Exam Preparation session
(MCQ Modules 5 to 11 : DISSA Course)

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Module 5- Business Application – Acquisition, Development & Implementation

- Audit Charter, IS Policy
- IS Audit process details
- ToR / EL & NDA
- IS Audit Approach
- Application of SIA
- IS Audit Reporting
- Data analytics
- HW & SW Acquisition
- Blockchain
- RPA
- AI
- Cryptocurrency
- IoT

IS Audit - documentation

- ***Documentation should include, at a minimum, a record of***
- - Planning and preparation of the audit scope and objectives
- - Audit steps performed and audit evidence gathered
- - Audit findings, conclusions and recommendations
- - Reports issued as a result of the audit work
- - Supervisory review
- **Audit Accelerators**
- Divided into 2 categories:
- **1. Audit Facilitators :** Tools that help support overall management of an audit (e.g., an electronic workpaper management tool, project management software, flow- charting software & open issue tracking software.
- **2. Testing Accelerators** : Tools automate performance of audit tests (e.g., data analysis tools).

Using Work of Others- ISA 620

- IS Auditors should, where appropriate, consider using work of other experts for audit
- ii. They should assess, and then be satisfied with:

- ❑ professional qualifications,
- ❑ competencies,
- ❑ relevant experience, resources,
- ❑ independence and
- ❑ quality control processes, prior to engagement

- IS Auditors to determine & conclude whether:
- the work of experts is adequate & competent to enable them to conclude on current audit objectives.
- Such conclusion should be documented
- IS Auditor's views, relevance & comments on adopting expert's report should form a part of IS Auditor's Report

Draft Report & Follow-up

- Professional bodies like ISACA, IIA, ICAI have issued guidance
- *Reporting and follow-up entails following activities or steps :*

1. - Drafting audit summary and memorandum
2. - Discussing findings with management
3. - Finalising and submitting reports
4. - Reviewing the Actions taken report
5. - Undertaking follow-up procedures
6. - Archiving documents

- **Evidences and Documentation**
- - **Detailed review of working paper** prepared by less experienced member of the IS Audit team, by a more experienced member, who did not participate in the preparation of such working paper

ASM

- **Audit Summary and Memorandum :**
- **An IS Auditor should perform audits** or reviews of control procedures and form a conclusion about, and reporting on, the design and operating effectiveness of the control procedures based on the identified criteria.
- **The conclusion for an audit** is expressed as a positive expression of opinion and provides a high level of assurance.
- **The conclusion for a review** is expressed as a statement of negative assurance and provides only a moderate level of assurance.

IS Audit Report

- IS Auditors should review & assess conclusions drawn from evidence obtained as basis for forming an opinion on effectiveness of control procedures based on identified criteria.
- **Major findings identified during an audit** = definite time line indicated for remedial actions, these should be followed up intensively and compliance should be confirmed
- **ATR**
- After reporting of findings & recommendations, IS Auditors should request and evaluate relevant information to conclude whether appropriate action taken by management in timely manner
- **Follow-up Procedures**

IS Audit Report coverage

- Description of **scope of audit**, including :
- > Identification or description of area of activity
- > Criteria used as a **basis for IS Auditor's conclusion**
- > A statement that **maintenance of effective internal control structure, including control procedures for area of activity, is <u>the responsibility of management</u>**
- - A statement that **IS Auditors have conducted the engagement to express an opinion on the effectiveness of control**

AI

- Thinking humanly
- Thinking rationally
- Acting humanly
- Acting rationally

Goals of AI

- To make computers more useful by letting them take over dangerous or tedious tasks from human
- Understand principles of human intelligence
- Mathematics formalizes 3 main area of AI: *computation*, *logic*, and *probability*
- ***Philosophy***
  - Initiate the idea of mind as a machine and its internal operations

AI : Capabilities

- Pattern recognition
- **Face recognition**: Pose, lighting, occlusion (glasses, beard), make-up, hair style
- **Character recognition**: Different handwriting styles.
- **Speech recognition:**
- **Medical diagnosis**: From symptoms to illnesses
- **Web Advertizing**: Predict if a user clicks on an ad on Internet.

What is Learning?

- *"Learning denotes changes in a system that ... enable a system to do the same task … more efficiently the next time."* - Herbert Simon
- *"Learning is constructing or modifying representations of what is being experienced."* - Ryszard Michalski
- *"Learning is making useful changes in our minds."* - Marvin Minsky

*"**Machine learning** refers to a system capable of the autonomous acquisition and integration of knowledge."*

Machine Learning- major avenues

- **No human experts interface**
  - industrial/manufacturing control
  - drug design, astronomic discovery
- **Human expertise- Simulation**
  - face/handwriting/speech recognition
  - driving a car, flying a plane
- **Rapidly changing phenomena**
  - credit scoring, financial modeling
  - diagnosis, fraud detection
- **Need for customization/personalization**
  - personalized news reader
  - movie/book recommendation

Class 1 – Basic Automation (RPA)

- operate **on presentation layer of business applications without interfering** with the underlying IT architecture.
- processes **structured data (spreadsheets, data present in relational databases, etc.), rule-based and transactional tasks** by mimicking human actions.
- **Class 2 – Enhanced Automation (Intelligent Automation)**
- Uses data extraction techniques augmented with ML capability **to ingest unstructured data (scanned document images, PDF and scanned handwritten images)** with a higher **accuracy rate & confidence as compared to OCR**
- **Pattern recognition**

