Fast Track Webinar Series

VISA *for* DISA

Day 3

ICAI Information Systems Audit 3.0 Course

for JAN 2025 AT

INFORMATION SYSTEMS AUDIT 3.0 COURSE

Module - 3

System Development, Acquisition, Implementation and Maintenance

Application System Audit

Thursday ◊ 16th Jan 2025 ◊ 08:30 AM to 09:30 AM ◊ www.3spro.blogspot.com

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Pointers

- Read the ICAI Study Material minimum 2 - 3 times for getting clarity and confidence
- **Exam Preparation Tip:** Practice eliminating the three choices by reasoning
- All references made in this material is based on the following BGM of ICAI – Module 3 - SDLC

https://resource.cdn.icai.org/60973daab49637bgmisa-mod3.pdf

Reference Material for ICAI ISA PQC

Basic

- ISA Background Material 3.0
- DISA AT Mock Test Papers

Additional

- ISA2.0 Module 5
- CISA Review Manual 27th Edition.
- https://www.iso.org/standard/35733.html
- https://www.iso.org/standard/35747.html
- https://csrc.nist.gov/csrc/media/publications/conferencepaper/1996/10/22/proceeding- of-the-19th-nissc-1996/documents/paper001/article.pdf

Snapshot

Module	Contents	Pages	Questions
1	Information Systems Audit Process	185	60
2	GRC & BCM	149	50
3	SDLC	133	34
4	IS Operations & Management	97	
5	Protection of Information Assets	125	
6	Emerging Technologies	77	
Total		**766**	

Module 3

Systems Development, Acquisition, Implementation and Maintenance; Application Systems Audit

Project Management for SDLC	**1**
SDLC – Need, Benefits and Phases	**2**
Software Testing & Implementation	**3**
Application Controls	**4**

ISA 3.0

Weightage	Modules
18%	Information Systems Process Audit
14%	Governance and Management of Enterprise Information Technology, Risk Management, Compliance and Business Continuity Management
14%	System Development, Acquisition, Implementation and Maintenance Application System Audit
18%	Information Systems Operations and Management
18%	Protection of Information Assets
18%	Emerging Technologies

ISA AT Exam Focus areas - अंतिम मिनट की तैयारी

a) DBA vs. DA – Page 19

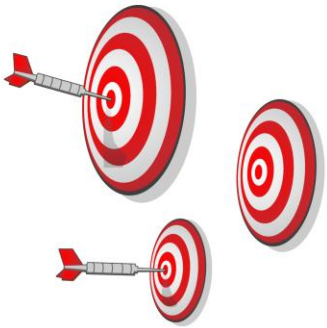
b) Software Engineering vs. Reverse Engineering – Page 47

c) DevOps vs DevSecOps – Page 64

d) New Development Models – PSRA – Prototype / Spiral / Rapid / Agile – Page 54 – 61

e) Final Testing – QA vs UA – Page 84

f) Change Management – EC – Page 92



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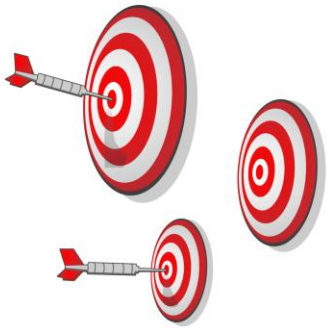
ISA AT Exam Focus areas - अंतिम मिनट की तैयारी

g) Assurance - Application Controls – Page 109

h) Risk associated with Business Processes & Information Processing – Page 109

i) Application Control Objectives – Page 105

j) Application Control Criteria – Page 105



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Chapter 1

Project Management for SDLC

Effective software project management focuses on the four P's: **people, product, process, and project**. The order is not arbitrary.

- *The manager who forgets that software engineering work is an intensely human endeavour will never have success in project management.*
- *A manager who fails to encourage comprehensive stakeholder communication early in the evolution of a product risks building an elegant solution for the wrong problem.*
- *The manager who pays little attention to the process runs the risk of inserting competent technical methods and tools into a vacuum.*
- *The manager who embarks without a solid project plan jeopardizes the success of the project.*

1. Who among the following is responsible for ongoing facilitation of a SDLC project?

a) Project Sponsor

b) Project Manager

c) Steering Committee

d) Board of Directors

Page 16; Para 1.9.2

An IT project manager is responsible for overseeing an organization's IT department and managing teams to execute IT projects on time and within budget.
Some of the duties of an IT project manager include: Setting project goals and creating plans to meet them; Managing resources, including the team, equipment, etc

2. A Multi-National organization has decided to implement an ERP solution across all geographical locations. The organization shall initiate a:

a) Project

b) Program

c) Portfolio

d) Feasibility study

Page 4; Para 1.4.1

The first software project management activity is the determination of *software scope*. Scope is defined by answering the following questions:

Context. How does the software to be built fit into a larger system, product, or business context, and what constraints are imposed as a result of the context?

Information objectives. What customer-visible data objects are produced as output from the software? What data objects are required for input?

Function and performance. What function does the software perform to transform input data into output? Are any special performance characteristics to be addressed?

3. Which of the following primarily helps Project Manager in mitigating the risk associated with change in scope of software development project?

a) Change Management Process

b) Use of Prototyping

c) Revising Effort Estimates

d) Baselining requirements

Page 11; Para 1.7

A *baseline* is a software configuration management concept that helps you to control change without seriously impeding justifiable change. The IEEE (IEEE Std. No. 610.12-1990) defines a baseline as:

> A specification or product that has been formally reviewed and agreed upon, that thereafter serves as the basis for further development, and that can be changed only through formal change control procedures.

Before a software configuration item becomes a baseline, changes may be made quickly and informally. However, once a baseline is established, changes can be made, but a specific, formal procedure must be applied to evaluate and verify each change.

4. Monitoring which of the following aspect of SDLC project shall help organization in benefit realization over sustained period of time?

a) Quality

b) Budget

c) Schedule

d) Methodology

Page 15; Para 1.8

Function Point Analysis (FPA)

- The **function point** is a "unit of measurement" to express the amount of business functionality an information system (as a product) provides to a user.
- Function points are used to compute a functional size measurement (FSM) of software. The cost (in dollars or hours) of a single unit is calculated from past projects.

5. Which of the following tools and techniques primarily help in improving productivity of SDLC project team members?

a) Use of Standard Methodology

b) Software Sizing using FPA

c) Developers' Workbench

d) Appropriate HR Policies

Page 21; Para 1.10

6. While performing mid-term review of SDLC project, the IS Auditor primarily focuses on:

a) Project Risk Management Process

b) Adherence to the schedule

c) Reviewing minutes of Steering Committee Meeting

d) Cost Management is as per budget

Page 13; Para 1.7.3

7. A Project Manager's main responsibility in a project meant to create a product is:

a) Ensuring it is high grade

b) To pack exciting features in the product

c) Ensuring it is high quality

d) Creating a product within allocated cost and schedule

Page 13; Para 1.7.3

8. The Project Manager should be able to fulfill the role of:

a) An Integrator

b) A Functional Manager

c) A Line Manager

d) A Sponsor

Page 13; Para 1.7.3

The project manager integrates a project as a whole; meaning unifies various aspects and processes of **initiating, planning, executing, monitoring, control** and **closure.**

9. The most successful Project Manager usually:

a) Works his/her way up from Assistants in the project office to full-fledged Project Managers, supplementing that experience with formal education.

b) Comes right from Harvard's MBA program into managing very large projects.

c) Are the Technical Experts.

d) Have considerable experience as a Functional Manager before moving into the Project Management arena.

