Guidelines for Submitting Questions for
D.I.S.A. (ICAI) Question Bank

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Table of Contents

Committee on Information Technology
The Institute of Chartered Accountants of India

1. Objective

The Committee on Information Technology is in the process of enhancing the Question Bank for Post Qualification Course on Information Systems Audit.

This Guide aims to provide necessary guidance and assistance to Question writers in their efforts to increase the quality of new exam questions. This Guide explains the structure of DISA exam questions and assists Question writers in developing appropriate/ relevant Questions.

As you read through this Guide, please pay particular interest to the Question Development Checklist appearing under item no. 9. Applying these principles will greatly enhance the chances of your Questions being accepted.

2. Use of Submitted Questions

Committee on Information Technology proposes to enhance its question bank of for ISA Course such that it can be used as education and training content for development of the profession in this emerging area. These questions are expected to be used for Online Practice Test (OLPT), Researched Online Study Material (ROSM) and for the ISA Eligibility Test currently organized on half yearly basis in the months of May & November.

The Committee in the process of developing and enhancing its Question Bank that can be used to test the Higher Order Training Skills (HOTS) of candidates pursuing the ISA Course through the aforesaid processes. The questions are expected to set a high level of understanding to test a candidate's knowledge of established process and content areas defined by the DISA Background Material (see Appendix A on ISA Syllabus).

3. Why should you Submit Questions for ISA Question Bank

The Question Bank Development is expected to serve the following twin objectives set forth by the Committee:

- Assist/ Facilitate ISA Members to develop a better understanding of the subject through an intensive study in the process of developing questions, and hence greater learning and development and at the same time
- Enhance ISA Question Bank with contemporary questions to assist in the training and development of members pursuing the ISA Course.

The Committee has set forth the following compelling reasons for you to develop and submit questions for the ISA Question Bank:

- Receive the satisfaction of helping to shape the IS Audit Profession.
- Develop a deeper understanding of current IS Audit requirements through further reading/ study and real life situations
- For every accepted question, you get:
    - Honorarium of Rs.500/-.
    - 2 CPE Hours

4. Writing Quality Questions

The first thing to consider when writing a Question is to keep in mind the targeted audience - DISA candidate. A Question must be developed at the proper level of experience expected of a successful DISA candidate.

While writing Questions, one must take into consideration that IS Audit and Control is a global profession, and individual perceptions and experiences may not reflect the more global position or

circumstance. Since the examination and DISA Questions are developed for the IS Audit and Control community, this will require the Question writer to be somewhat flexible when determining a globally accepted practice.

5. Multiple Choice Questions

The DISA exam consists of multiple-choice Questions, which is a standard practice across the globe to test question in certification exams. Multiple-choice Questions consist of a question stem and four possible options, as a standard to test candidates. While a question stem may have lesser or more than four options, it is important to have a standard four options.

a. Question Stem

The Question item is the introductory statement or question that describes a situation or circumstance related to the knowledge being assessed. Question items can be written in the form of an incomplete statement as well, apart from a full question.

b. Question Options

The options complete the introductory statement or answer the question and consist of one correct answer (key) and three incorrect answers or distracters.

c. Answer Key

The key must reflect current practice. In some cases the Key will be the only correct choice, while in other cases the key will be deemed to be the BEST choice when considered with the other choices provided.

d. Distracters

Distracters are the incorrect options which should be plausible or possibly correct answers to candidates who are not knowledgeable enough to choose the key. The objective is to test the knowledge and experience of the candidate in choosing the correct option.

e. Explanation

Explanation is a content giving brief description/ details about the question and hence why the answer key is the correct option. The explanation can be one or more paragrpahns or points but should not exceed one A4 paper sheet.

6. Guidelines on Developing Questions

Question writers must use the Question Development Form included in Appendix B when developing and submitting new Questions to the Committee. It is highly suggested that you become familiar with this form prior to developing a question and make endeavor to complete all sections of the form for each Question submitted.