Class 3 – Cognitive Automation (AI)

Uses sophisticated AI technologies :

- **Natural Language Generation,**
- **Speech Recognition,**
- **Computer Vision**, etc., to ingest super data sets , perform cognitive tasks previously done by humans such as:

1. **reasoning,**
2. **perceiving,**
3. **interacting with the environment variables**
4. **and problem solving.**

AI= Duplicate intelligent (human) behaviour in computer systems

- **Cognitive solutions :** *advanced self-learning capabilities, advanced predictive analytics.*
- **Costly to develop and implement**, and **generally require a long lead time.**
- **IS Auditor :** assist in migration, adoption, operation, optimisation

AI, ML, DL

- **AI = study of training machine (computers) to mimic human brain & it's thinking capabilities"**.
- **Benchmark for AI :** human intelligence regarding reasoning, speech, learning, vision & problem solving.
- AI focuses on 3 major aspects(skills):

✓ learning,

✓ reasoning &

✓ self-correction .

- **Machine Learning:** study/process which provides system(computer) to learn automatically on its own through experiences it had & improve accordingly without being explicitly programmed. **ML = application or subset of AI.**
- **Deep Learning:** sub-part of broader family of ML - use of **Neural Networks**(neurons working in brain) to mimic human brain-like behavior.
- DL algorithms focus : **information processing patterns** mechanism to possibly identify patterns just like our human brain does & classifies the information

ML types

- **1. Supervised ML** = assets & operations modeled by humans selecting relevant sensors (tags) - statistically related & selected periods of archived Big Data that represent **"good behavior"**
- **Hence =** software can create digital signature of what is considered to be proper operation.
- Incoming real-time data is then compared to this digital signature,
- Deviations are identified as possible early warnings of asset or operational degradation
- **2. Unsupervised** =
- data is automatically analyzed,
- relationships among data are systematically determined,
- deviations from patterns of normal behavior are identified with no human intervention

4 P's of Industrial AI:

- **1. Predictive:** method of anomaly detection in near-real-time
- Based on ML , type of pattern recognition & anomaly detection leveraging Industrial Big Data to create digital signatures of assets & processes
- to detect both deviations & matching patterns =indicate early warning of pending problems & inefficiencies, errors in design process.
- Spot anomalies in how processes, equipment & assets are performing with advanced pattern recognition powered by ML.
- Early detection & warning of equipment failure, inefficiencies, errors in engineering, operations & performance improves safety, operational risk
- The **Big Data sourcing** =
- sensors, data base, calculated values, audio, video, SCADA , online meters , other control systems
- advanced pattern recognition = digital signatures of **normal behavior** of an asset or process are captured
- Then = **used as basis** of comparison with incoming, real-time data
- **AI apps -** identification of fraudulent claims & invoices,
- OCR for vehicle tracking & real-time safety monitoring within factories.

2. Performance based AI

- Based on simulation & ML = optimization system leveraging industry & asset specific algorithms and modeling techniques to provide early warning detection of pending problems & inefficiencies when compared to actual sensor values.
- Based on issues detected in Predictive & Performance analytics = Root cause analysis, optimized solutions, risk-based decision support guide user to most efficient decision
- Combination of both online & simulation software that leverages ML to baseline performance through advanced pattern analysis in order to ensure mathematical models accurately match operational reality.
- Deviations can be quickly detected = early action taken to rectify situation.
- **3. Prescriptive:**
- Based on issues detected in Predictive & Performance analytics = provides root cause analysis, planning & decision-support, & probabilistic courses of action to best remedy & optimize given situation.

- **4. Prognostics:**
- **Prognostics** - Forecast future events, schedules, & operational scenarios to manage risk, maximize profitability & improve sustainability
- Leveraging neural net, deep-learning, & reinforcement learning = provides forecast of future events.
- Used in **monitoring/control & scheduling optimization**
- Determining **how long an asset or process can continue to safely operate** (after anomaly has been detected) before failure or significant loss of functionality occurs.
- **Risk-based insight in decisions** - whether or not an operation should attempt to run to next planned maintenance outage.
- Can the system make it to next planned maintenance outage?

Use of Chatbots

A program designed to carry on conversation with human user

- Chatbots = computer programmes which mimic conversation with people using NLP & AI.
- Can interact with people on internet by initiating a conversation.
- Act as digital assistants = address queries regarding products or services
- Chatbots don't need to be downloaded, don't need storage space on devices.

Advantages of Artificial Intelligence

- more powerful and more useful computers
- new and improved interfaces
- solving new problems
- better handling of information
- relieves information overload
- conversion of information into knowledge

Challenges

- increased costs
- difficulty with software development - slow and expensive
- few experienced programmers
- Limited practical products have reached the market.