Page 13; Para 1.7.3


Management
Communication
Negotiation
Top Project Manager Skills
Budgeting
Organization
Leadership
Problem-solving

Chapter 2

SDLC – Need, Benefits and Phases

- Software is developed or engineered; it is not manufactured in the classical sense.
- Software doesn't "wear out."
- Although the industry is moving toward component-based construction, most software continues to be custom built.

10. SDLC primarily refers to the process of:

a) Developing IT based solution to improve business service delivery.

b) Acquiring upgraded version of hardware for existing applications.

c) Redesigning network infrastructure as per service provider's needs.

d) Understanding expectations of business managers from technology.

11. Organizations should adopt programming / coding standards mainly because, it:

a) Is a requirement for programming using High Level Languages?

b) Helps in maintaining and updating System Documentation.

c) Is required for Security and Quality Assurance function of SDLC.

d) Has been globally accepted practice by large organizations

12. An organization decided to purchase a configurable application product instead of developing in-house. Outcome of which of the following SDLC phase help organization in this decision?

a) Requirement Definition

b) Feasibility Study

c) System Analysis

d) Development Phase

13. In which of the following phases of SDLC, controls for security must be considered FIRST?

a) Requirements Definition

b) Feasibility Study

c) System Design

d) Implementation

14. IS Auditor has been part of SDLC project team. Which of the following situation does not prevent IS Auditor from performing post implementation review? The IS Auditor has:

a) Designed the Security Controls.

b) Implemented Security Controls.

c) Selected Security Controls.

d) Developed Integrated Test facility.

15. An organization has implemented an IT based solution to support business function. Which of the following situation shall indicate the need to initiate SDLC project?

a) Vendor has launched a new hardware which is faster.

b) Organizations has unused surplus budget for IT.

c) Regulators have requested additional reports from business.

d) Competitor has launched an efficient IT based service.

16. A "Go or No Go" decision for SDLC project is primarily based on:

a) Feasibility Study

b) Business Case

c) Budget Provision

d) Market Situation

Go / No-Go

The determining factors that control whether we're going to do the Go/No-Go are:

Go/No-Go Drivers

- Type of Project
- Type of Product
- Project Lifecycle
- Corporate Constraints
- Regulations

Go/No-Go Decisions are a formal check. Many projects have informal checks all throughout them, but go no-go decisions are a formal check.

For those of you who are familiar with the space program, it's like that countdown before launch, "Do we push the final lift or go button?" You're checking with everybody, "Is all the work correct? Is it ready? Do we verify that we should be able to go?"

17. Which of the following is the primary reason for organization to outsource the SDLC project? Non-availability of:

a) Skilled Resources

b) Budgetary Approvals

c) Security Processes

d) Infrastructure

18. Which of the following is an example of addressing social feasibility issue in SDLC project?

a) Organization decides to use existing infrastructure.

b) Beta version of the application is made available to users.

c) Configuration of purchased software requires more cost.

d) Allowing employees to access social media sites.

Software Beta Version

- A pre-release of software that is **given out to a large group of users** to try under real conditions.
- Beta versions have gone through alpha testing in-house and are generally fairly close in look, feel and function to the final product; however, design changes often occur as a result.

19. Which of the following is not an indicator to assess benefit realization for internal application software developed in-house?

a) Increase in number of customers because of new application.

b) Decrease in audit findings related to regulatory non-compliance.

c) Reduced number of virus attacks after implementing new software.

d) Increase in productivity of employees after implementation.

Benefits Realization Management (**BRM**) (also **benefits management**, **benefits realisation** or **project benefits management**) is one of the many ways of managing how time and resources are invested into making desirable changes.

Benefits Realization Management has four main definitions.

- The first definition is to consider benefits management as an **organisational change process.** It is defined as "the process of organizing and managing, such that the potential benefits arising from the use of IT are actually realized".
- The second definition **perceives it as a process**. Benefits management is defined by the Association for Project Management (APM) as the identification, definition, planning, tracking and realization of business benefits.
- The third definition is to apply this concept on **project management level**. Project benefits management is defined as "the initiating, planning, organizing, executing, controlling, transitioning and supporting of change in the organisation and its consequences as incurred by project management mechanisms to realize predefined project benefits".
- Finally, the last definition perceives benefits realization management as a set of processes structured **to close the gap between strategy planning and execution by ensuring the implementation of the most valuable initiatives**.

Chapter 3

Software Testing and Implementation

Verification: "Are we building the product right?"

Validation: "Are we building the right product?"

20. Which of the following is main reason to perform User Acceptance Test (UAT)?

a) To train and educate users on features of new solution.

b) To confirm from users that solution meets requirements.

c) To complete formality of sign-off to mark end of project.

d) To finalize the implementation plan for new IT solution.

CRITERIA TO START

ALPHA TESTING?

1. Documented business or software requirements
2. Test cases for all requirements
3. Testing team must have substantial knowledge about the software application
4. Test lab environment ready
5. QA build ready for execution
6. Test management tool ready to upload test cases and log defects
7. Traceability matrix ready to verify that each design requirement has at least one test case

21. An organization has developed a web-based application for the use of internal users to be hosted on intranet. Before finalizing and making it live it was decided to make it available to users for providing feedback. This is an example of:

a) **Internal Audit**

b) **Alpha Testing**

c) **Beta Testing**

d) **User Training**

22. A major concern associated with using sanitized old production data for testing new application is that:

a) User may not provide sign off.

b) Production data may be leaked.

c) Integration testing cannot be performed.

d) All conditions cannot be tested.

23. A tester is executing a test to evaluate that it complies with the user requirement that a certain field be populated by using a dropdown box containing a list of values. Tester is performing …..

a) White-Box Testing

b) Black-Box Testing

c) Load Testing

d) Regression Testing

24. What is the order in which test levels are performed?

a) Unit, Integration, System, Acceptance

b) Unit, System, Integration, Acceptance

c) Unit, Integration, Acceptance, System

d) It depends on nature of a project

25. Which testing is concerned with behaviour of whole product as per specified requirements?

a) Acceptance Testing

b) Component Testing

c) System Testing

d) Integration Testing

26. Verifying that whether software components are functioning correctly and identifying the defects in them is objective of which level of testing?

