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Your IT Audit and Information Security Partner

CISA Exam Preparation June 2015

*Session 8 : 28 April 2015*

*Starting around 4:45pm .....*



# Agenda

- Introductions
  - Facilitator
  - Participants
- Recap on prep expected and provisional schedule
- Overview of Chapter 4
- Challenges, Questions and answers
- Next Week
- Questions And contacts

*Note : Resources : Additional slide on Frequently Avoided Questions!*



# Introductions

- **Facilitator**
- Justin Williams B.Com, B.Compt (Hons), CA(SA), MBA, CISSP, CGEIT, CRISC, CISA
- 1<sup>st</sup> in the World, CISA Dec 2014
- Director at ITSec
- Previously Head of Risk, Security, Governance and Compliance for Transnet Group
  
- **Participants**
- Name
- How was the Chapter
- What was your most challenging activity of the week?
  
- ***Apologies : Raniel Misra : Off sick***



# Recap: Prep for Wk 1 of Ch4

## (28/4/2015)

- What you need to do
- Read as much of Chapter 4 as you can (**56 pages**)
- Make notes of things you don't quite understand
- Do the sample questions (at least 20)
- Flag those you get wrong, even if you know why you got them wrong
- Arrive on time (4:45pm Tuesday 14/4/2015)
- At ITSec offices, Forest Office 6, 15 Summit Drive, Sherwood, Durban
- Broadcast live on Google Hangout on Air (check [j-j.co.za](http://j-j.co.za) for link)
  
- Re-assess
- See how things are going
- See how all doing with the time commitment
- Decide if continue with two weeks per chapter or cover some chapters in one week



# Provisional Schedule

- 10-Mar-15 Introduction (Complete)
- 17-Mar-15 Chapter 1 The Process of Auditing Information Systems
- 24-Mar-15 Chapter 1
- 31-Mar-15 Chapter 2 Governance and Management of IT
- 07-Apr-15 Chapter 2
- 14-Apr-15 Chapter 3 Information Systems Acquisition, Development and Implementation
- 21-Apr-15 Chapter 3
- 28-Apr-15 Chapter 4 Information Systems Operations, Maintenance and Support
- 02-May-15 Additional Study revision session : Review of questions from 1<sup>st</sup> 4 Chapters
- 05-May-15 Chapter 4 (Raniel Misra)
- 12-May-15 Chapter 5 Protection of Information Assets (Raniel Misra)
- 19-May-15 Chapter 5 (Justin)
- 26-May-15 Exam Techniques + Revision
- 02-Jun-15 Sample Exam
- 06-Jun-15 Additional Study revision session : Review of questions from 1<sup>st</sup> 4 Chapters
- 09-Jun-15 Final Exam Techniques
- 13-Jun-15 Exam Date

As Requested

*Raniel Misra : Senior Manager : Information Systems Auditing,  
Auditor General of South Africa*



# Chapter 4:

## IS Ops, Maintenance & Support

<i>Dom</i>	<i>Description</i>	<i>%</i>	<i>Start</i>	<i>End</i>	<i>Pages</i>	<i>Marks/Page</i>
1	The Process of Auditing Information Systems	14%	29	62	33	0,42
2	Governance and Management of IT	14%	78	124	46	0,30
3	Information Systems Acquisition, Development and Implementation	19%	141	219	78	0,24
4	Information Systems Operations, Maintenance and Support	23%	234	290	56	0,41
5	Protection of Information Assets	30%	306	375	69	0,43

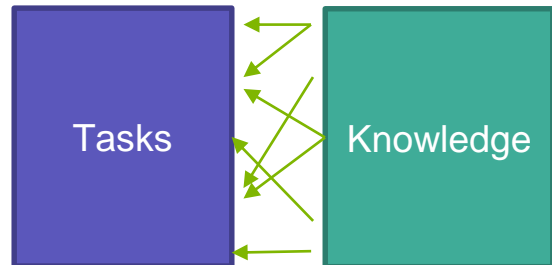


# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 11 Task Statements

- 4.1 Conduct periodic reviews of information systems to determine whether they continue to meet the organization's objectives.
- 4.2 Evaluate service level management practices to determine whether the level of service from internal and external service providers is defined and managed.
- 4.3 Evaluate third party management practices to determine whether the levels of controls expected by the organization are being adhered to by the provider.
- 4.4 Evaluate operations and enduser procedures to determine whether scheduled and nonscheduled processes are managed to completion.
- 4.5 Evaluate the process of information systems maintenance to determine whether they are controlled effectively and continue to support the organization's objectives.
- 4.6 Evaluate data administration practices to determine the integrity and optimization of databases.