Data Analytics

- DA = *examining the data available to draw conclusions*
- **Data analytics : Ability**
- to identify new opportunities,
- to harness costs savings
- to enable faster more effective decision making
- to identify potential for new products & services
- to detect potential loss of clients - in order to direct efforts to encourage them to stay

Data Sources

- both internal & external
- Include quantitative & qualitative data.
- aided by specialised software developed
- enable information from many different sources & formats to be **combined & analysed**

Benefits of Data Analytics

- Increased business understanding through a more thorough analysis of a client's data
- Use of visual output
- Better focus on risk
- Increased consistency across group audits
- Increased fraud detection

IS Audit of AI

- **Elements of AI Ecosystem**
- **1. Artificial intelligence ethics & governance models**
- Formal standards & procedures for implementation of AI engagements
- **2. Data and model management, governance & privacy**
- **3. Understanding human-machine integration, interactions, decision-support & outcome**
- **4. Third-party AI vendor management**
- **5. Cybersecurity vulnerability, risk management & business continuity**
- **Auditability** = possibility to evaluate algorithms, models, & datasets;
- to analyse operation, results , effects, expected + unexpected of AI systems.
- **Part 1** = technical -measuring performance of system according to several criteria (reliability, accuracy of results, etc.).
- **Part 2** = ethical part - apprehending its individual & collective impacts, checking that it does not pose risk of breaching certain principles of privacy or equality.

Decentralized Finance (DeFi)- BC & Crypto

- emerging financial technology based on secure distributed ledgers similar to those used by cryptocurrencies.
- global, open alternative to current financial system.
- Products that let user borrow, save, invest, trade etc
- Based on open-source technology that anyone can program with
- system removes the control banks and institutions have on money, financial products, and financial services- hence – Decentralised
- *2 DeFi's goals are :*
- *1. to reduce transaction times*
- *2. increase access to financial services.*
- DeFi = collective term for financial products & services that are accessible to anyone who can use internet connection.
- With DeFi = markets are always open & there are no centralized authorities who can block payments or deny access
-

DeFi= use of BC Technology

- DeFi uses blockchain technology that cryptocurrencies use.
- Blockchain = distributed & secured database or ledger.
- Applications called dApps used to handle transactions & run BC
- Peer-to-peer (P2P) financial transactions = core premises in DeFi.
- A **P2P DeFi transaction** = 2 parties agree to exchange cryptocurrency for goods or services with a third party involved.
- **DeFi** = designed to use cryptocurrency for transactions
- revolves around stablecoin, - cryptocurrency backed by an entity or pegged to fiat currency like dollar

DeFi- capabilities

- ✓ Send money around the globe
- ✓ Access stable currencies
- ✓ Borrow funds with collateral
- ✓ Borrow without collateral
- ✓ Start crypto savings
- ✓ Trade tokens, Grow your portfolio
- ✓ Fund your ideas
- ✓ Buy insurance

DeFi= Key Issues & Risks

- **Concerns =**

❖ Evolving sector, Unregulated

❖ significant risks ,

❖ structured ecosystem unavailable - under development and debate.

❖ Cases of infrastructural mishaps, frauds, hacks, scams

❖ Need of global financial regulations

- **IT Aspects**

❑ system stability,

❑ energy requirements, carbon footprint,

❑ system upgrades, maintenance, hardware failures

❑ ITGC, Access control, DQI.

Issues of Cryptocurrencies

- Manipulation
- Volatility
- Low scalability (10 transactions/sec)
- Cost-prohibitive for small transactions
- Negative environmental impact = Mining is energy dependent
- Potential for illegal activities
- Non-reversability
- Low acceptability
- Difficulties in convertibility

CBDC = Review

- RBI stand – Crypto
- CBDC- intro
- Operation
- RBI proposed roadmap
- Cryptocurrency Bill, 2021
- Benefits – CBDC
- Risks – CBDC
- MCA Notification -CC
- International developments – BIS

Background & need – CBDC

1. Declining use of physical cash / paper currency
2. trend further reinforced by Covid19 pandemic.
3. = resulted in central banks & governments – explore = digital version of fiat currency / electronic form of currency (eg Sweden);
4. Jurisdictions with significant physical cash usage seeking to make issuance more efficient (Denmark, Germany, Japan, US);
5. Central banks = to meet public's need for digital currencies, increasing use of private virtual currencies (PVC), & avoid damages of PVC
6. CBDCs = more real-time & cost-effective globalization of payment systems
7. India's **high currency to GDP ratio** = large cash usage replaced by CBDCs, = cost of printing, transporting, storing & distributing currency can be reduced.

GoI ; Plans of using BC Tech, no clear stance on CC

RBI – 'Currency' & CBDC Definition

- *In modern economies, currency is a form of money that is issued exclusively by the sovereign (or a central bank as its representative).*
- *It is a liability of the issuing central bank (and sovereign) and an asset of the holding public. Currency is fiat, it is legal tender.*
- *Currency is usually issued in paper (or polymer) form, but* ***the form of currency is not its defining characteristic.***

CBDC

- *CBDC = the legal tender issued by a central bank in a digital form.*
- *It is the same as a fiat currency &*
- *is exchangeable one-to-one with the fiat currency.*
- *Only its form is different*

CBDC features

- CBDC = legal tender issued by RBI,
- same functional capabilities as a fiat currency
- considered exchangeable in nature with said fiat currency in a one-to-one form.
- **Notable difference** = digital form.
- **Differences with existing private digital currencies** - Bitcoin & Ethereum.
- Private crypto assets = have no legal issuers
- they cannot be considered as money or currency, CBDC can be.