a) Integration Testing

b) Acceptance Testing

c) Unit Testing

d) System Testing

27. Which technique is applied for usability testing?

a) White Box

b) Black Box

c) Grey Box

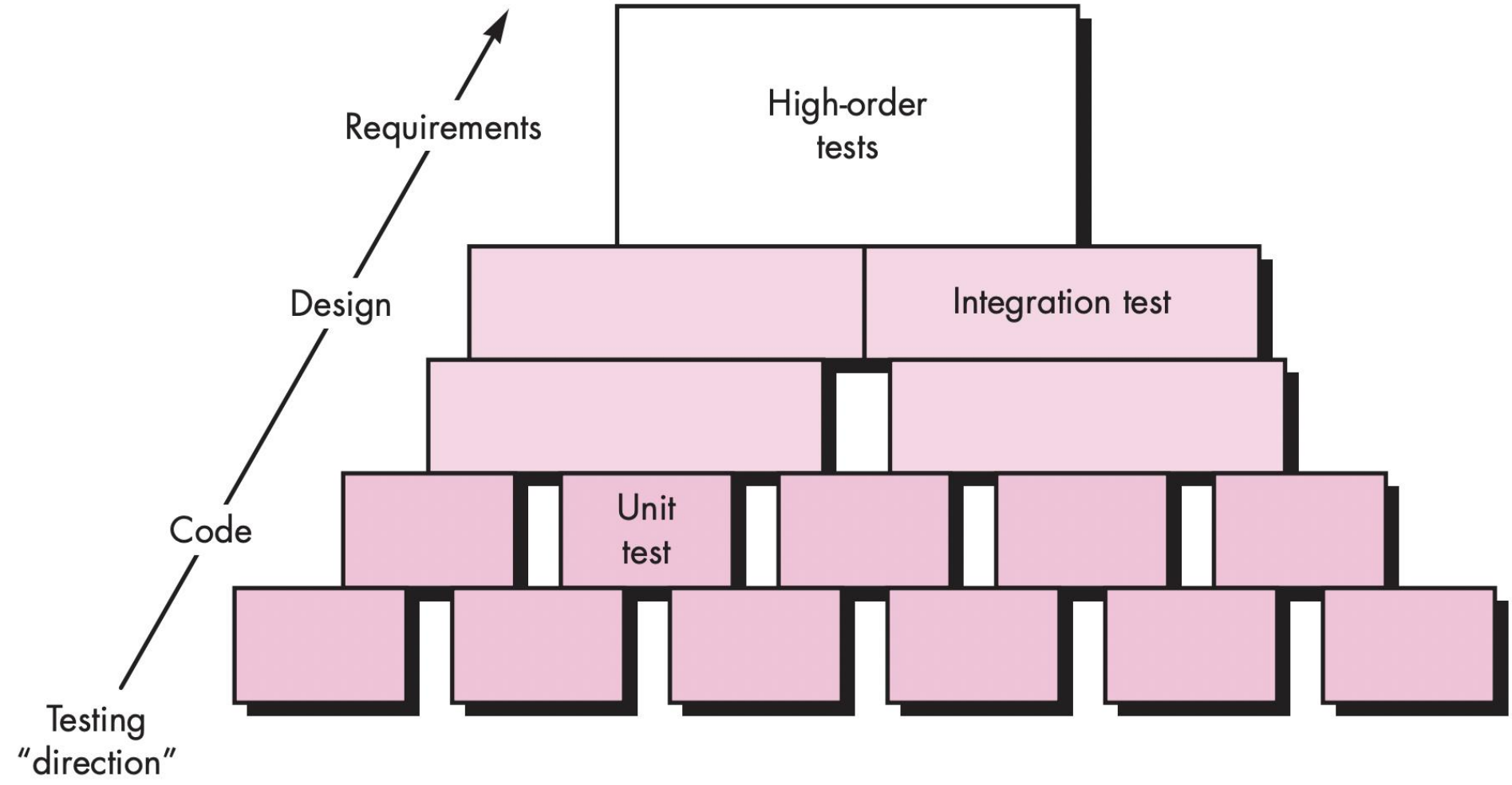
d) Combination of all

Grey-box testing is a combination of white-box testing and black-box testing. The aim of this testing is to search for the defects if any due to improper structure or improper usage of applications

Key Pointers

- SYSTEM TESTING is a level of testing that validates the **complete and fully integrated software** product. The purpose of a system test is to evaluate the end-to-end system specifications.
- UNIT TESTING is a type of software testing where **individual units or components of a software** are tested. The purpose is to validate that each **unit** of the software code performs as expected.
- **Usability testing** is a technique used in user-centered interaction design to evaluate a product by testing it on users. This can be seen as an irreplaceable usability practice, since it gives direct input on how real users use the system.

Software Testing Steps



28. If a company decides to migrate from Windows XP to Windows 11, which type of testing is done to ensure whether your software works on new platform?

a) Interoperability Testing

b) Portability Testing

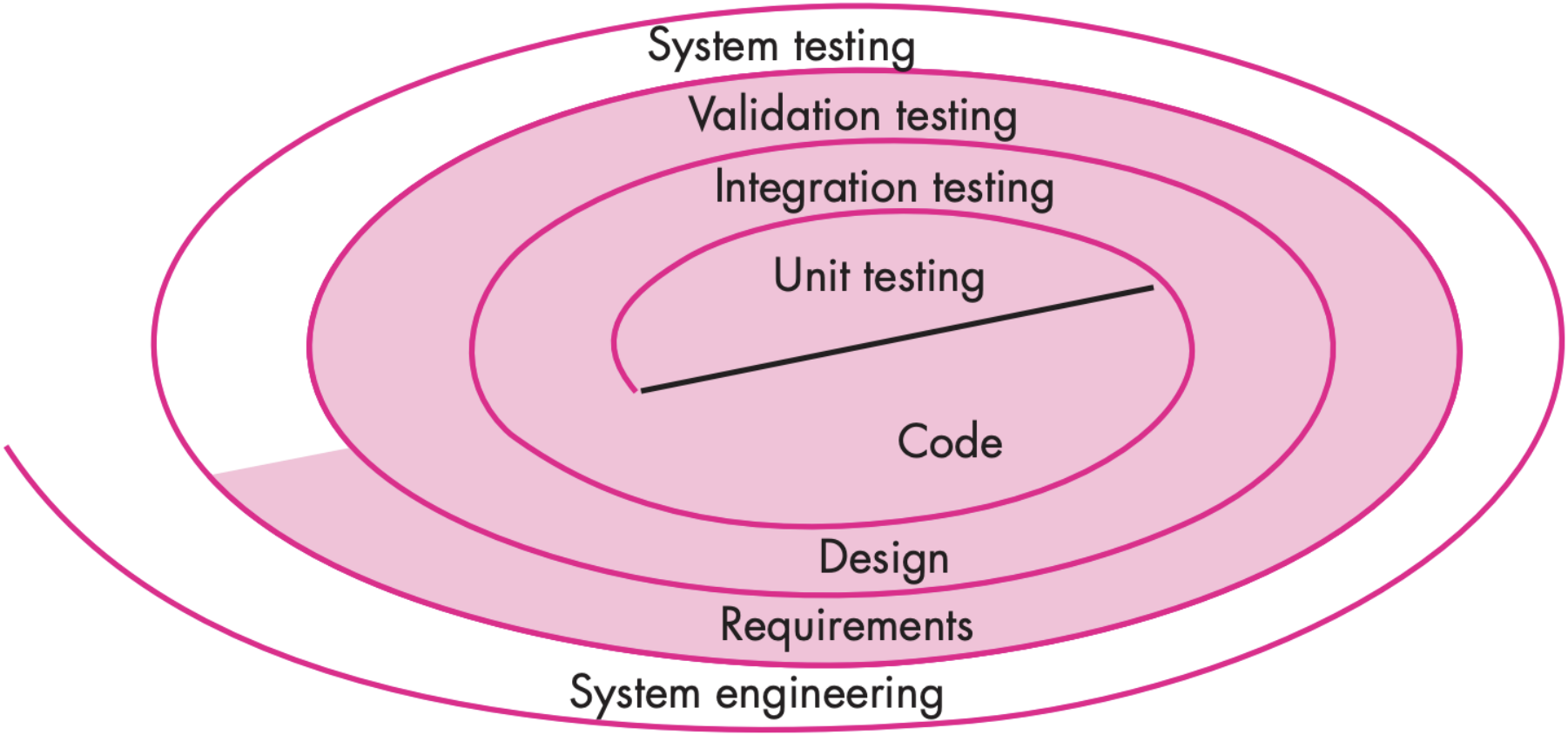
c) Usability Testing

d) Performance Testing

Key Pointers

- **Portability testing** is the process of determining the degree of ease or difficulty to which a software component or application can be effectively and efficiently transferred from one hardware, software or other operational or usage environment to another.
- **Boundary testing** is the process of testing between extreme ends or boundaries between partitions of the input values. So these extreme ends like Start- End, Lower- Upper, Maximum-Minimum, Just Inside- Just Outside values are called boundary values and the testing is called "boundary testing".
- **Interoperability Testing** is a type of software testing that is performed to examine software's interaction either with its components or other software. Interoperability testing checks functionality relationship between two software systems as per requirement of end users.

