in an objective manner	Remember	CO 3	CLO 15	AIT512.015
13	Define software project planning?	This is used as a reference index, encompassing all planningand project documents	Remember	CO 3	CLO 15	AIT512.015
14	What is the procedure for Tracking the project schedule or plan?	This keeps track of the activities, work packages resources, durations, costs, milestones, project's critical path, etc.	Remember	CO 3	CLO 15	AIT512.015
15	What is Wideband Delphi	is a consensus-based technique for estimatingeffort. To estimate many kinds of tasks, ranging from statistical data collection results to sales and marketing forecasts.	Remember	CO 3	CLO 11	AIT512.011

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		MODULE-IV				
1	Define instance configuration	The instance configuration is a set of files that control the ITL process and the data loaded into the MDEX Engine servers	Remember	CO 4	CLO 16	AIT512.016
2	Name configuration control tasks	initiating, preparing, analyzing, evaluating and authorizing	Remember	CO 4	CLO 16	AIT512.016
3	List the procedures involved in software process	Creating/updating coding standards Creating/updating design guideline Creating/updating requirements Creating/updating use cases Creating/updating build scripts Creating/updating test cases Creating/updating user documentation Creating/updating training guide	Remember	CO 4	CLO 16	AIT512.016
4	Define naming convention	This process describes the deliverable types, naming conventions and version control mechanisms to be applied to deliverables produce by the project	Remember	CO 4	CLO 16	AIT512.016
5	What are the potential benefits of naming convention?	Document -Specifications, Test Plans, Test Results, Document – ProjectManagement	Remember	CO 4	CLO 16	AIT512.016
6	Define version control systems?	Manual – viaversion numbering Automated Version Control-Approval Cycle	Remember	CO 4	CLO 16	AIT512.016
7	Define configuration control?	Its purpose is to ensure that all changes to a complex system are performed with the knowledge and consent of management	Remember	CO 4	CLO 16	AIT512.016
8	List the Quality assurance techniques?	Methods: Black box testing, White box testing, Unit testing, Integration testing, Functional testing, System testing, End-to-end testing	Remember	CO 4	CLO 16	AIT512.016
9	What is the role of QA in software assurance?	It is responsible for gathering and presenting Software metrics.	Remember	CO 4	CLO 16	AIT512.016
10	Define Total quality management?	a system of management based on the principle that every member of staff must be committed to maintaining high standards of work in every aspect of a company's operations.	Remember	CO 4	CLO 17	AIT512.017
11	Define Fagan inspection.	A Fagan inspection is a process of trying to find defects in documents (such as source code or formal specifications) during	Remember	CO 4	CLO 17	AIT512.017

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		various phases of the software development process				
12	Define peer review?	Peer review is the evaluation of work by one or more people with similar competences as the producers of the work (peers).	Remember	CO 4	CLO 17	AIT512.017
13	What are the types of peer review?	The most common types are: Single-blind	Remember	CO 4	CLO 17	AIT512.017
14	Define test data?	Test data is the data that is used in tests of a software system.	Remember	CO 4	CLO 17	AIT512.017
15	What is Quality Assurance?	It is defined as an activity to ensure that an organization is providing the best possible product or service to customers.	Remember	CO 4	CLO 17	AIT512.017
		MODULE-V				
1	What is project management?	A project is a unique, transient endeavor, undertaken to achieve planned objectives, which could be defined in terms of outputs, outcomes or benefits.	Remember	CO 5	CLO 21	AIT512.021
2	What are the five essential elements of project management?	Strategic Planning Product Development Communication Resources People	Remember	CO 5	CLO 21	AIT512.021
3	How process architecture differs from process design?	Process architecture refers to the hierarchal design of processes and systems that are applied when transforming inputs into outputs. Design refers to a data-driven quality strategy for designing products & processes	Remember	CO 5	CLO 21	AIT512.021
4	List out the various process data.	Analysis, Design, Coding etc	Remember	CO 5	CLO 23	AIT512.023
5	Give the life cycle of workflow.	Creation, Activation and Execution, Waiting, and Completion and Deletion.	Understand	CO 5	CLO 21	AIT512.021
6	What are the various coverage states of process?	five types of coverage Activity-oriented: Product-oriented: Decision-oriented: Context-oriented: Strategy-oriented:	Understand	CO 5	CLO 21	AIT512.021
7	Define process model	All process work is ultimately directed at 'software process assessment and improvement	Understand	CO 5	CLO 22	AIT512.022
8	What is the abstraction level of processes.	Complex processes are made up of several processes that are in turn madeup of several processes. This results in an overall structural hierarchy of abstraction	Understand	CO 5	CLO 23	AIT512.023
9	What are the goals of process model?	Descriptive Prescriptive Explanatory	Understand	CO 5	CLO 23	AIT512.023

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10	Expand ETVX concept.	(E)ntry Criteria (T)asks (V)alidation (E)xit	Understand	CO 5	CLO 23	AIT512.023
11	Phases in ETVX.	Design, building, testing are the phases in ETVX	Remember	CO 5	CLO 21	AIT512.021
12	What are the steps involved in process base lining?	1)Develop a clearly defined baseline in your organization 2)Identify the organizations you desire to baseline against 3)Compare baseline calculations 4)Identify the cause of baseline variance in the organization you benchmarked against	Remember	CO 5	CLO 22	AIT512.022
13	Define CMMI.	maturity level is a well-defined evolutionary plateau toward achieving a mature software process. Each maturity level provides a layer in the foundation for continuous process improvement	Remember	CO 5	CLO 23	AIT512.023
14	List out the various levels of CMMI model.	1. Initial 2. Managed 3. Defined 4. Quantitatively Managed 5. Optimizing	Remember	CO 5	CLO 21	AIT512.021
15	What is six sigma?	Six Sigma is a disciplined, statistical-based, data-driven approach and continuous improvement methodology for eliminating defects in a product, process or service.	Remember	CO 5	CLO 23	AIT512.023

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