IT Hardware & Software acquisition

	Advantages	Disadvantages
Buying	• Cheaper than leasing or renting over the long run. • Ability to change system. • Provides tax advantages of accelerated depreciation. • Full control.	• Initial cost is high. • Risk of obsolescence. • Risk of being stuck if choice was wrong. • Full responsibility.
Leasing	• No capital is tied up. • No financing is required. • Leases are lower than rental payments.	• Company doesn't own the system when lease expires. • Usually, a heavy penalty for terminating the lease. • Leases are more expensive than buying.
Renting	• No capital is tied up. • No financing is required. • Easy to change systems • Maintenance and insurance are usually included.	• Company doesn't own the computer. • Cost is very high because vendor assumes the risk (most expensive option).

Vendor support

Vendor Services	Specifics Vendors Typically Offer
Hardware Support	• Full line of hardware. • Quality products. • Warranty.
Software Support	• Complete software needs. • Custom programming. • Warranty.
Installation and Training	• Commitment to schedule. • In-house training. • Technical assistance.
Maintenance	• Routine maintenance procedures. • Specified response time in emergencies. • Equipment loan while repair is being done.

IoT

- system of interrelated computing devices, mechanical & digital machines, objects, animals or people provided with unique identifiers (UIDs) & ability to transfer data over network without human-to-human or human-to-computer interaction.
- *Thing* - can be:

✓ person with heart monitor implant,

✓ farm animal with a biochip transponder,

✓ automobile with built-in sensors to alert driver – low tire pressure

- **IoT ecosystem** - web-enabled smart devices use embedded systems - processors, sensors & communication hardware to collect, send & act on data they acquire from their environments
- IoT use AI & ML aid - make data collecting process easier

- 1. ____ is the apex regulatory body regarding cyber – related matters and IT in India
- A. SFIO
- B. CBI
- C. CERT-In
- D. ED
- Answer –c

- 2. Scope limitations , if any, and restriction on distribution and usage of IS Audit report should be mentioned in :
- A. Internal Audit charter
- B. IT Policy
- c. IS Audit Report
- D. all of the above
- Answer – c

- 3. IT Vendor support should be sought in :
- A. hardware
- B. software
- C. installation & testing
- D all the above
- Answer= d
- 4. ____ technology enables a system of interrelated computing devices, mechanical & digital machines, objects, animals or people provided with unique identifiers (UIDs) & ability to transfer data over network without human-to-human or human-to-computer interaction.
- A. Intranet of things
- B. Internet of things
- C. VOIP
- D. TCP
- Answer- b

- 5.RPA Ecosystem consists of :
- A. process developers & users
- B. business users
- C. Robot controllers
- D. all the above
- Answer – d

- 8. In conducting IS Audit of RPA and AI Systems, a very critical area to review is :
- A. check IT policy
- B. examine SOD for RPA use
- C. evaluate enterprise technolgy expertise
- D. review how instructions scheduled in RPA tool, and perform testing of edit, validation check, error check, etc., configured in RPA
- Answer – d
- 9. Which one of the following is NOT a known AI type ?
- A. Prescriptive
- B. Descriptive
- C. predictive
- D. prognostic
- Answer- b

- 10.Blockchain depends on which technology ?
- A. CLT
- B. Cryptography
- C. Steganography
- D. DLT
- Answer – d
- 11. Automated contracts , embedded in block chain in the nature of self-executing contracts with terms of agreement between buyer & seller directly written into lines of code is called _____
- A. Block contract
- B. Chain contract
- C. Digital contract
- D.. Smart contract
- Answer - d

Module 6 = CBS Definition

- Gartner defines = CBS *" as a back-end system which processes daily banking transactions, and posts updates to accounts and other financial records.*
- *CBS typically include deposit, loan and credit-processing capabilities, with interfaces to general ledger systems and reporting tools.*
- *Core banking applications are often one of the largest single expense for banks and legacy software are a major issue in terms of allocating resources.*
- *Spending on these systems is based on a combination of service-oriented architecture and supporting technologies."*
- Many banks implement custom applications for core banking

Softwares used by Banking Industry

- Base Software: Core Banking Software

- Add-on Softwares for,
  - Credit Risk Calculation as per Basel – II Norms
  - Risk Weighted Assets / Capital Adequacy Computation
  - Asset Classification and NPA Provisioning computation
  - Classification of Priority / Non-priority / Sensitive Sector Advances
- Sectorwise Asset Classification
- Credit Risk Calculation
- Risk Weighted Assets / Capital Adequacy Calculation

Components of CBS

- ***Centralized Data Centre –***
- large data housing infrastructure = provides high bandwidth access to its clients & includes many services, Networking devices, Firewalls & related equipment.
- ***Network & Communication***
- ***Core Application Systems***
- ***Other Infrastructures***
- ***Networking Devices-*** Routers, Firewall, Switches
- ***Databases***
- ***Servers-*** Application servers, Data Base Servers, Web server, Mail server, Report Generating Servers etc.