Question writers can write Questions on any topic within the DISA syllabus but are encouraged to concentrate the development of auestions within the areas specified in the DISA Question writing campaign. It is highly advisable that questions should be written on a knowledge statement within a specific task area. Questions MUST focus on a single topic or knowledge statement.

Please follow the steps given below after choosing a topic for developing a question. While writing your Question, please refer to the General Question Writing Principles given on Page 6 for further guidance and review your Question using the Question Development Checklist provided in Appendix C of this guide:

- Step 1: Write the Question stem and key able answer (Answer A on the Question Development Form).
- Step 2: Develop plausible distracters. The distracters should not be made up words or phrases, but may appear to be correct choices to an inexperienced professional. The development of quality distracters is usually the most difficult task for an Question writer. If you have difficulty with this part of Question development, consult with other staff members or subject matter experts.
- Step 3: Include a thorough explanation of why the answer is correct as well as why each distracter is not a correct choice. Please do NOT simply state that the distracters are incorrect – ensure that a plausible explanation is given.
- Step 4: Please indicate Page Numbers of Reference Text (ISA Background Material/ Course Book – IS Control & Audit by Ron Weber), if reference texts are used for the development of a Question, on the Question Development Form.
- Step 6: Have a peer or colleague review and critique your Question.
- Step 7: Submit the Question to CIT.

7. Do's & Don'ts in Question Writing

The "DOs and DO NOTs" of Question Writing for DISA Question Bank are given beolow for your ready reference and use"

DO's:

a) Test only one testing concept or knowledge statement in one question. Knowledge statements developed for this purpose and questions written wherefrom are expected to be test in higher quality, practically oriented situations.
b) Ensure that the question and respective options are compatible with each other. For example, if the question reads, "Which of the following audit procedures… ", then all options must be audit procedures.
c) Keep the question and options as short as possible and avoid the use of unnecessary text or jargon. Do not attempt to teach the candidate a concept or theory by providing too much information before asking the question.
d) Include common words or phrases in the Question stem rather than in the key and distracters.
e) All options should preferably be of the same approximate length and format.
f) Write options that are grammatically consistent with the Question and maintain a parallel grammatical format. For example if the key begins with a verb ending with "ing", then all distracters must begin with a verb ending with "ing".
g) Use only professionally acceptable and technical terminology in the Question stem and options to maintain a high level of questions.

DO NOT:

1. Use a keyword or phrase in the Question key that appears in the question. Experienced test takers will look for clues such as this that often identify the key.
2. Use words such as "frequently", "often", "common", or "rarely" as they introduce subjectivity into the Question. If a Question is subjective, it can be argued that more than one option is the right answer and lead to controversies.
3. Use terms in the question stem such as "always", "never", or "all" since they are not absolute

and hence make it easier for candidates to eliminate distracters.

4. Use terms such as “least”, “not” or “except” as they are negative and require a candidate to choose an incorrect or least preferred choice, rather than a correct or preferred choice.
5. Test knowledge regarding vendor specific products as the training and development envisaged is generic in nature. Such questions would be ab-initio rejected.

8. DISA Question Development Form

All Questions must be submitted on an Question Development Form (see Appendix B) and must be written in English. The Form includes:

- Name, Address, E-Mail ID, Mobile Number
- Area of Specialization/ Interest
- Question
- Options
- Answer Key
- Justification & explanations
- Module Number and Title to which the question pertains
- Reference Source: Question must include a clear identification of where this subject has been discussed in the DISA Background Materials/ Question Bank provided to the Candidates to ensure that the question is NOT syllabus and assist the Committee to better management of the Questions.
- Send a softcopy of the question by e-mail to cit@icai.in to facilitate prompt processing.