Testing Strategy



29. Boundary value analysis belongs to?

a) White Box Testing

b) Black Box testing

c) White Box & Black Box testing

d) None of the above

Chapter 4

Application Controls

30. A company's labour distribution report requires extensive corrections each month because of labour hours charged to inactive jobs. Which of the following data processing input controls appears to be missing?

a) Completeness Test

b) Valid Code Check

c) Limit Test

d) Control Total

Key Pointers

Code and cross-reference check

- Code and cross-reference validation includes operations to verify that data is consistent with one or more possibly-external rules, requirements, or collections relevant to a particular organization, context or set of underlying assumptions.
- These additional validity constraints may involve cross-referencing supplied data with a known look-up table or directory information service such as LDAP.
- For example, a user-provided country code might be required to identify a current geopolitical region.

31. A customer inadvertently orders part number 1234-8 instead of 1243-8. Which of the following controls would detect this error during processing?

a) Hash Total

b) Check Digit

c) Limit Check

d) Financial Batch Total

PAN is a ten-digit unique alphanumeric number issued by the Income Tax Department. PAN is issued in the form of a laminated plastic card (commonly known as PAN card). Last character, i.e., the tenth character is an alphabetic **check digit.**

32. Which of the following are not Application Controls?

a) Numerical Sequence Check

b) Access Security

c) Manual follow-up of Exception Reports

d) Chart of Accounts

33. Which of the following ensures completeness and accuracy of accumulated data?

a) Processing Control Procedures

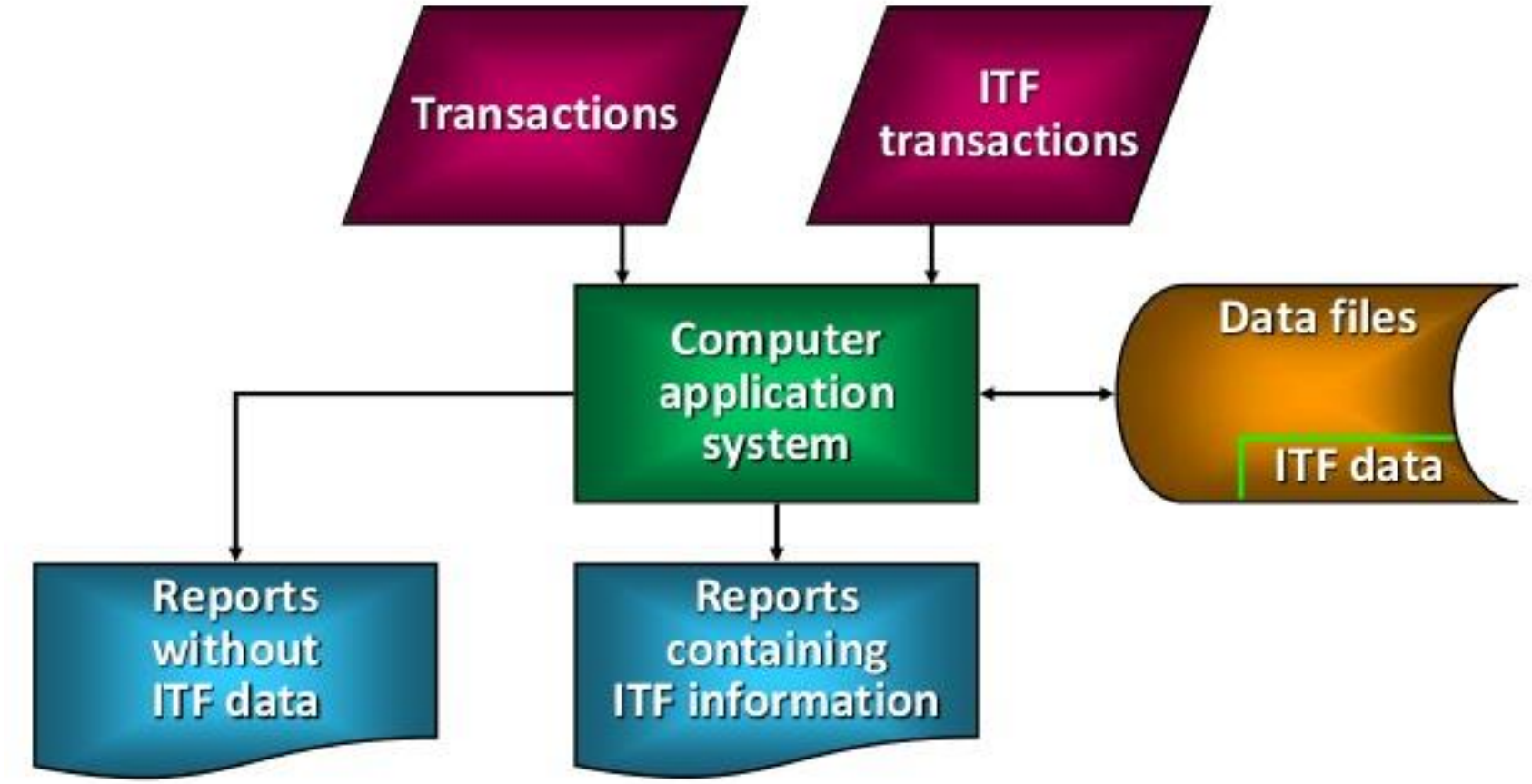
b) Data File Control Procedures

c) Output Controls

d) Application Controls

- Processing controls ensure the completeness and accuracy of accumulated data, viz., editing and run-to-run totals.
- Data file control procedures ensure that only authorized processing occurs to stored data, viz., transaction logs.

INTEGRATED TEST FACILITY



34. An integrated test facility is considered a useful audit tool because it:

a) Is a cost-efficient approach to auditing Application Controls.