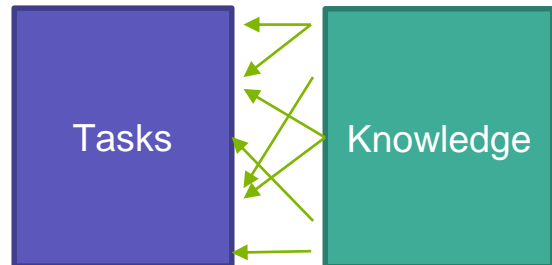


# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 11 Task Statements cont.
  - 4.7 Evaluate the use of capacity and performance monitoring tools and techniques to determine whether IT services meet the organization's objectives.
  - 4.8 Evaluate problem and incident management practices to determine whether incidents, problems or errors are recorded, analyzed and resolved in a timely manner.
  - 4.9 Evaluate change, configuration and release management practices to determine whether scheduled and nonscheduled changes made to the organization's production environment are adequately controlled and documented.
  - 4.10 Evaluate the adequacy of backup and restore provisions to determine the availability of information required to resume processing.
  - 4.11 Evaluate the organization's disaster recovery plan to determine whether it enables the recovery of IT processing capabilities in the event of a disaster.

### ***Group discussion***

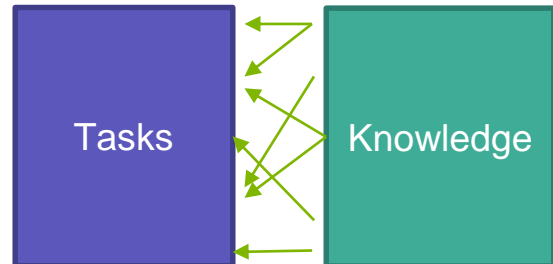




# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 19 Knowledge Statements : Knowledge of ...
  - 4.1 service level management practices and the components within a service level agreement
  - 4.2 techniques for monitoring third party compliance with the organization's internal controls
  - 4.3 operations and enduser procedures for managing scheduled and nonscheduled processes
  - 4.4 the technology concepts related to hardware and network components, system software and database management systems
  - 4.5 control techniques that ensure the integrity of system interfaces
  - 4.6 software licensing and inventory practices
  - 4.7 system resiliency tools and techniques (e.g., fault tolerant hardware, elimination of single point of failure, clustering)
  - 4.8 database administration practices
  - 4.9 capacity planning and related monitoring tools and techniques

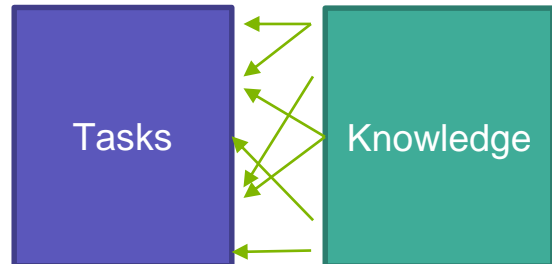


# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 19 Knowledge Statements cont. : Knowledge of ...
  - 4.10 systems performance monitoring processes, tools and techniques (e.g. network analysers, system utilization reports, load balancing)
  - 4.11 problem and incident management practices (e.g., help desk, escalation procedures, tracking)
  - 4.12 processes, for managing scheduled and non-scheduled changes to the production systems and/or infrastructure including change, configuration, release and patch management practices
  - 4.13 data backup, storage, maintenance, retention and restoration practices
  - 4.14 regulatory, legal, contractual and insurance issues related to disaster recovery
  - 4.15 business impact analysis (BIA) related to disaster recovery planning
  - 4.16 the development and maintenance of disaster recovery plans
  - 4.17 types of alternate processing sites and methods used to monitor the contractual agreements (e.g., hot sites, warm sites, cold sites)
  - 4.18 processes used to invoke the disaster recovery plans
  - 4.19 disaster recovery testing methods

### ***Group discussion***



# Chapter 4 Overview

## IS Ops, Maintenance & Support

- **4.2 Information Systems Operations (6 pg)**
  - Management of IS operations : Control Functions
  - IT Service Management : Service Level
  - Infrastructure Operations : Job Scheduling
  - Incident and Problem Management : Process of Incident Handling, Problem Management, Detection, Documentation, Control, Resolution and Reporting of Abnormal Conditions
  - Support/Help Desk
  - Change Management Process
  - Release Management
  - Quality Assurance
  - Information Security Management
  - Media Sanitization
- **4.3 Information Systems Hardware (4 pg)**
  - Computer Hardware Components and Architectures : Processing Components, Input/Output components, Types of Computers, Common Enterprise Back-end Devices, Universal Serial Bus, Memory Cards/Flash Drives, Radio Frequency Identification
  - Hardware Maintenance Program
  - Hardware Monitoring Procedures
  - Capacity Management



# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 4.4 IS Architecture and Software (6 pg)
  - Operating Systems : Software Control Features or Parameters, Software Integrity Issues, Activity Logging and Reporting Options
  - Access Control Software
  - Data Communications Software
  - Data Management: File Organisation
  - Database Management System : DBMS Architecture, Detailed DBMS Metadata Architecture, Data Dictionary/Directory System, Database Structure, Database Controls
  - Tape and Disk Management Systems
  - Utility Programs
  - Software Licensing Issues
  - Digital Rights Management
- 4.5 IS Network Infrastructure (20 pg)
  - Enterprise Network Architectures
  - Types of Networks
  - Network Services
  - Network Standards and Protocols
  - OSI Architecture
  - Application of the OSI Model in Network Architectures : Local Area Network, Wide Area Network, Wireless Networks, Public “Global” Internet Infrastructure, Network Administration and Control, Applications in a Networked Environment, On-demand Computing



# Chapter 4 Overview

## IS Ops, Maintenance & Support

- 4.6 Auditing Infrastructure and Operations (6 pg)
  - Hardware Reviews
  - Operating Systems Reviews
  - Database Reviews
  - Network Infrastructure and Implementation Reviews
  - IS Operations Reviews
  - Scheduling Reviews
  - Problem Management Reporting Reviews
- 4.7 Disaster Recovery Planning (10 pg)
  - Recovery Point Objective and Recovery Time Objective
  - Recovery Strategies
  - Recovery Alternatives : Contractual Provisions, Procuring Alternative Hardware, Application Disaster Recovery Methods, Data Storage Disaster Recovery Methods, Telecommunication Networks Disaster Recovery Methods
  - Development of Disaster Recovery Plans : IT DRP Contents, IT DRP Scenarios, Recovery Procedures
  - Organisation and Assignment of Responsibilities
  - Backup and Restoration : Offsite Library Controls, Security and Control of Offsite Facilities, Media and Documentation Backup, Types of Backup Devices and Media, Periodic Backup Procedures, Frequency of Rotation, Types of Media and Documentation Rotated, Backup Schemes, Method of Rotation, Record Keeping for Offsite Storage
- 4.8 Case Studies (2 pg)



# Chapter 4 Challenges

- Specific issues raised by participants on Chapter 4



# Questions and Answers

- Which questions did the participants cover in the week?
- Which ones did you get wrong, lets discuss



# Reminder : Special Session

## (2/5/2015)

- Questions lots of questions
- Do as many questions as you can before the session and lets discuss them
- We will do random sets of questions from the database to fill any remaining time
- Time : 8:30am to 11am





# Prep for Week 2 of Chap 4

## (5/5/2015)

- What you need to do
- Read the balance of Chapter 4 (**56 pages**)
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- See how things are going
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- Decide if continue with two weeks per chapter or cover some chapters in one week
  
- *Raniel Misra is likely to lead this session*



# Questions and Contacts

## Questions ?

Justin Williams

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Copies of slides :

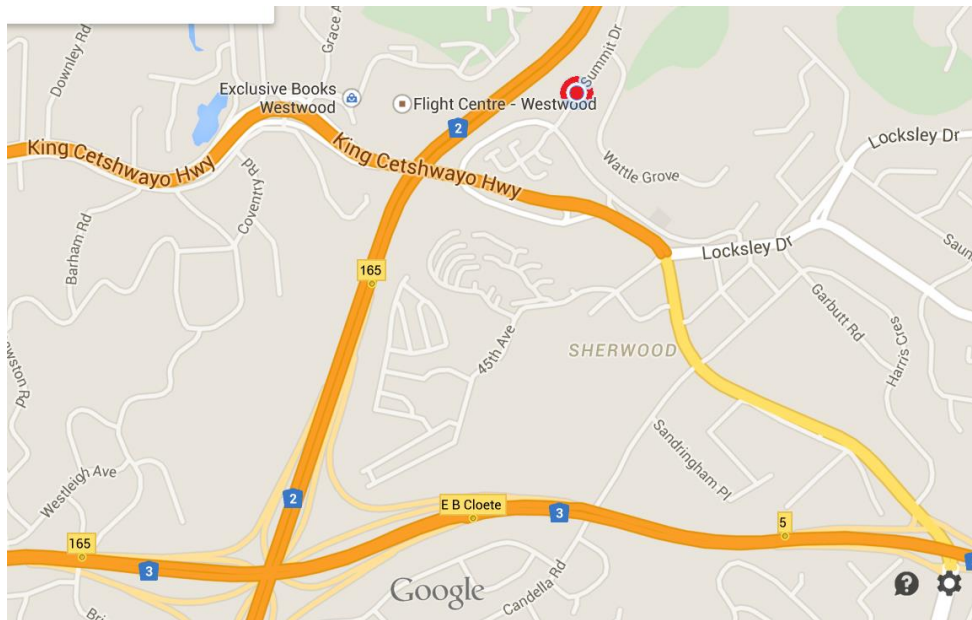
[www.j-j.co.za](http://www.j-j.co.za)