9. Question Development Checklist

Contributors to the D.I.S.A. (ICAI) Question Bank must ensure that the following checklist is duly complied before submitting their questions:

1. Does the Question test an IS Audit, Control or Security concept?
2. Does the Question test only one IS Audit, Control or Security concept?
3. Is there enough information (scenario) in the question to allow for only one correct answer? A candidate must not be able to interpret a distracter as correct, based on assumptions due to a lack of information in the question.
4. Is there only one answer to the question for any situation, organization or culture?
5. Are the question and all options compatible with each other? For example: “Which of the following audit procedures…?” All options must be audit procedures.
6. Does the Question have plausible distracters but only one correct answer?
7. Have you avoided having words or phrases in the key that appear in the stem?
8. Have you avoided unnecessary text or jargon from the stem or options?
9. Have you avoided using subjective terms such as “frequently”, “often”, “common”…. in the stem and options?
10. Have you avoided using absolute terms such as “all”, “never”, “always”... in the stem and answer options?
11. Have you avoided asking a negative question – using such terms as “least”, “not”, “except”…?

10. Question Submission – Essential Requirements

DISA Question Writers are required to ensure the following while submitting questions for review:

- Complete details are submitted about the question by filling all fields of the Question Submission Form, as available in Appendix X of this guide.
- Questions must be submitted in soft-copy form using Microsoft Word or Windows WordPad.
- Multiple Questions should be included in one document.
- All Questions MUST be submitted in English.
- Completed forms have to be sent to the following address:

The Secretary
Committee on Information Technology
The Institute of Chartered Accountants of India
ICAI Bhawan
Plot No.52-54, Vishwas Nagar
Shahadara, Delhi-110032.
E-Mail: cit@icai.org ,

11. Question Review Process

The Office of the Committee on Information Technology would undertake an initial review, on receipt of the questions, to ensure completeness and compliance with the question writing principles/ guidelines given in this guide.

If the office finds that the details submitted are incomplete or flawed in a significant manner would be returned to the authors with a constructive feedback by the DISA Technical Team. In some cases a question submitted may returned by the office, in case it is found that there is a need for some revision and resubmission after suggested changes are made. In certain other cases, a question may be considered to be un-suitable to be considered for rewrite and resubmission.

The questions that pass the initial review will be considered by "ISA Question Bank Study Group" of the Committee on Information Technology for review and approval periodically. This Study Group would meet from time to time to consider reasonable number of questions for review and approval. The Study Group would short-list questions for approval of the Committee and/ or returned for further work. If returned, the Question will include appropriate and constructive feedback. If accepted, the Question will become the property of Committee on Information Technology and the author would be allotted the honorarium and CPE Hours, as given in earlier sections.

Appendix A

ISA Syllabus

Module 1: Information Technology Infrastructure

1 Introduction to Computer Hardware

Classification of Computers -Components of Computer-Data and Capacity Management-Selection Criteria for Hardware-Hardware Maintenance Procedures

2 Software Architecture

Classification of Software-Categories of Systems-Information Systems-Client - Server Architecture-Introduction to Object-Oriented Concepts-Stages in Software Development-The Selection Criteria for Software

3 Database Management Systems

Introduction-Roles and Duties of a Data Base Administrator-Data Base Failures and Recovery Procedures-Relational Model

Module 2: Communication & Networking Technologies

1 Introduction to Networking

Introduction to Networking-Classification of Networks-Types of Communication-Components of a Network-Network Topologies-The OSI Model-Networking Protocols

2 Network Hardware and Software

Network Cabling-Networking Devices-Network Operating Systems

3 Network Design and Maintenance

Principles of Network Design-WAN Technologies-Network Management-Data Backup and Recovery Strategies

4 Internet

Introduction to the Internet-Internet Infrastructure-Internet Services World Wide Web

5 Network Security

Cryptography-Security Protocols-Firewalls-Intrusion Detection Systems (IDS)-Virtual Private Networks

Module 3: Protection of Information Assets

1 Introduction to Information Assets

Information Classification-Classification of Information Assets Classification of Users-Naming Conventions-Access Control Models Computer Crime-Computer Forensics

