1. Which one of the following is a characteristic feature of an effective information system in terms of adaptability?
   A. The system requires manual updates for any minor changes.
   B. The system exclusively uses legacy technology to ensure stability.
   C. The system cannot be modified once it is implemented.
   D. The system easily adapts to changes in information requests and organizational structure.

2. Given:
   string s = "in string";
   The element s[2] is:
   A. the character 's'
   B. the space character ' '
   C. the character 'n'
   D. incorrect, individual access to string elements is not allowed

3. Which component of a computer-based information system includes the operating system, database management systems, and user application software?
   A. System software
   B. Scientific and mathematical ensemble
   C. Information base
   D. Human factor and organizational framework

4. The classification of computer-based information systems into Transaction Processing Systems, Management Information Systems, Decision Support Systems and Executive Support Systems is based primarily on their:
   A. Underlying mathematical models
   B. Technological platform
   C. Industry-specific application domain
   D. Role in the decision-making process

5. In the Oracle DBMS, provided that table X exists, and one has not defined unique or primary key constraints for it, using the following instruction:
   insert into X select * from X;
   A. one is able to query and insert into the same table at the same time
   B. one obtains an error message because it is possible to insert into but not to query the same table at the same time
   C. one obtains an error message due to the fact that the Oracle DBMS does not offer read consistency
   D. one obtains an error message because it is possible to query but not to insert into the same table at the same time

6. If n is an integer initialized with 15, then the statement:

```
if (0 <= n <= 10)
Console.WriteLine( "n between 0 and 10");
    else
Console.WriteLine( "n less than 0 or greater than 10");
```

   A. displays "n between 0 and 10"
   B. displays nothing
   C. is incorrect
   D. displays "n less than 0 or greater than 10"

7. Why is omitting column names in an INSERT statement considered risky in Oracle SQL*Plus?
   A. Nondestructive table changes, such as adding columns, may break the statement
   B. It prevents Oracle from evaluating defaults
   C. It forces all unspecified columns to zero
   D. It becomes invalid as soon as a WHERE clause is added

8. The hierarchical methods bring a series of advantages:
   A. simplicity, compliance to the user requirements definition
   B. allow the reuse of software components
   C. the systems focus on the database concept that provides more coherence, stability and eliminates the data redundancy
   D. the systems focus their effort on analyzing the processing functions

9. **In one-to-many relationship the table in "one" side is called _____ and on "many" side is called _____.**
   A. Parent, Child
   B. Child, Parent
   C. Brother, Sister
   D. Father, Son

10. In MS Access, the Like operator is commonly used to:
   A. compare values using wildcard characters
   B. compact the database file
   C. create a relationship between two tables
   D. change the data type of a field

11. The biggest limiting factor of modern CPU scaling is:
   A. RAM speed
   B. Cache size
   C. GPU speed
   D. Power and thermal density

12. Logical data independence refers to the ability of applications to remain logically unimpaired after:

A. all constraints are rewritten as triggers
B. information-preserving changes are made to base tables
C. nonrelational storage is introduced
D. all views are dropped

13. Given the sequence:

```
int n;
//read n
int s=n+1;
for (int i = 2; i < Math.Sqrt(n); i++)
 if (n % i == 0)
 s += i + n / i;
```

the variable s will contain the sum of divisors of n (the call Math.Sqrt(n) returns the square root of n):

A. for any natural number
B. for any perfect square
C. for any natural number that is not a perfect square
D. never

14. **The systems analyst role differs from the business analyst role because it focuses more directly on:**

A. Personnel appraisal policies
B. Taxation rules
C. Supplier relationship management
D. Information-system issues, system design, and standards

15. Which field type will you select if you need to enter long text in that field?

A. Hyperlink
B. Memo
C. Text
D. Currency

16. Given the sequence:

```
int a=5, b;
b=a++;
```

the variables a and b will be:

A. 6 and 5
B. 6 and 6
C. 5 and 5
D. 5 and 6

17. In SQL*PLUS, within a LIKE pattern, which wildcard symbol represents by default exactly one arbitrary character?

A. #
B. *
● C. _
D. %

18. A computer-based information system for a commercial smart-greenhouse uses sensors to measure the moisture level of the soil. These physical measurements are sent as impulses to a control computer. When the soil becomes too dry, the computer-based information system automatically turns on the irrigation pumps to water the crops. This setup is an example of:

A. Computer-based information systems for managing research-design activities
B. Computer-based information systems for population records
C. Computer-based information systems for office activity
● D. Computer-based information systems for managing technological processes

19. Among the stipulated requirements of an information system, adaptability to changes explicitly denotes the system's capacity to:

A. Maintain statutory conformity even when regulations are repealed
B. Replicate legacy data formats without modification
● C. Accommodate evolving information demands, input structures and organizational redesign with minimal disruption
D. Prevent any alteration of processing methods after deployment

20. Given the sequence:

```
while (n > 0)
{
 Console.Write(n % 2);
 n /= 2;
}
```

If n is an integer with the value of 10, then the sequence above displays:

● A. 0101
B. 1
C. 101
D. 0

21. Which of the following protocols is related to the transport layer of OSI model:

A. FTP
B. IP
C. CSMA / CD
● D. TCP

22. In SQL*PLUS, if the table *Sales* has been previously created and the column *CustName* has not been defined within the structure of the table *Sales*, the following sequence of instructions:
ALTER TABLE Sales ADD (CustName VARCHAR2(15));
   A. adds a new tuple at the beginning of the table
   B. adds a new field to the table
   C. adds a new tuple in the table at the end of the table
   D. adds a new tuple in the table after the current record

23. The economic efficiency of the computer-based information systems is generally measured using the ratio between:
   A. the expected effects and the involved expenses
   B. the obtained effects and the involved expenses
   C. the expected effects and the expected expenses
   D. the obtained effects and the expected expenses

24. BIOS runs when:
   A. OS loads
   B. GPU initializes
   C. App starts
   D. System boots

25. What is a key advantage of NVMe SSDs over SATA SSDs?
   A. Larger physical size
   B. Faster data transfer via PCIe
   C. Lower cost
   D. Higher latency

26. In the context of computer-based information systems design, understanding how much quality improvement is obtained at a certain cost is useful mainly because it supports:
   A. Management decisions about process improvement
   B. Replacement of users by automation
   C. Elimination of all documentation
   D. Purely aesthetic design choices

27. GPU is optimized for:
   A. Parallel processing
   B. Storage
   C. BIOS execution
   D. Sequential tasks

28. Inheritance in C# is declared with:

- A. :
- B. override
- C. public
- D. none

29. Regarding datatype synonyms in Oracle SQL*PLUS, which statement provides the most accurate description of the CHARACTER synonym?

- A. It maps directly to VARCHAR2 and dynamically allocates memory based on the string length.
- B. It is synonymous with NCHAR and is specifically reserved for multibyte Unicode characters.
- C. It maps directly to CHAR and enforces a fixed length by blank-padding shorter strings.
- D. It is an alias for CLOB used exclusively when dealing with character data exceeding 4,000 bytes.

30. In Oracle SQL*PLUS, which function would you use to return the current database server date?

- A. NOW_TIME_DATE
- B. GETDATE_CURRENT
- C. SYSDATE
- D. CURRENT_DATE

31. In the context of computer-based information systems, a steering committee chooses between two process-improvement proposals only after reviewing defect trends, throughput reports, customer feedback metrics, and statistical analysis rather than relying on rank or intuition. This follows the principle that decisions are more likely to succeed when based on:

- A. Analysis and evaluation of data and information
- B. Strict adherence to hierarchy
- C. Authority alone
- D. Intuition alone

32. In Oracle SQL*PLUS, what does ON DELETE SET NULL do in a master/detail relationship?

- A. It disables the foreign key before deletion
- B. It deletes every child row automatically
- C. It updates child rows by setting the foreign key columns to NULL, if NULL is allowed
- D. It converts the parent key into a unique key

33. The most commonly used Google IP addresses are?
    A. 8.8.8.1
    B. 255.255.255.0
    C. 1.1.1.1
    D. 8.8.8.8

34. The output voltages of a computer supply are:
    A. 12V, 5V
    B. 12V, 15V, 20V
    C. 12V, 3.3V, 5V
    D. 12V, 9V, 5V

35. In C#, String:
    A. is not a data type
    B. is a value type
    C. is a reference type
    D. is both a value and reference type

36. The requirement of promptness of briefing for an information system refers primarily to:
    A. Ensuring that necessary information is delivered within pre-established time limits
    B. Guaranteeing that every level of management receives identical data sets
    C. Designing user interfaces with response times below one second
    D. Validating data accuracy through triple-entry accounting techniques

37. In SQL*PLUS, in the CREATE TABLE command, a column definition cannot include:
    A. a NULL clause
    B. the table name
    C. the column name
    D. a DEFAULT clause

38. The system's outputs in an economic unit are represented by:
    A. the products and services that are being sold
    B. the necessary material, financial and human resources
    C. the production of products or provisioning of services in order to make a profit
    D. the processes that occur within a company

39. Given:
int a=7; float c;
c = a / 2 * 2;
The value of c is:
   A. 7
   B. 0
   C. 1
   D. 6

40. Which MS Access object is mainly used to automate repetitive tasks without writing full VBA code?
   A. Table
   B. Macro
   C. Relationship
   D. Index

41. Statistical information, such as totals and averages, can be calculated in a query by using
a(n) ____.
   A. comparison operator
   B. condition
   C. expression
   D. aggregate function

42. What role does a requirements analyst primarily play in systems development?
   A. Eliciting and clarifying the requirements from stakeholders
   B. Managing the computer-based information systems' infrastructure requirements
   C. Directly programming new software applications based on the requirements
   D. Overseeing change management processes based on the requirements

43. **In Access, ____ are used to store the data.**
   A. Forms
   B. Queries
   C. Tables
   D. Reports

44. Given the function:
```
static int sum (int a, int b=0, int c=0, int d=0)  {
     return a+b+c+d;
}
```
The call sum(3,5,1) is:
   A. incorrect, when calling the function it must receive 4 actual parameters
   B. incorrect, all parameters must have default values
   C. incorrect, parameters with default values must be at the end of the parameter list
   D. correct and returns the value 9

45. **In an Oracle database, a NULL value is described most accurately as:**

A. a blank padded to column length

B. a synonym for the number zero

C. a guaranteed empty string

D. an indicator of missing information rather than an actual value