RTGS, IMPS, NEFT

- ***Real Time Gross Settlement (RTGS)***
- continuous (real-time) settlement of funds transfers individually on an order-by-order basis (without netting).
- Funds settlement takes place in books of RBI , payments : final & irrevocable.
- RTGS = available for customer & inter-bank transactions round the clock,
- except for interval between 'endof-day' and 'start-of-day' processes.
- ***IMPS***
- IMPS = Immediate Payment Service
- Money transfer mechanism made available by RBI & National Payments Corporation of India (NPCI).
- Initiated in 2010 by NPCI
- Feature of IMPS = available at all times for usage.
- Transfers funds instantly & great banking platform in case of emergencies

System Audit of CBS

- ***RBI = IS Audit is the process of evaluating the adequacy of controls and also ensuring relevant application modules deal comprehensively with business process***.
  1) *Review of Security Policy*
  2) *Review of Business Continuity Planning & BCP policy*
  3) *Review of Systems Development and Change Management Procedures & process*
  4) *Network vulnerability Assessment of Effectiveness of Intrusion Detection Systems.*
  5) *Evaluation of controls in operating systems.*
  6) *Control in databases*
  7) *Testing of application modules of the Core Banking Solution.*
  8) *Review of Systems logs.*
  9) *Audit of Internet Banking, ATM and RTGS/ NEFT*

Types of Security & Controls in CBS

1. Management Controls

- **Formulating a security policy** :
  - Formation of Security Committee/ Steering Committee
  - Asset Management
  - Human Resources Management
  - Physical and Environmental security
  - Communication & operative management
  - Access Control
  - Systems development and Change Management Procedure
- **Developing a business continuity planning**:
- RBI mandates BCP for every bank.
- **Laying down procedures for systems development** : Procedures include program development, program testing, movement to library, movement from library to production, roles & responsibilities of Computer Team members , highlighting incompatible functions.

Security & Controls in CBS

2. Organizational Controls

- Organization structure of IT Department
- IT Strategies roles and responsibilities
- Incompatible functions

3. Operational Controls

- Physical access
- Logical access
- Environmental controls
- Evaluation controls in operation systems
- Evaluation controls of network

Security & Controls in CBS

4. Application Controls – Input, Processing, Output

- ***Input*** **:** ensure data entered = complete & correct through built in checks,
  - Data validation
  - Reasonableness check
  - Format check (Mandatory files)
  - Range check

Application modules

- *Customer ID generation*
- *Accounts Management* -
- *Savings Bank & Current Accounts*
- *Fixed Deposits, Recurring Deposits and other Term Deposits.*
- *Cash Operations Module*
- *Clearing Module* - inward clearing and outward clearing
- *Bank Guarantee* , Performance guarantee
- *Letter of Credit*
- *Bills*
- *Remittances*

IS Audit of CBS

1) Review of Security Policy
2) Review of Business Continuity Planning & BCP policy
3) Review of Systems Development and Change Management Procedures & process
4) Network vulnerability Assessment of Effectiveness of Intrusion Detection Systems.
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6) Control in databases
7) Testing of application modules of the Core Banking Solution.
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9) Audit of Internet Banking, ATM and RTGS/ NEFT

Finacle – (illustrative Tr. Codes)

Verification	Menu Code
Account Scrutiny	ACLI
Customer Master	CUMM
Account Level Inquiry	ACM / ACI
Transaction Inquiry	TI / TM
Fin. Tran. Inquiry – Criterion Search	FTI
Inquire on Transaction (Office Accounts)	IOT
Bills Module (Inland)	BM
Foreign Bills Module	FBM
Foreign Bills Inquiry	FBI

Important CBS Codes

- AFI – Audit File Inquiry
- AVGBAL
- CUMI – Cust Master Inquiry
- DCQRY – Query on Doc Credit – Inland & foreign LC issued
- EXCPRPT – Exception Report – A/c due for review, Adv bal > Sanctioned limit, a/c opened without introduction
- GR – generate report – BS/ PLS on given date
- FTI – Fin Transaction Inquiry
- ACDREV – A/c due for review – where regular / adhoc credit limits not renewed/ reviewed within 180 days from sanction date/ due date – treat NPA
- POVDPC- Party wise o/d packing credit
- TODRP – Temporary OD Report
- NPARPT – NPA Report

LFAR: RBI Guideline Extracts

- *'' The revised LFAR formats are required to be put into operation for the period covering FY 2020-21 and onwards.*
- *The mandate and scope of the audit will be as per this format and if the SCA feels the need of any material additions, etc., this may be done by giving specific justification by the SCA and with the prior intimation of the bank's Audit Committee of Board (ACB).*
- ***VI. INFORMATION SYSTEMS***
- *1.* ***Robustness of IT Systems:***
- *Auditors should comment on the robustness of IT systems covering all the software used by the bank along with functions thereof, inter-linkage/interface between different IT Systems, ATM network and its security, payment system products & services among others.*
- *Further, it should be examined whether the software used by the bank were subjected to Information System & Security Audit, Application function testing and any other audit mandated by RBI. ''*

RBI Guidelines

- 1. Adequacy of IS Audit, migration audit (as and where applicable) and any other audit relating to IT and cyber security system and bank's compliance to the findings of those audits should be commented upon.
- 2. **IT Security and IS Policy:** Auditors should comment whether the bank has duly updated and approved IT Security and IS Policy and whether the bank has complied with the RBI advisory/directives relating to IS environment/cyber security, issued from time-to-time.
- 3. **Critical Systems / Processes:** It should be examined whether there is an effective system of inter-linkage including seamless flow of data amongst various software / packages deployed, via *Straight Through Process (STP).*
- Special emphasis should be placed on outsourced activities and bank's control over them, including bank's own internal policy for outsourced activities.

System Alerts/ Errors etc

- L1 = Lowest level = system will pop up a warning signal alerting user.
- only a warning & transaction will happen, e.g. customer debit without a cheque as they may use a withdrawal slip.
- L2 = system will show an exception. It requires an authorization from another person to record the transaction.
- L3 = highest level, system shows an error, = system will not accept the transaction, irrespective of the designation of the user
- Parameters = defined in Finacle at central level & not visible at branch level.
- System records who entered transaction & who deleted / reversed a transaction.

