1) The purpose of check digit verification of an account number on an update transaction is to

A. Verify that the account number corresponds to an existing account in the master file.

B. Detect a transposition of an account number entered into the system.

Answer (B) is **correct**.
A major control used to guard against errors made in transcribing or keying data is a check digit. A check digit is a detective control designed to establish the validity and appropriateness of numerical data elements, such as account numbers. The check digit within the code is a mathematical function of the other digits. Recalculation of the digit tests the accuracy of the other characters in the code. Check digit verification prevents single-digit errors from leading to erroneous updates.

C. Ensure that supporting documentation exists for the update transaction.

D. Require the account number to have the correct logical relationship with other fields.

2) The two broad groupings of information systems control activities are general controls and application controls. General controls include controls

A. Relating to the correction and resubmission of faulty data.

B. For developing, modifying, and maintaining computer programs.

Answer (B) is **correct**.
General controls are policies and procedures that relate to many information systems applications and support the effective functioning of application controls by helping to ensure the continued proper operation of information systems. General controls include controls over (1) data center and network operations; (2) systems software acquisition and maintenance; (3) access security; and (4) application systems acquisition, development, and maintenance.

C. Designed to ensure that only authorized users receive output from processing.

D. Designed to ensure that all data submitted for processing have been properly authorized.

3) In an internal audit for a retail chain, you encounter a scenario where multiple staff members can access the inventory system unsupervised. What immediate control would you recommend to mitigate the risk of unauthorized alterations?

A. Daily backup of inventory data.

B. Increase staff training on data handling.

C. Conduct regular inventory audits.

D. Restrict access through role-based permissions.

Answer (D) is **correct**.
Implementing role-based permissions ensures that only authorized personnel can perform certain actions, reducing the likelihood of unauthorized alterations to critical systems like inventory management.

4) If a control total were to be computed on each of the following data items, which would best be identified as a hash total for a payroll computer application?

A. Hours worked.

B. Total debits and total credits.

C. Net pay.

D. Department numbers.

Answer (D) is **correct**.
The three types of control totals are record counts, financial totals, and hash totals. Record counts establish the number of source documents and reconcile it to the number of output records. Financial totals compute dollar totals from source documents (e.g., the total dollar amount of invoices processed) and reconcile them with the output records. Hash totals add numbers on input documents that are not normally added (e.g., department numbers), resulting in a total that is "meaningless" for any purpose other than this control.

5) When assessing application controls, which one of the following input controls or edit checks is most likely to be used to detect a data input error in the customer account number field?

A. Limit check.

B. Validity check.

Answer (B) is **correct**.
Validity checks are tests of identification numbers or transaction codes for validity by comparison with items already known to be correct or authorized. For example, Social Security numbers on payroll input records can be compared with Social Security numbers authorized by the personnel department.

C. Control total.

D. Hash total.

6) A catalog company has been experiencing an increasing incidence of problems in which the wrong products have been shipped to the customer. Most of the customer orders come in over the telephone, and an operator enters the data into the order system immediately. Which of the following control procedures, if properly implemented, would address the problem?

1. Have the computer automatically assign a sequential order number to each customer order.
2. Implement a self-checking digit algorithm for each product number and request entries by product number.
3. Request entries by product number, have the computer program identify the product and price, and require the operator to orally verify the product description with the customer.

A. 2 only.

B. 1, 2, and 3.

C. 2 and 3 only.

Answer (C) is **correct**.
A self-checking digit detects incorrect codes. The digit is generated by applying an algorithm to the code. During input, the digit is recomputed by applying the algorithm to the code actually entered. Oral verification also addresses the problem of incorrectly identifying the product number. Assigning a sequential number to the customer's order helps build an audit trail but does not address the product identification issue.

D. 1 and 2 only.

7) A small activity under review recently put its cash disbursements system on a server. About which of the following internal control features would an auditor most likely be concerned?