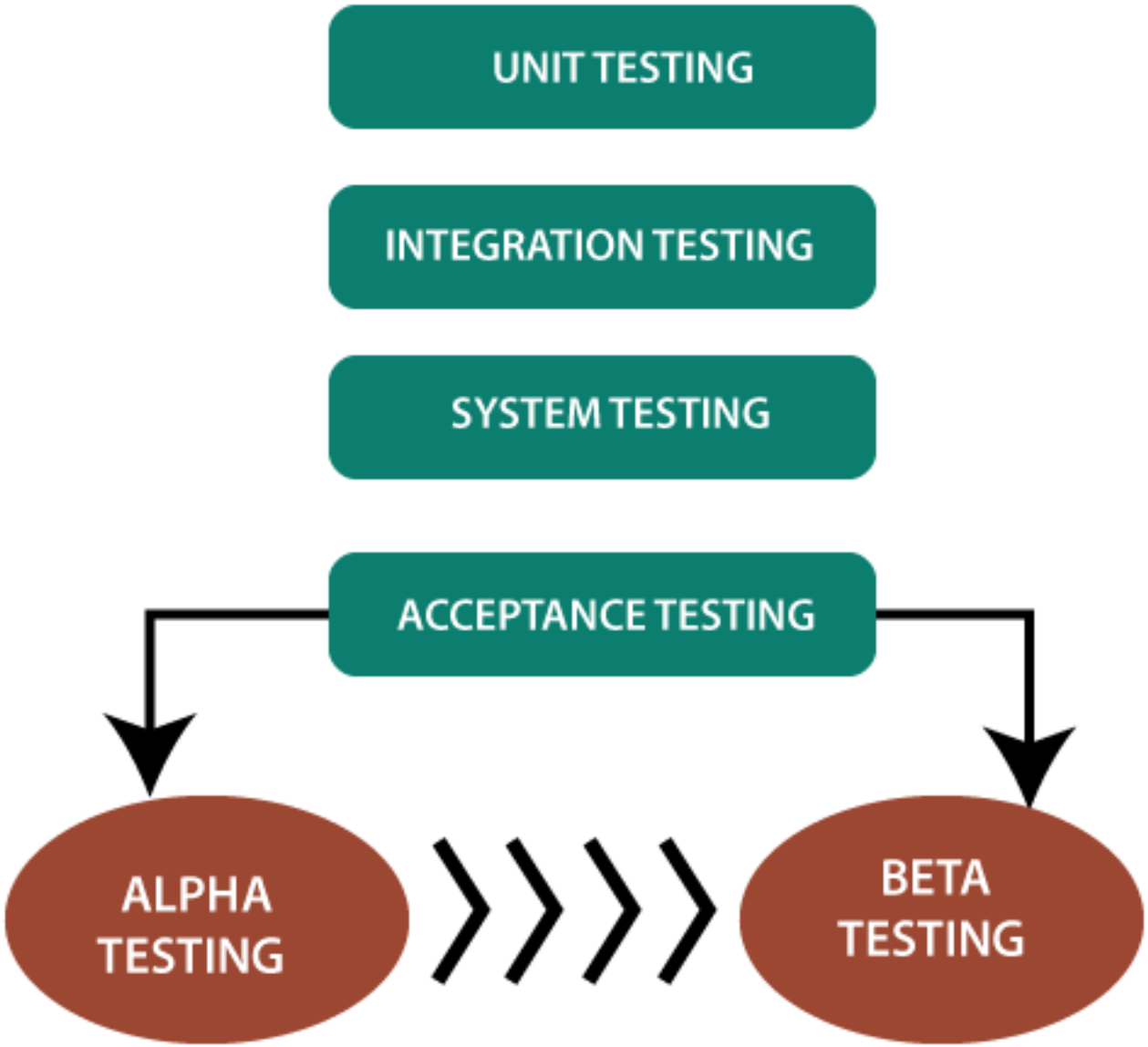
b) Enables the financial and IS Auditors to integrate their audit tests.

c) Compares processing output with independently calculated data.

d) Provides the IS Auditor with a tool to analyze a large range of information.