Masked fields & figures

- Original transaction screen shows entire history in terms of –
- created by,
- created date,
- entered by,
- entered date,
- posted by,
- posted date etc.
- Some cases, amounts masked with *********.
- May happen only in case of HNI / some celebrity /Chairman's salary, bonus etc.
- Finacle allows user to mask many fields.
- Though account balance not visible, transaction will be carried out.
- IS auditor to get list of masked transactions.

Module 6 : Banking, CBS & IS Audit

Part A : Banking

1.Reserve Bank of India's functions are classified into:

a) Supervisory & Regulatory
b) Promotional & Developmental
c) Foreign exchane
d) All of the above

Answer 1 : d

2.Current (April 2022) Repo & Reverse Repo rate is:

a) 3%, 2.25 %
b) 4%, 3.35 %
c) 5%, 4 %
d) 8 % , 6.25 %

Answer 2 : b

3.KYC implies:

a.Know Your Customer very well
b.Know Your existing Customer very well
c.Know Your prospective Customer’s family very well
d.Satisfy yourselves about the customer’s identity and activities

Answer 3 : d

4.Hypothecation is applicable in the case of

a) Movable goods

b) Immovable property

c) Book debts

d) Corporate guarantee

Answer : a

5.Charge created on LIC Policy is:

a) Hypothecation

b) Pledge

c) Assignment

d) Mortgage

Answer : c

6. IDBI bank grants a working capital finance to ABC & Co, a partnership firm, against hypothecation of inventory. The charge is to be registered with Registrar of Companies within

a) 30 days from the date of advance
b) 30 days from the date of hypothecation agreement
c) 30 days from the date of sanction of loan
d) None

Answer 6 : d

7.The Term “Credit Management” covers:

a. Capital Adequacy Norms
b. Risk Management including Asset/ Liability management
c. Credit appraisal – Decision and review of loans and advances
d. all of the above

Answer : d

8.Bank’s Assets are classified into standard assets, substandard assets doubtful assets and _____ assets, based on the recommendations of ---------- Committee

a) NPA, Rangarajan
b) Loss, Narasimham
c) Wasted , Ghosh
d) Risky , Tandon

Answer : b

9. Tele banking service is based on
   a. Virtual Banking
   b. Online Banking
   c. Voice processing
   d. Core Banking

Answer 9 : c

10) In bank's parlance, credit risk in lending is

a) Default of the bank to maintain CRR
b) Delay of the bank to open Letter of Credit
c) Default / delay of the bank to provide credit card to the customer
d) Default of the customer to repay the loan

Answer 10 : d

11) Long Form Audit Report (LFAR) is prepared and submitted by

a) RBI inspectors
b) IS Auditors
c) Statutory auditors
d) Concurrent auditors

Answer 11 : c

MCQ – CBS

1. CBS covers which of the following

a) Deposits, Advances
b) Bills & Remittances
c) General Ledger
d) All of the above

•Option d

2. CBS software resides

a.in a central application server located in the data centre of central office only

b.in the branch server

c.in the Data centre database server

d.in the ATM server

3. Which of the following is not an element of CBS Data centre

a.Infrastructure

b.Environment – Temperature, rodent & Fire control

c.Structured Cabling, Network operation centre

d.Registers maintained at branch

4. Which of the following is not a function of IT department in CBS

a. Proper delegation of tasks
b. Functions incompatibility
c. Segregation of duties
d. Internal audit

5. Which is not the element of operation of CBS branch

a. Access control
b. Physical & environmental control
c. LFAR preparation and upoading
d. BCP / DRP

6. Which is not a type of control in CBS Audit

a) *Management Controls*
b) *Organizational Controls*
c) *Operational Controls*
d) *Feedback controls*

7. Which review consists the first step in audit of CBS

a) *System log review*
b) *Review of IT Security policy*
c) *Database control*
d) *Network weakness assessment & VAPT*

8. RTGS Full form is

a) *Real Terminal General System*
b) *Rare Technical Generation System*
c) *Real Time Gross Settlement*
d) *Rear Terminal Gross Solution*

9. NEFT is used for

a) *Small transfers*
b) *International transfers*
c) *Minimum transfer of Rs 20 lakh*
d) *Transfers upto Rs 10 crore*

10. For RTGS, which information is to be furnished

a) *IFSC of receiving branch*
b) *swift of receiving branch*
c) *PAN no. of sender*
d) *Aadhar card no. of receiver*

11. As per RBI rules , bank must have DR, ideally :

a) Adjacent to DC in same floor
b) Same building of DC
c) Same city of DC
d) Distant place away from DC

Mod 7 Recap = ERP Audit

- An ERP audit is an investigation into aspects of that organization's ERP systems with an opinion as to the adequacy of the ERP.
- An ERP audit expresses an opinion whether the records and processes are adequate.
- **Compliance audit**= evaluate whether documented procedures are followed and whether there are documented procedures where necessary for processes people currently follow
- **Process audit**
- **ERP risk audit**= SOX angle
- **System audit**=

✓ Do we have the right hardware and network to best support our use of ERP?

✓ Are any users suffering slow processing because their computer is obsolete or improperly set up?