A. Programming of the applications are in Visual Basic rather than Java.

B. The server is operated by employees who have cash custody responsibilities.

Answer (B) is **correct**.
Segregation of duties is a basic category of control activities. Functions are incompatible if a person is in a position both to perpetrate and conceal fraud or errors. Hence, the duties of authorizing transactions, recording transactions, and custody of assets should be assigned to different people. Those employees that operate the server may be able to override the controls to change records to conceal a theft of cash.

C. Only one employee has the password to gain access to the cash disbursement system.

D. There are restrictions on the amount of data that can be stored and on the length of time that data can be stored.

8) The purpose of input controls is to ensure the

A. Authorization of access to data files.

B. Authorization of access to program files.

C. Completeness, accuracy, and validity of updating.

D. Completeness, accuracy, and validity of input.

Answer (D) is **correct**.
Input controls provide reasonable assurance that data received for computer processing have been properly authorized and are in a form suitable for processing, i.e., complete, accurate, and valid. Input controls also relate to rejection, correction, and resubmission of data that were initially incorrect.

9) A mail-order retailer of low-cost novelty items is receiving an increasing number of complaints from customers about the wrong merchandise being shipped. The order code for items has the format *wwxxyyzz*. The major category is *ww*, *xx* is the minor category, *yy* identifies the item, and *zz* identifies the catalog. In many cases, the wrong merchandise was sent because adjacent characters in the order code had been transposed. The best control for decreasing the number of orders with the wrong merchandise is to

A. Require customers to specify the name for each item they order.

B. Add check-digits to the order codes and verify them for each order.

Answer (B) is **correct**.
Self-checking digits may be used to detect incorrect codes. The digit is generated by applying an algorithm to the code. During the input process, the check digit is recomputed by applying the same algorithm to the code actually entered.

C. Separate the parts of the order code with hyphens to make the characters easier to read.

D. Use a master file reference for all order codes to verify the existence of items.

10) Which of the following computerized control procedures would be most effective in ensuring that data uploaded from desktop computers to a server are complete and that no additional data are added?

A. Self-checking digits to ensure that only authorized part numbers are added to the database.

B. Batch control totals, including control totals and hash totals.

Answer (B) is **correct**.
Batch control totals for the data transferred can be reconciled with the batch control totals in the existing file. This comparison provides information on the completion of the data transfer. Batch totals may include record counts, totals of certain critical amounts, or hash totals. A hash total is a control total without a defined meaning, such as the total of employee numbers or invoice numbers, that is used to verify the completeness of data. Thus, the hash total for the employee listing by the personnel department could be compared with the total generated during the payroll run.

C. Passwords that effectively limit access to only those authorized to upload the data to the mainframe computer.

D. Field-level edit controls that test each field for alphanumerical integrity.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

11) Omen Company is a manufacturer of men's shirts. It distributes weekly sales reports to each sales manager. The quantity 2R5 appeared in the quantity sold column for one of the items on the weekly sales report for one of the sales managers. The most likely explanation for what has occurred is that the

A. Output quantity has been stated in hexadecimal numbers.

B. Computer has malfunctioned during execution.

C. Printer has malfunctioned and the "R" should have been a decimal point.

D. Program did not contain a data checking routine for input data.

Answer (D) is **correct**.
The probable explanation for reporting a quantity using a character other than a digit is that the data were incorrectly encoded and the computer program did not perform a field check, which would have detected the error. A field check tests whether a field consists of the proper characters, whether alphabetic, numeric, special, or combinations thereof.

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12) The online data entry control called preformatting is

A. A program initiated prior to regular input to discover errors in data before entry so that the errors can be corrected.

B. A check to determine if all data items for a transaction have been entered by the person entering the data.

C. A series of requests for required input data that requires an acceptable response to each request before a subsequent request is made.

D. The display of a document with blanks for data items to be entered by the person entering the data.

Answer (D) is **correct**.
To avoid data entry errors in online systems, a preformatted screen approach may be used. It is a screen prompting approach that involves the display on a monitor of a set of boxes for entry of specified data items. The format may even be in the form of a copy of a transaction document. This technique is best suited to conversion of data from a source document.