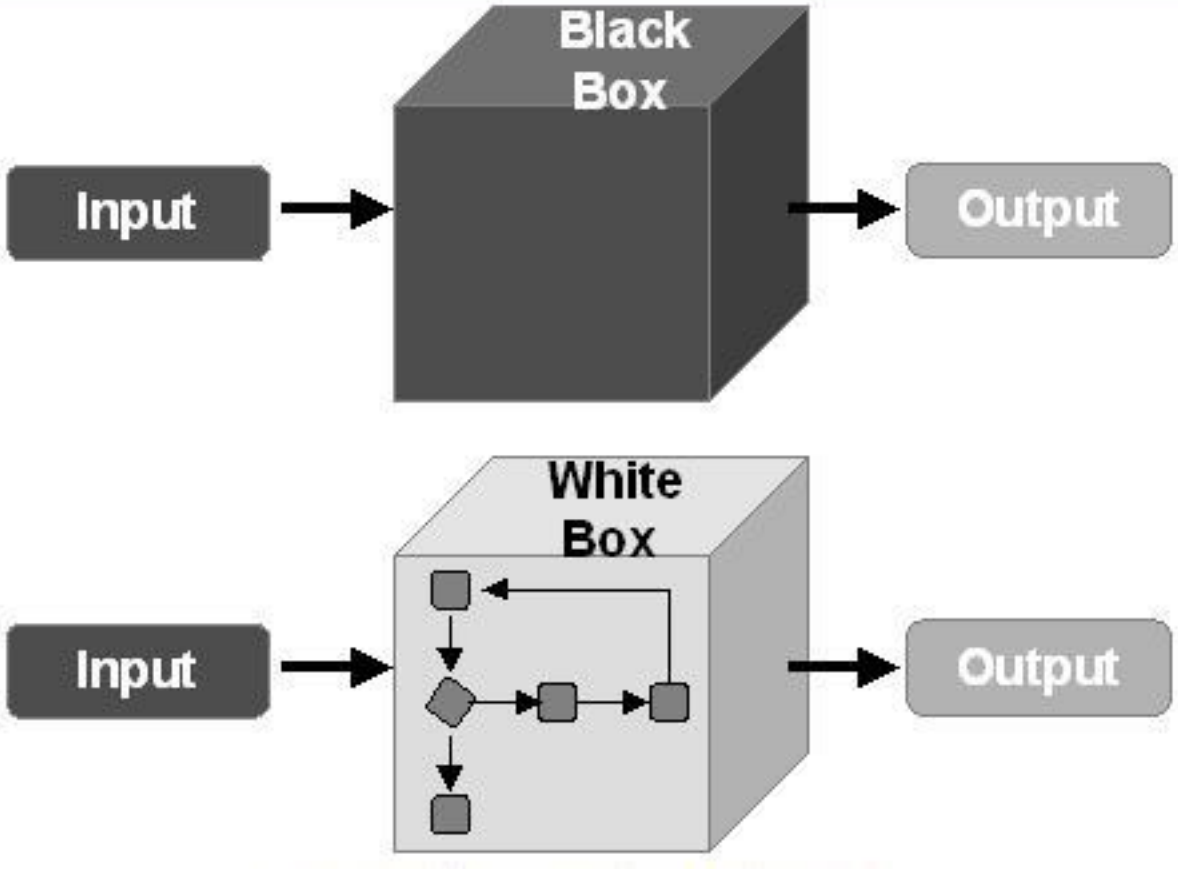
Key Pointers

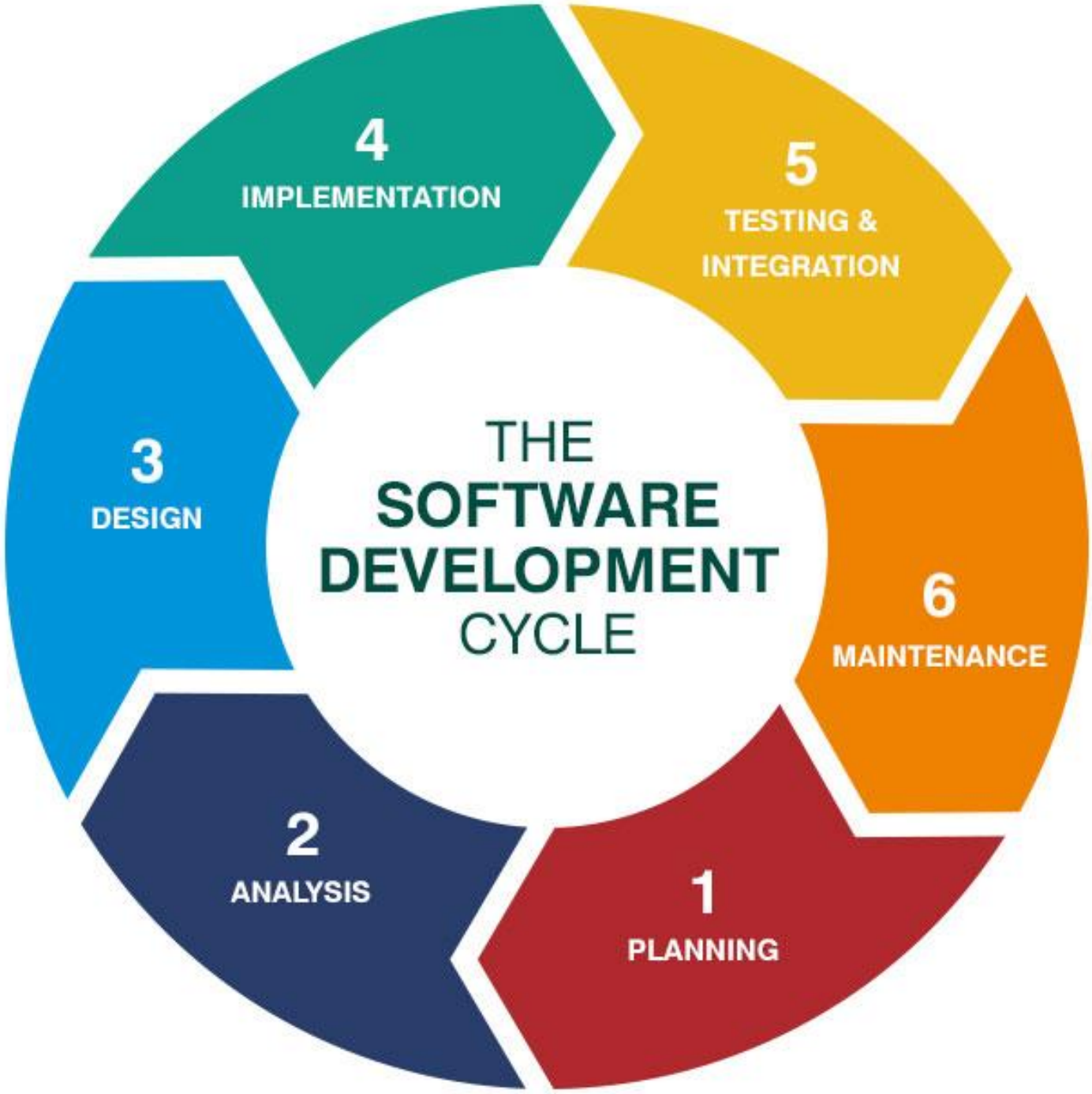
- **Check digit** is a form of redundancy check used for error detection on identification numbers, such as bank account numbers, which are used in an application where they will at least sometimes be input manually. It is analogous to a binary parity bit used to check for errors in computer-generated data.
- An **integrated test facility** (ITF) creates a fictitious entity in a database to process test transactions simultaneously with live input. ITF can be used to incorporate test transactions into a normal production run of a system. Its advantage is that periodic testing does not require separate test processes. However, careful planning is necessary, and test data must be isolated from production data.


UNIT TESTING
INTEGRATION TESTING
SYSTEM TESTING
ACCEPTANCE TESTING
ALPHA TESTING
BETA TESTING

Alpha Test	Beta Test
Performed by developers	Performed by Customers
It is conducted for software application	It is conducted for product
Performed in Virtual Environment	Performed in Real Environment
Involve both black and white box testing	Involve both black box testing only

Comparison among Black-Box & White-Box Tests




4
IMPLEMENTATION
5
TESTING &
INTEGRATION
3
DESIGN
THE
SOFTWARE
DEVELOPMENT
CYCLE
6
MAINTENANCE
2
ANALYSIS
1
PLANNING

CMMI


MATURITY LEVEL 5
Optimizing
Stable and flexible. Organization is focused on continuous improvement and is built to pivot and respond to opportunity and change. The organization's stability provides a platform for agility and innovation.
5
MATURITY LEVEL 4
Quantitatively Managed
Measured and controlled. Organization is data-driven with quantitative performance improvement objectives that are predictable and align to meet the needs of internal and external stakeholders.
4
MATURITY LEVEL 3
Defined
Proactive, rather than reactive. Organization-wide standards provide guidance across projects, programs and portfolios.
3
MATURITY LEVEL 2
Managed
Managed on the project level. Projects are planned, performed, measured, and controlled.
2
MATURITY LEVEL 1
Initial
Unpredictable and reactive. Work gets completed but is often delayed and over budget.
1

35. Capability Maturity Model Integration (CMMI) is a process improvement approach that provides enterprise with the essential elements of effective processes. Which is CMMI – Level 4 ?

a) The previously described predictable process is continuously improved to meet relevant current and projected business goals

b) The previously described established process now operates within defined limits to achieve its process outcomes

c) The previously described managed process is now implemented using a defined process that is capable of achieving its process outcomes

d) The previously described performed process is now implemented in a managed fashion (planned, monitored and adjusted) and its work products are appropriately established, controlled and maintained

Page 2 ; Para 1.2.1

36. ……. …….. consists of processes related to direct project teams, ensuring quality assurance and testing, managing requirements and changes in requirements, ensuring timely procurements and manage resources.

a) Project Initiation

b) Project Planning

c) Project Execution

d) Project Monitoring & Controlling

Page 4 ; Para 1.3

37. .... consists of comparing expected budget till date, actual cost, estimated completion date and actual completion at regular intervals during the project.