- **Security audit**

Audit in ERP

- All entries are Journal Entries
- • There are NO Primary or Secondary Books of Account – only data stored in Tables
- **Difficulty in Substantive Audit for ERPs**

✓Absence of Printouts

✓• Voluminous data

✓• Difficulty in Ledger Scrutiny

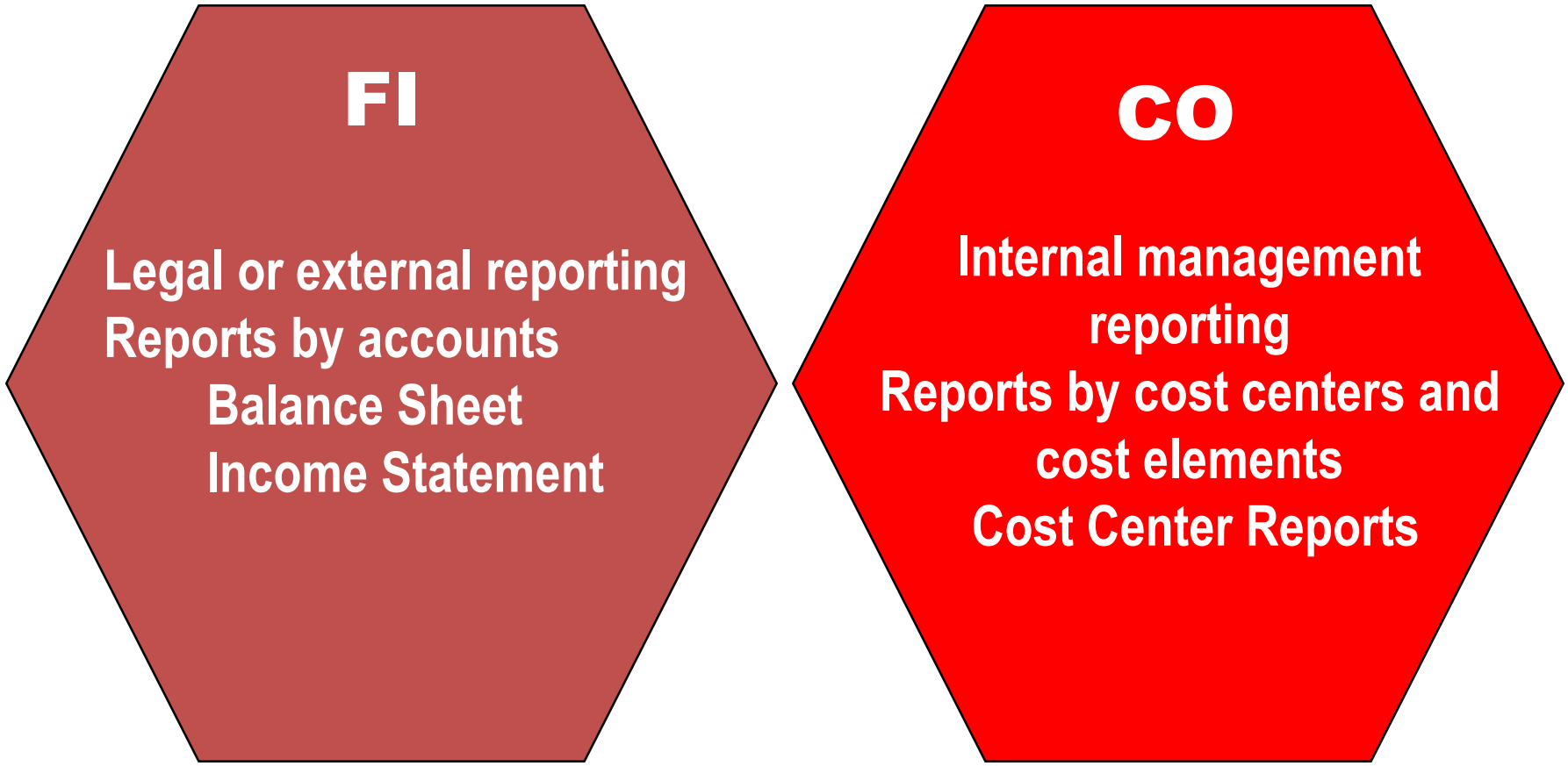
✓• Difficulty in audit of “manual” journal entries

Module 7 – Recap
SAP Business One

- SAP Business one — for Small / Medium Enterprises
- • Not much complex & Not expensive as compared to SAP R/3
- • Menu driven & **NOT T-code (Transaction Code)** driven as SAP R/3
- • Not much customization is possible
- • No modules , needs to buy entire package

- **SAP R/3**
- Client/Server Technology
- Highly Customizable
- Based on Industry Specific Best Practices
- Multi-lingual: International
- **1.Presentation** (User's PC)
- **2.Application**
- 3.**Database**

FI & CO comparison



SAP R/3 Modules

- CO – Controlling
  -Plants, Chart of Accounts, Customer/Vendor Masters
- FI - Financial Accounting
  -Financials, G/L, A/P, A/R
- SD - Sales and Distribution (Orders, Invoicing,EDI
  -Orders, Invoicing, EDI
- AM - Asset Management
  -AUC account from A/P transactions
- MM - Materials Management
  -Procurement for Production and Consumption
- PS - Project System (Construction Contractors)

SAP Audit Information System (AIS)

- AIS = auditors‘ toolbox within SAP environment
- → Structured collection and pre-setting of standard reports
- → Suitable for auditors with limited SAP experience
- → Role-based organization
- Comprehensive functionality for system and business audits
- → Provides monitoring of system inherent and configurable controls
- → Implements numerous reporting controls

- **Business audit** structured according to
- Financial statements
- Business Processes
- **AIS reporting tree** links to multiple types of documentation
- AIS documentation, SAP Library, web addresses
- Data export to external analysis and audit tools
- online real time or batch processed queries
- document data, account balances, and financial statement data
- **Why use SAP Audit Information System?**
- Acts as a bridge between auditors & the SAP system
- Helps to understand SAP terminology and structures
- Optimized for SAP system, direct access to critical data

SAP GRC - Recap

- SAP Governance, Risk & Compliance solution = enables organizations to manage regulations & compliance and remove any risk in managing organizations' key operations.