2 Information Security Policy

Tools to Implement Policy: Standards, Guidelines and Procedures Program Policy-Issue-Specific Policy-System-Specific Policy-Policy Implementation-Interdependencies-Awareness. Training and Education-Cost Considerations-Audit of IS Security Policy

3 Logical Access Controls

Objectives of Logical Access-Paths of Logical Access-Logical Access Exposures-Access Controls and Authentication-Authentication Techniques-Access Controls in Operating Systems-Database Security Audit Trail-Audit of Access Controls

4 Application Controls

Components of Application Controls-Application Boundary Controls-Input Controls-Processir1'g Controls-Data file controls Output Controls-Existence Controls in Application Systems-Audit of Application Controls

5 Network Security Controls

Network Characteristics-Threats and Vulnerabilities-Network Security Controls-Auditing Network Security

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6 Securing Physical Access

IS Assets: Objects of Physical Access Controls- Physical Access Threats and Exposures-Physical Access Control Techniques-Auditing Physical Access

7 Environmental Access Controls

IS Assets: Objects of Environmental Controls - Environmental Threats and Exposures-Techniques of Environmental Control-Administrative Controls-Technical Controls-Audit and Evaluation of Environmental Controls

Module 4: Systems Development Life Cycle & Application Systems

1 Business Application Development Framework

Need for Structured Systems Development Methodology-Overview of Phases in Structured Methodology of SDLC-Primary Phases in SDLC Roles Involved in SDLC

2 Phases in Development of Software

System Design Phase-Development Phase: Programming Methods. Techniques & Languages-Software Testing Phase-Implementation of Software-Post Implementation Review-Umbrella Activities

3 Alternative Methodologies of Software Development

Data Oriented Systems Development-Object Oriented Systems Development-Prototyping-Rapid Application Development (RAD)-Reengineering-Structured Analysis-Web based Application Development-Agile Development-Information Systems Maintenance Practices

4 Project Management Tools and Techniques

Budgets and schedules-Gantt Charts-Program Evaluation Review Technique (PERT)-Critical Path Method (CPM)-System Development Tools and Productivity Aids

5 Auditing the System Development Process

IS Auditor's Role in Systems Development, Acquisition & Maintenance IS Auditor's Role in Reviewing Developmental Phases of SDLC-IS Auditor's Role in Project Management

6 Specialized Systems

Artificial Intelligence (Al)-Expert Systems-Data Warehouse-Decision Support Systems (DSS)-Point of Sale Systems (POS)-Automatic Teller Machines (ATM)-EDI, E-Commerce, ERP Systems

Module 5: Business Continuity Planning

1 Introduction to BCP
Need for BCP/DRP-Types of Disasters-Steps in Developing a Business Continuity Plan-Law and Standards
2 Risk Assessment
Objectives of Risk Assessment-Asset Identification and Prioritization Threat Identification-Exposure (Vulnerability) Assessment Specification of Objectives
3 Data Recovery
The Information Asset-Data Classification-Types of Backup-Technical Methods for Backup
4 System Recovery
Contingency Considerations -Strategies for Centralized Systems Strategies for Networked Systems -Strategies for Distributed Systems Strategies for Telecommunications Systems-Human Resources Issues
S Contingency Plan Development
Components of an Effective Business Continuity Plan - Kinds of Plans Insurance -Continuity Plan Organization and Implementation-Testing and Validation-Business Continuity Plan Maintenance
6 Audit and Evaluation of BCP
Audit of BCP