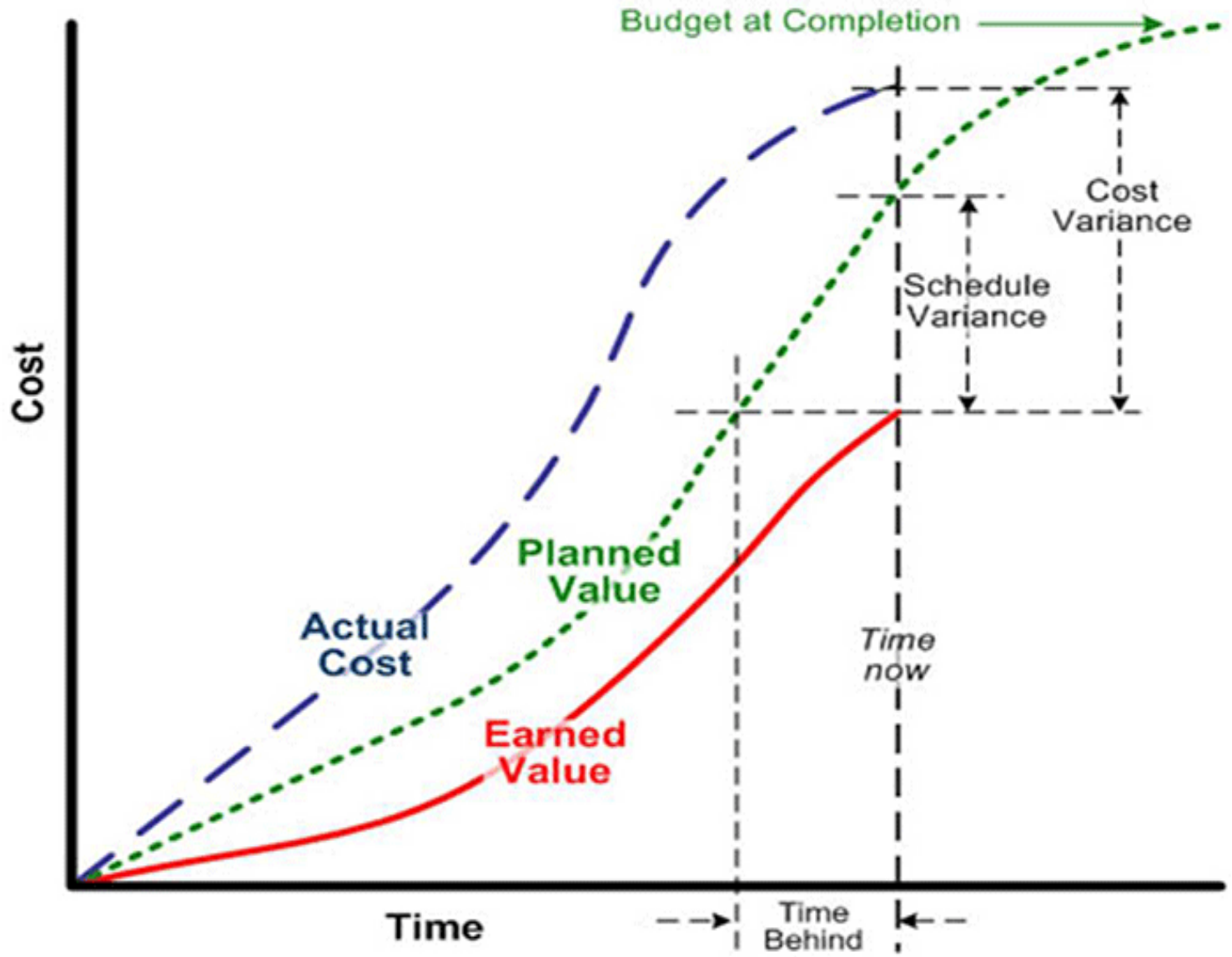
a) Market Value Analysis

b) Earned Value Analysis

c) Cash Value Analysis

d) Expected Value Analysis

Page 12 ; Para 1.7.2


Budget at Completion
Cost Variance
Schedule Variance
Cost
Planned Value
Actual Cost
Time now
Earned Value
Time
Time Behind

38. The ……. …… handles multiple projects; and ensures the integrity and security of information stored in the database.

a) System Analyst

b) Database Administrator

c) Data Administrator

d) User Manager

Page 19 ; Para 1.9.15

Contrasting DA and DBA Activities and Characteristics

DATA ADMINISTRATOR (DA)	DATABASE ADMINISTRATOR (DBA)
Does strategic planning	Controls and supervises
Sets long-term goals	Executes plans to reach goals
Sets policies and standards	Enforces policies and procedures Enforces programming standards
Is broad in scope	Is narrow in scope
Focuses on the long term	Focuses on the short term (daily operations)
Has a managerial orientation	Has a technical orientation
Is DBMS-independent	Is DBMS-specific

- DA must set data administration goals
  - Data "sharability" and time availability
  - Data consistency and integrity
  - Data security and privacy
  - Extent and type of data use

39. The ……. ……. gathers and analyzes business requirements and develops conceptual and logical models of business

a) System Analyst

b) Database Administrator

c) Data Administrator

d) User Manager

Page 19 ; Para 1.9.16

40. If the software vendor, or licensor, fail to support the product, the …… …….. agrees to release the proprietary materials (such as source code) to the end- user.

a) Software Agent

b) Licensing Agent

c) Escrow Agent

d) Utility-based agent

Page 39 ; Para 2.5.5.1

41. ……. ……. recovers design information from existing source code and uses this information to reconstitute the existing system to improve its overall quality and/or performance.

a) Re-engineering

b) Reverse Engineering

c) Forward Engineering

d) Code Restructuring

Page 48 ; Para 2.6.3

42. …….. is the process of solution specification and modelling where data and procedures can be grouped into an entity known as an object.

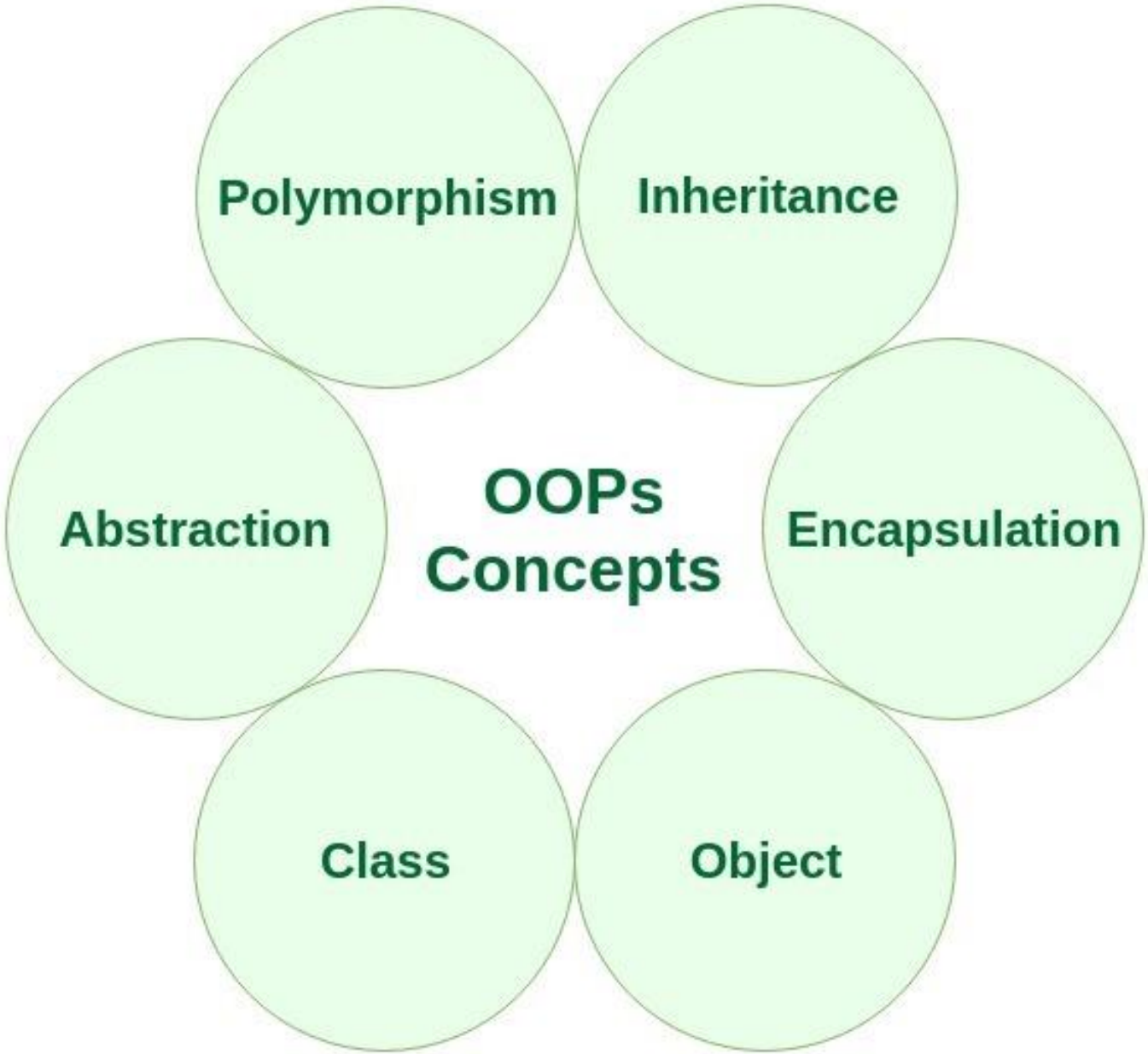
a) OOPS

b) OOSD

c) OOH

d) OLA

Page 49 ; Para 2.6.4


Polymorphism
Inheritance
Abstraction
OOPs Concepts
Encapsulation
Class
Object

43. Which of the following are not the main principles of object-oriented programming

a) Abstraction

b) Encapsulation

c) Inheritance

d) Polymorphism

e) Isomorphism

Page 49 ; Para 2.6.4

The main principles of object-oriented programming (OOP)

- **Encapsulation**: This principle bundles data and methods into a single unit, called a class. It hides the internal workings of an object from the outside world, exposing only what is necessary. This helps to reduce the risk of errors, make the program more understandable, and provide program security.
- **Abstraction:** This principle focuses on the essential features of an object and ignores the non-essential ones. It helps to create simple and easy-to-use interfaces for complex systems.
- **Polymorphism:** This principle means having many forms. It's the ability of a message to be displayed in more than one form.
- **Inheritance:** This is one of the four pillars of OOP.