1. Easy integration of GRC activities into existing process
2. Automating key GRC activities.
3. Low complexity & managing risk efficiently.
4. Improve risk management activities.
5. Managing fraud in business process & audit management effectively.
6. Organizations perform better & companies can protect their values.

- SAP GRC solution = 3 main areas: Analyze, manage and monitor.

SAP Exception Reporting

- **Use**
- IS Auditor = select & highlight objects that are in some way different or critical.
- Results that fall outside a set of predetermined threshold values (exceptions) are highlighted in color or designated with symbols..
- Exception reporting allows = to determine objects that are critical for a query, both online, and in background processing.
- **To run an Exception report:**
- In the *Reports* menu, click *Reports*.
- A list of reports appears.
- Click *Exception*.
- The *Report Criteria: Exception* window appears

Module 7 : SAP & ERP Audit

1. SAP HANA was launched in

a) 2005

b) 2008

c) 2010

d) 2015

- Answer – c
- 2. _____ is the default programming language for SAP applications.

a) SAP GRC

b) SAP R/2

c) ABAP

d) None of the above

- Answer = c

- 3. _____ is a set of data that is needed for processing of transaction data and remains unchanged over large number of such transactions.

a) Constant

b) Meta

c) Uniform

d) Master

- **Answer- d**
- **4.** Controlling (CO) is usually a part of which Module of SAP ?

a) Sales & Distribution

b) Human Resource

c) Accounting

d) Materials management

- Answer – c

- 5. One of the latest version of SAP is :
- *A. SAP R1*
- *B. SAP S/2*
- *C. SAP R/3*
- *D. SAP S4 HANA*
- 6. The letter ‘S’ in S4 HANA stands for / implies ?
- *A. Systems*
- *B. Suite (business)*
- *C. Strategy*
- *D. none of the above*
- Answer= b

- 7. One of the challenges in ERP audit is :
- a. chance of control over-ride in ERP
- b. Difficulty in Substantive Audit for ERPs & absence of audit trail
- c. needs specialised ERP knowledge
- d. lack of ITGC in the ERP
- Ans = b
- 8. Which is true statement?

a) · SAP Supports Multiple Languages

b) · SAP Supports Multiple Currencies

c) SAP Can execute on any OS

d) All of the above are true

- 9. **SAP Business one** is usually for
- Small / Medium Enterprises
- MNC s
- Banks
- All the above
- Ans – a
- 10. SAP R/3 indicates _____:
- A. Presentation, database, application
- B. server, user, network
- C. database, firewall, application
- D. none of the above
- Ans = a

Module 8-11 : Cloud Computing - MCQ

- 1. What are the different layers in cloud computing

a) SaaS
b) PaaS
c) IaaS
d) All of the above
e) Ans = d

- 2. In which one of the following, a strategy record or Document is created respectively to the events, conditions a user may face while applying cloud computing mode.
- (a) Cloud Computing Value Proposition
- (b) Cloud Computing Strategy Planning
- (c) Planning Phase
- (d) Business Architecture Development
- **Answer:** (b)

- 3. Which services are provided by Window azure operating system

a) Compute
b) Storage
c) Management
d) All the above

- Answer – d
- 4. In the Planning Phase, which of the following is the correct step for performing the analysis?
- (a) Cloud Computing Value Proposition
- (b) Cloud Computing Strategy Planning
- (c) Both A and B
- (d) Business Architecture Development
- **Answer:** (c)
- 5. This phase involves selecting a cloud provider based on the Service Level Agreement (SLA), which defines the level of service the provider receives.
- (a) Maintenance and Technical Service
- (b) Selecting Cloud Computing Provider
- (c) Both A and B
- (d) None of the above
- **Answer:** (b)

- 6. In which one of the following phases, IT Architecture Development came?
- (a) Strategy Phase
- (b) Planning Phase
- (c) Deployment Phase
- (d) Development Phase
- **Answer:** (b)
- 7. IS Auditor must review which phase in Cloud Computing?
- (a) Pre migration
- (b) Migration
- (c) Post migration
- (d) all the above
- **Answer:** (d)
- 8. By whom is the backend commonly used?
- (a) Client
- (b) User
- (c) Stockholders
- (d) service provider
- **Answer:** (d)

- 9. Which of the following describe Cloud infrastructure?
- A. “no-need-to-know”.
- B. “flexibility and elasticity”
- C. “pay as much as used and needed”
- D. all the above
- 10. _____software is a program that emulates a physical machine
- A. hypervisor
- B. Virtual machine (VM)
- C. intelligent software
- D. none of the above
- Ans - b

All the Best in DISSA Exam !