Module 6: Information Systems Organization & Management

1 Information Systems Organization & Management
Impact of IT and the Need for Related Competencies and Skill-sets Business Process, Organization Structure and Controls -Corporate Governance and IT Governance-IT Steering Committee -IT Strategy Planning-IT Organization and Relationships-Segregation of Duties
IT Policies, Procedures and Practices -Human Resource Management -Key IT Activities-Auditing IT Polices, Procedures and Practices
2 IT Security and NT Security policies
IT Regulatory Issues-IT Security-IT Security Policy-IT Management Issues-Auditing IT security and Controls
3 Information Systems Management and Controls
Management Responsibility -Categories of Control Techniques
4 IS Management Practices
Human Resource Management-Performance Management Documentation Standards-Auditing IT Management
5 IT Change Management
IT infrastructure Management-Configuration Management-Need for Change and Change Management-Key Areas and Impact of IT Change Management-Overview of Change Management Policies and Procedures-Control's for Effective Change Management-Auditing IT Change Management
6 Organization Structure & Controls in IT Department
Organizational Structure and IT controls-Management Structure Defining Roles and Responsibilities in IT department-Segregation of Duties and Related techniques-Segregation of Duties-Identifying Incompatible Functions-Information Access Classification-Auditing IT Organization Structure and Controls

Module 7: IS Audit Process

1 Information Systems Risks and Controls
Information Systems Auditing Fundamentals-Information Security - Fundamental Expectations-Information Systems Risk-IS Risk Assessment-Understanding the Relationships Between IS risks and Controls-Controls Assessment-Mitigating IS Risks Through IS Risk Management - Role of Auditor in Risk Assessment-Audit Considerations in Case of Outsourced -IT Activities-Information Systems Control Framework-Security Policy Framework-IT Governance
2 Overview of Information Systems Audit
Impact of Information Technology on the Audit -Need for IS audit-Definition of IS Audit-Fundamentals for Establishing an IS Audit Function-Engagement Letter-Skills and Competence Requirements of an IS Auditor

3 Information Systems Audit Performance
Information Systems Audit Strategy-Phases in Information Systems Audit-Planning an IS Audit-Audit of Outsourced Activities Materiality-Use of Sampling in Information Systems Audits Documentation Requirements-Reporting-Follow Up

4 IS Audit Techniques & Computer Assisted Audit Techniques IT Environment Impact on Audit
Methodology-Auditing in a Computerized Information Systems Environment-Audit of IT Controls and Security-IS Audit Approach-Computer Assisted Audit Techniques - Types of CAA Ts-Other Computer Assisted Audit Techniques Continuous Auditing Approach
5 Overview of Information Systems Audit and Related Standards Audit Standards-IS Audit Guidelines By ISACA-COBIT _ IT Governance Model-Other Global Standards on IS Assurance and Audit-Overview of IT Certification -Overview of Regulatory Developments Impacting Controls in a Computerized Environment

Appendix B

Question Development Form

To,

The Secretary
Committee on Information Technology
The Institute of Chartered Accountants of India
ICAI Bhawan
Plot No. 52-54, Vishwas Nagar
Sahadara, Delhi

Sir,

I hereby contribute following Question for consideration to be included in the D.I.S.A. (ICAI) Question Bank of the Institute as per the guidelines:

1. Question	
2. Answer Options:	a.
	b.
	c.
	d.
3. Correct Answer:	
4. Explanation:	
5. Justification:	
6. Reference Source:	
7. Module No. & Title	

I hereby confirm and certify that (a) the aforesaid question has been developed and contributed by me, (b) there is no violation of Copyright/ IPR, (c) I shall be solely responsible for any copyright/ IPR liability, if any, and agree to defray any costs incurred by the Institute in this regard, (d) The aforesaid content will not be used by me for any other purpose like publication of articles, or otherwise without the specific written permission of the Institute and that (e) The aforesaid content will henceforth be the property of the Institute and I or my heirs will have no claim over it, if accepted.

I am enclosing herewith a copy of my CV detailing my qualifications, area of specialisation and experience in the field of IS Audit for your ready reference and use. I have sent a soft copy of this question to cit@icai.in to facilitate prompt processing of this question.

Thanking you

Yours faithfully

Signature		Address	
Name:			
Qualifications		Mobile No.	
Membership & ISA No.		e-Mail ID:	