44. …… are automated tools that aid in the software development process. Their use may include tools for capturing and analyzing requirements, software design, code generation, testing, document building and other software development activities.

a) CASE Tools

b) Program Controlling Tools

c) Function Point Analysis

d) Code Generators

Page 21; Para 1.10

45. ……. ……. are responsible for creation on User Manuals.

a) System Analyst

b) Database Administrator

c) Data Administrator

d) User Manager

e) Tester

f) Documentation Specialist

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46. ……. ……. refers to the process of managing changes in the application and IT triggered or prompted due to changes in processes, regulatory compliances, and strategic changes in business, technology changes and so on.

a) Application Maintenance

b) Change Management Process

c) User Acceptance Testing (UAT)

d) Penetration Testing

e) Configuration Management

Page 90; Para 3.9

47. ……. is a process of updating an existing system by reusing design and program components. It updates existing software as it is used in case of major changes in existing system; it differs from change management due to the extent of changes.

a) Re-engineering

b) Reverse Engineering

c) Forward Engineering

d) Code Restructuring

Page 47; Para 2.6.3

48. ……. is assembling packages (objects) of executable software that make their services available through defined interfaces.

a) Web-based Application Development

b) Object Oriented Software Development

c) Incremental Model Development

d) Component Based Development

Page 51; Para 2.6.5

49. The ..... is a repetitive software development process combining elements of both design and prototyping within each of the iterations.

a) Incremental Model

b) Rapid Application Development Model

c) Spiral Model

d) Agile Software Development Model

Page 57; Para 2.8.2

50. …….. refers to the integration of development and operations processes to eliminate conflicts and barriers.

a) DevOps

b) DevSecOps

c) Synk

d) Chat GPT 4.0

Page 64; Para 2.8.5

What is the difference between DevOps and DevSecOps?

a) **Automation** — DevOps and DevSecOps employ artificial intelligence (AI) to automate development steps.

b) DevOps typically involves using auto-complete code and anomaly detection.

c) DevSecOps involves automating security checks and employing anomaly recognition to detect vulnerabilities and security risks proactively.

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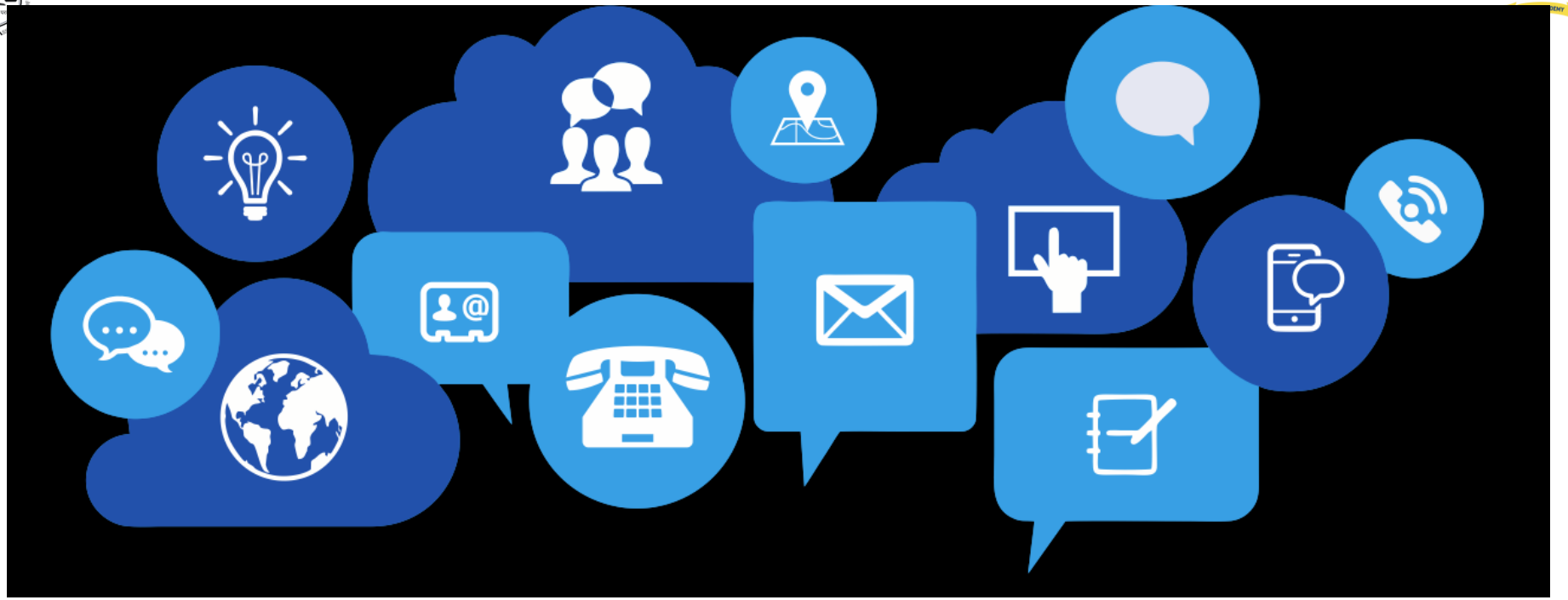
Criteria	DevOps	DevSecOps
Philosophy	Development and operations teams collaborate for productivity.	Development and IT teams work together to make security a common obligation.
Purpose	The main purpose of DevOps is speed and streamlining processes.	The main purpose of DevSecOps is to provide premium security.
Goal	Bridge the communication gap between various teams.	It provides a safe and secure way to share security decisions.
Emphasis	It emphasizes on software development.	It emphasizes on creating secure and compliant code.
Team skillset	Linux fundamentals and knowledge of DevOps tech.	Skill to detect system vulnerabilities with security tools.
Security begins	Begins right after the development pipeline	Begins in the initial build process.
Challenges	Limited customer feedbackEverchanging development processesInfrastructure to microservices	Knowledge gap in developersLack of AppSec tool integrationPipeline friction and developer overload


HAPPY
NEW YEAR
2025

LET'S CHECK YOUR ANSWERS!

1	a	10	a	20	b	30	b	41	c		
2	b	11	c	21	c	31	b	42	b		
3	d	12	b	22	d	32	b	43	e		
4	a	13	a	23	b	33	a	44	a		
5	c	14	d	24	d	34	c	45	f		
6	a	15	d	25	c	35	b	46	a		
7	c	16	b	26	c	36	c	47	a		
8	a	17	a	27	b	37	b	48	d		
9	a	18	b	28	b	38	b	49	c		
40	c	19	c	29	b	39	c	50	a		



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