13) Which one of the following input controls or edit checks would catch certain types of errors within the payment amount field of a transaction?

A. Record count.

B. Echo check.

C. Check digit.

D. Limit check.

Answer (D) is **correct**.
A limit, reasonableness, or range test determines whether an amount is within a predetermined limit for given information. It can only detect certain errors (i.e., those that exceed the acceptable limit).

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14) Which of the following should the auditor recommend as the most economical point at which to correct input errors in an online system?

A. Input data are balanced with computer-produced control totals.

B. Entry of data into each field of a record is completed.

Answer (B) is **correct**.
The most economical point at which to correct input errors is at the earliest time after the data has been entered into the system. The earliest point is the entry of data into each field of a record. Errors can easily be rectified because the proper information is already available.

C. Output data are balanced with computer-produced control totals and delivered to the user.

D. Entry of data into each record is completed.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

15) The most common computer-related problem confronting organizations is

A. Hardware malfunction.

B. Input errors and omissions.

Answer (B) is **correct**.
The most common problem confronting an organization in its use of computers is erroneous or incomplete input. Input is especially susceptible to errors and omissions because of the substantial human intervention required. Comprehensive and effective input controls are necessary to ensure that data stored in files or used in processing are not contaminated.

C. Disruption to computer processing caused by natural disasters.

D. Fraud.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

Fact Pattern: Batchelder Company has the following invoices in a batch:

Invoice Number	Product	Quantity	Unit Price
201	F10	150	$ 5.00
202	G15	200	10.00
203	H20	250	25.00
204	K35	300	30.00

16) Which of the following would Batchelder most likely use as a hash total?

A. FGHK80

B. 4

C. 204

D. 810

Answer (D) is **correct**.
Input controls in batch computer systems are used to determine that no data are lost or added to the batch. Depending on the sophistication of a particular system, control may be accomplished by using record counts, batch totals, or hash totals. The hash total is a control total without a defined meaning, such as the total of employee numbers or invoice numbers, that is used to verify the completeness of data. The hash total of the invoice numbers is 810.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

Fact Pattern: Batchelder Company has the following invoices in a batch:

Invoice Number	Product	Quantity	Unit Price
201	F10	150	$ 5.00
202	G15	200	10.00
203	H20	250	25.00
204	K35	300	30.00

17) Which of the following would Batchelder most likely use as a record count?

A. 1

B. 4

Answer (B) is **correct**.
Input controls in batch computer systems are used to determine that no data are lost or added to the batch. Depending on the sophistication of a particular system, control may be accomplished by using record counts, batch totals, or hash totals. A record count establishes the number of source documents and reconciles it to the number of output records. The total number of invoices processed is an example of a record count. In this case, the record count is 4.

C. 810

D. 900

TIME

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

18) In an order-entry system in which manually-prepared source documents are entered online for immediate processing, which of the following is an example of an appropriate input-output control?

A. Password authorization procedure.

B. Check-digit validation procedure.

Answer (B) is **correct**.
Self-checking digits may be used to detect incorrect identification numbers. The digit is generated by applying an algorithm to the ID number. During the input process, the check digit is recomputed by applying the same algorithm to the code actually entered.

C. Hash total verification.

D. Backup and recovery procedures.

19) A customer intended to order 100 units of product Z96014, but incorrectly ordered nonexistent product Z96015. Which of the following controls most likely would detect this error?

A. Check digit verification.

Answer (A) is **correct**.
Check digit verification is used to identify incorrect identification numbers. The digit is generated by applying an algorithm to the ID number. During input, the check digit is recomputed by applying the same algorithm to the entered ID number.

B. Record count.

C. Hash total.

D. Redundant data check.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

20) A validation check used to determine if a quantity ordered field contains only numbers is an example of a(n)

A. Input control.

Answer (A) is **correct**.
A validation check at data entry verifying that a quantity field contains only numbers is an example of a programmatic means of ensuring the accuracy of an input value. Thus, it is an input control.

