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APPLICATION CONTROLS

Introduction

In conducting a review of a computerized system, the auditor must recognize that methods of processing and the nature of computing facilities will vary.

Whichever method of processing are used it is important that the auditor has a clear understanding of the basic controls and safeguards which should apply in all circumstances

Audit Objectives:

The overall objective of an audit review of a computer system is:

> To review system proposals to ascertain whether they incorporate adequate internal controls and ensure that these controls form part of the operational system when implemented and that any system amendments do not invalidate them.

This overall objective may be broken into four sub-objectives: (i) input control; (ii) processing controls; (iii) Output controls and (iv) Audit trail.

(I). INPUT CONTROLS

Audit objectives:

> Designed to ascertain whether the system does, as far as is reasonably possible, ensure that input is genuine, complete, not previously processed, accurate and timely.

(Thus the input controls are either preventive or detective in nature

The auditor needs to satisfy himself or herself on the following:

> ➢ **Authorization of input data**: Limit the risk of inappropriate input of key financial data due to unauthorized access to key financial functions or data.
>
> ➢ **Completeness of input data**: All the data has been entered for computer processing.
>
> ➢ **Accuracy of input data**: the data have been entered into the computer system accurately.
>
> ➢ **Data conversion accuracy**: input is prepared and accurately converted to machine readable form.
>
> ➢ **On-line system**: On line input occurs when transactions are entered into the computer as they happen, one at a time but Batch input occurs when transactions are grouped and entered as a group

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➢ **Control of input documents:** They should be entered into the computer system once. Table 1 summarizes the objectives of input controls and gives some examples.

Table 1: A Summary of the Objectives of Input Controls and Few Examples

	Input Control Objective	Example
1	All input is authorized	Passwords give implicitly authority. All input is on an authorized form
2	The input is complete	All data fields contain an entry. Input forms are sequentially numbered input forms
3	Input is not duplicated	Input references must be unique. Stamp input documents after input
4	Input is accurate	Validation routines, optical character reading, manually check input log with sources documents
5	Input is timely	General controls such as, timetables
6	An audit trail	Source documents are filed, input documents are filed, and input logs are retained.

Key Questions – Input controls

1. Are there controls to ensure that all input is authentic?
2. Are there controls to ensure that all genuine input is submitted for processing?
3. Are there controls to prevent the possibility of duplicate processing?

(II). PROCESSING CONTROLS

Audit Objectives

To ensure that the correct data and program files are used, that all data is processed in a secure manner, accounted for and written to appropriate file and that data conforms to predetermined standards or falls within specified parameter values.

Key Questions – processing Controls

1. Are there controls to ensure that all data is processed
2. Are there controls to ensure that all processing is accurate?
3. Are there controls to ensure that all processing is authorized?
4. Are there controls to ensure that correct data and program files are used in processing?

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Table 2 summarizes the objectives of processing controls and gives some examples.

Table 2: A Summary of the Objectives of Processing Controls and Few Examples

	Processing Controls Objectives	Examples
1	All data is processed	Calculate control totals, comparison of input and output
2	All Processing is accurate	Strong General controls over program amendments are critical for effective processing, Exception reports.
3	On-line processing is authorized	Password control, review authorized activity log.
4	Correct program and data files are used	Program procedures to identify files. Validation routines. General controls over file handling

(III). OUTPUT CONTROLS

Audit objectives

> To ensure that all expected output is produced, that it is complete and appears reasonable, that it serves a useful purpose and is distributed on time, and in such a way that confidentiality is maintained as necessary.

The auditor needs to satisfy him or herself on the following:

- Completeness of output
- Reasonableness of output
- Timelines and confidentiality

Key Questions – Output controls

1. Are there controls to ensure that all expected output is produced?
2. Is output distributed promptly and secured to authorized recipients only?
3. Is output accurate?

Summary of Applications Controls

Application controls are those controls that relate to the scope of individual business processes or application systems, including data edits, separation of business functions, balancing of processing totals, transaction logging, and error reporting.

Thus, the objective of application controls is to make sure that:

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- Input data is accurate, complete, authorized, and correct.
- Data is processed timely as intended
- Data stored is accurate and complete.
- Outputs are accurate and complete.
- A record is maintained to track the process of data from input to storage and to the eventual output. Several types of application controls exist.

These include:

- **Input Controls** – These controls are used mostly to check the integrity of data entered into a business application, whether the data is entered directly by staff, remotely by a business partner, or through interface. Data input is examined to ensure that is remains within specified limits.

- **Processing Controls** – These controls provide an automated means to ensure processing is complete, accurate, and authorized.

- **Output Controls** – These controls address what is done with the data and should compare output results with the intended result by checking the output against the input..

- **Management (Audit) Trail** – Processing history controls, usually referred to as an audit trail, enables management to identify the transactions and events they record by tracing transactions from their source to their output and by tracing backward. These controls also monitor the effectiveness of other controls and identify errors as close as possible to their sources.