[www.itsec.org.za](http://www.itsec.org.za)



# Location of ITSec

Forest Office 6  
15 Summit Drive  
Sherwood  
Durban



# Extra material

## **Study Materials**

ISACA has prepared a variety of study resources in various languages to fully prepare for your CISA Exam. These include primary references, publications, articles, the ISACA Journal and other links.

## **Online Learning**

ISACA eLearning Campus offers a variety of online learning courses for certification exam preparation and continuing professional education.

## **Review Courses**

ISACA chapters in numerous countries offer CISA Review courses. View the Review Course list to determine if there is a course in your area, or contact your local chapter for additional courses. There will be courses in Durban, CapeTown & Jhb if demand exists.

## **Exam Preparation Community**

ISACA created the CISA exam preparation community as a place for current CISA exam registrants to collaborate and study with other registrants within the ISACA environment.

## **Free online CISA Course**

Cybrary has just launched a CISA online course, its free <http://www.cybrary.it/>



# Extra material : FAQ IT Audit

→ [www.isect.com/html/ca\\_faq.html](http://www.isect.com/html/ca_faq.html)  
Web Slice Gallery Watch Live Cric... EBSCO Publishi... ezproxy.ukzn.ac... Cricket TV: Cha... Other bookmark

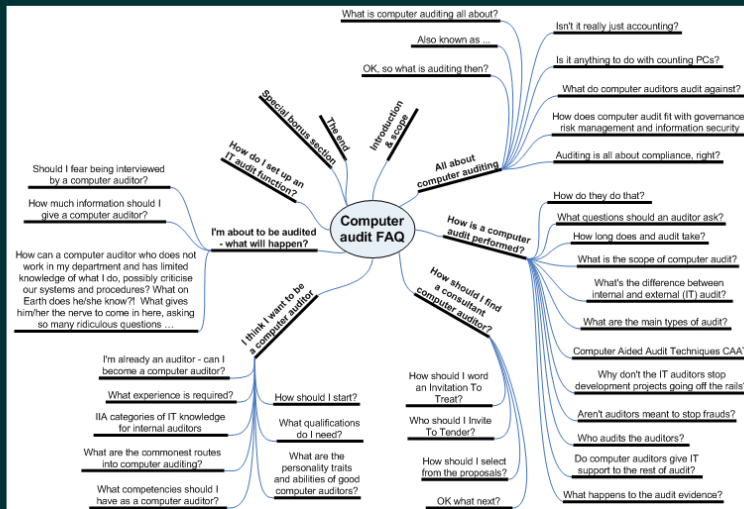
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## Frequently Asked Questions about IT auditing

Last avoided in March 2014

### Clickable contents mind map



### Introduction

This document is published on the DubDubDub as a public resource. Our purpose is twofold: to inform and entertain. Please forgive the British humour, spelling, InCorrect CapitalisatioN and distinctly cynical style ... but do experience the passion. We sincerely hope that it answers all

A comprehensive, honest, fresh and rather amusing overview of IT Audit

Worth a read

[http://www.isect.com/html/ca\\_faq.html](http://www.isect.com/html/ca_faq.html)



# CISA Practice Tests (free)

One of the free resources that we make available at AuditScripts.com is a database of free ISACA CISA exam questions. Many auditors use the CISA as a way to validate their information systems audit skills. Many consider the CISA certification an entry point or requirement for anyone in the IS audit field. Because so many people in the AuditScripts community value this certification we created a database of 900 exam questions to help students prepare for the exam. We hope that these questions will help students properly prepare for the exam.

CISA Exam Prep Questions – Chapter #1 (100 Questions Available)

CISA Exam Prep Questions – Chapter #2 (150 Questions Available)

CISA Exam Prep Questions – Chapter #3 (250 Questions Available)

CISA Exam Prep Questions – Chapter #4 (150 Questions Available)

CISA Exam Prep Questions – Chapter #5 (250 Questions Available)

CISA Exam Prep Questions – Complete Exam (900 Questions Available)

<http://www.auditscripts.com/free-resources/cisa-practice-tests/>

**Caution :** These are not official ISACA practice questions, use them for additional practice when you have exhausted all of the official ISACA questions you have access to