B. Audit trail control.

C. Processing control.

D. Data security control.

Study Unit 3: Controls, Frameworks, Audits, and Business Continuity | Subunit 1: Common IT Systems Controls

21) An accounts payable program posted a payable to a vendor not included in the online vendor master file. A control that would prevent this error is a

A. Validity check.

Answer (A) is **correct**.
Validity checks are tests of identification numbers or transaction codes for validity by comparison with items already known to be correct or authorized. For example, Social Security numbers on payroll input records can be compared with Social Security numbers authorized by the personnel department.

B. Range check.

C. Reasonableness test.

D. Parity check.

22) An employee in the receiving department keyed in a shipment to the accounts payable system and inadvertently omitted the purchase order number. The best systems control to detect this error is

A. Completeness test.

Answer (A) is **correct**.
A completeness test checks that all data elements are entered before processing. An interactive system can be programmed to notify the user to enter the number before accepting the receiving report.

B. Sequence check.

C. Reasonableness test.

D. Compatibility test.

23) To avoid invalid data input, a bank added an extra number at the end of each account number and subjected the new number to an algorithm. This technique is known as

A. Sequence check.

B. A check digit.

Answer (B) is **correct**.
Self-checking digits may be used to detect incorrect identification numbers. A check digit is an extra reference number that follows an identification code and bears a mathematical relationship to the other digits. The extra digit is input with the data. The identification code can be subjected to an algorithm and compared to the check digit.

C. Cross-footing.

D. Field check.

24) What technique could be used to prevent the input of alphabetic characters into an all-numeric identification number?

A. A sequence check.

B. A check digit.

C. A record count.

D. A format check.

Answer (D) is **correct**.
With a format check, the computer checks the characteristics of the character content, length, or sign of the individual data fields. Field checks, sign checks, and range checks are examples of format checks.

25) Which of the following actions would best address a concern that data uploaded from a desktop computer may be erroneous?

A. The mainframe computer should be backed up on a regular basis.

B. Two persons should be present at the desktop computer when it is uploading data.

C. The mainframe computer should subject the data to the same edits and validation routines that online data entry would require.

Answer (C) is **correct**.
The same edits and validation routines used for online data entry should be applied to data uploaded from a desktop computer. This could help prevent data errors.

D. Users should be required to review a random sample of processed data.

26) Unauthorized alteration of online records can be prevented by employing

A. Key verification.

B. Computer sequence checks.

C. Computer matching.

D. Database access controls.

Answer (D) is **correct**.
Users can gain access to databases from terminals only through established recognition and authorization procedures; thus, unauthorized access is prevented.

27) Which of the following controls is a processing control designed to ensure the reliability and accuracy of data processing?

	Limit Test	Validity Check Test
A.	Yes	Yes

Answer (A) is **correct**.
Some processing controls repeat the steps performed during input, such as limit or range and validity checks. These tests include field checks, financial totals, hash totals, reasonableness, limit or range checks, record counts, check digits, sequence checks, sign checks, and validity checks.

B.	No	No
C.	No	Yes
D.	Yes	No

28) An employee mistakenly enters April 31 in the date field. Which of the following programmed edit checks offers the best solution for detecting this error?

A. Online prompting.

B. Mathematical accuracy.

C. Preformatted screen.

D. Reasonableness.

Answer (D) is **correct**.
Limit (or reasonableness) tests are edit checks that allow certain entries to be rejected by the system, based on known limits for given information. For example, in the date field, an entry for April 31 would be rejected if the month end limit for April was programmed to be April 30.

29) Which of the following is considered an application input control?

A. Run control total.

B. Field check.

Answer (B) is **correct**.
A field or format check is an application input control that prevents invalid characters from being accepted. Some data elements can only contain certain characters, and any transaction that attempts to use an invalid character is rejected.

C. Report distribution log.

D. Exception report.

30) Which of the following types of control plans is particular to a specific process or subsystem, rather than related to the timing of its occurrence?

A. Preventive.

B. Corrective.

C. Application.

Answer (C) is **correct**.
Application controls are built into each computer application. They are designed to ensure that only correct, authorized data enter the system, and that the data are processed properly.

D. Detective.