Interactive Questions

The following represent irregularities that could occur in a computerized environment. For each irregularity identify control procedures that would have been effective in either preventing or detecting the irregularity.

(i)   A deposit for Julius A. Kingu at the local bank was inadvertently recorded as a deposit in the account of Juliet A. Jingu

A control procedure that would have been effective in either preventing or detecting the irregularity was:

(ii)   Duplicate payments were prepared for all employees of the accounts section in Mangu & Co for the month ended December, 2015. This occurred because the data processing department processed the data payment vouchers twice.

A control procedure that would have been effective in either preventing or detecting the irregularity was:

(iii) An individual in the accounts section gained access to the products master file and, in an attempt to change prices for one customer, inadvertently changed prices for the products identified for all customers.

A control procedure that would have been effective in either preventing or detecting the irregularity was:

(iv) A customer order was filled and sent to a former customer, who had already declared bankruptcy

A control procedure that would have been effective in either preventing or detecting the irregularity was:

(v) The selling price for all products handled by a company sales person was consistently reduces by 25% by a sales person. The sales manager did not authorize the sales person to reduce prices from a price list.

A control procedure that would have been effective in either preventing or detecting the irregularity was:

(vi) A customer number was transposed during the order-taking process. Consequently, the sales were billed to another person. By the time the original customer was identified, the original customer was out of business

A control procedure that would have been effective in either preventing or detecting the irregularity was:

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(vii) The accounts receivable clerk, who also operated the company's personal computer, took cash remittances and recorded the credit to the customer's account as a discount.

> A control procedure that would have been effective in either preventing or detecting the irregularity was:

(viii) A disgruntled programmer often came to the office in the evenings to copy confidential client data such as customer lists, discounts, and so forth on the magnetic tapes, which he sold to competitors at handsome prices.

> A control procedure that would have been effective in either preventing or detecting the irregularity was:

(ix) A computer programmer added a module to the payroll program that started with an "IF" statement to identify his employee number. If it were his record, the program was instructed to multiply computed pay by 1.5, thus increasing the programmer's pay by 50%

> A control procedure that would have been effective in either preventing or detecting the irregularity was:

(x) The social services department made support payments to poor students. A poor student could be input into the system on recommendation of "warden or matrons". Some wardens and matrons entered fictitious students on the system and had support payments sent to authorized addresses. The wardens and matrons then cashed the support payments and eventually transferred the cash to their own accounts

> A control procedure that would have been effective in either preventing or detecting the irregularity was:

APPROACHES TO COMPUTER AUDITING

There are two main approaches to IT audit: auditing around the computer and auditing through the computer

Audit around the computer

Audit around the computer means that processing done by the computer system needs not to be audited as auditor expects that sufficient appropriate audit evidence can be obtained by

comparing inputs with outputs. In simple words evidence is drawn and conclusions are reached without considering how inputs are being processed to provide outputs. The auditor carries out his audit work in the same way as in a manual audit system except with one difference that the auditor examines computer printouts instead of handwritten books of account. He or she concentrates on input & output and ignores the data processing.

This approach is more often known as **black box audit approach**. Most often this approach is used either because:

- processing done by the computer is too simple e.g. casting, sorting etc
- auditor is already aware of the software's reliability. This is the case with most of off-the-shelf software used by client without any in-house alteration and thus need not to be checked.
- auditor has no mean to gain understanding of the computer system and thus resorts with this approach. This situation can arise out of circumstances including:
    - lack of appropriate system documentation
    - auditor lacks expertise or skills to understand or use the computer system for auditing purposes.
    - auditor is not given access to computer system at the level required

Audit around the computer approach is used in situations when auditor is of the opinion that computer system is reliable and often comparison of inputs i.e. source documents to outputs i.e. financial reports is done which in auditor's judgement is enough.

For this reason, relying too much on this approach is not recommended for important aspects of the audit especially where assessed risk is high as this may result in ineffective audit and in the end the auditor may express an inappropriate audit opinion.

Auditing through the computer

Under this approach, the auditor evaluates the internal controls relating to the EDP as well as other controls also. On the basis of this evaluation, he has to determine the nature, timing & extent of his substantive procedures. Thus the auditor focuses upon all phases of EDP viz. input,

processing & output. But for adopting this approach, auditor should have sufficient knowledge of computers so that he can plan, direct, supervise & review his work

Exam Question

Application controls are manual or automated procedures that typically operate at a business process level and apply to the processing of transactions by individual applications. Application controls can be preventative or detective in nature and are designed to ensure the integrity of the accounting records. Application controls are often divided into the following three control categories: input controls, processing controls and, output controls.

Required

(a) Explain the objectives of each of the three application Controls, i.e., Input, process and output controls   (9 marks)

(b) There are two approaches to auditing in a computer environment: (i) auditing around the computer, and (ii) auditing through the computer.

> (i) Describe what is meant by: (1) auditing around the computer, and (2) auditing through the computer.   (8 marks)
> (ii) When is it suitable to use auditing around the computer?   (3 marks)

                                              (Total 20 marks)