1. In Oracle SQL*PLUS, what does ON DELETE SET NULL do in a master/detail relationship?
   - A. It deletes every child row automatically
   - B. It updates child rows by setting the foreign key columns to NULL, if NULL is allowed
   - C. It converts the parent key into a unique key
   - D. It disables the foreign key before deletion

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

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

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

5. 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. Replacement of users by automation
   - B. Elimination of all documentation
   - C. Purely aesthetic design choices
   - D. Management decisions about process improvement

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

7. Which field type will you select if you need to enter long text in that field?
   A. Currency
   B. Text
   C. Memo
   D. Hyperlink
8. GPU is optimized for:
   A. Sequential tasks
   B. BIOS execution
   C. Parallel processing
   D. Storage
9. 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
10. **In an Oracle database, a NULL value is described most accurately as:**
   A. a blank padded to column length
   B. an indicator of missing information rather than an actual value
   C. a guaranteed empty string
   D. a synonym for the number zero
11. **The systems analyst role differs from the business analyst role because it focuses more directly on:**
   A. Information-system issues, system design, and standards
   B. Personnel appraisal policies
   C. Supplier relationship management
   D. Taxation rules
12. In MS Access, the Like operator is commonly used to:
   A. change the data type of a field
   B. compact the database file
   C. create a relationship between two tables
   D. compare values using wildcard characters

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

14. **In Access, ____ are used to store the data.**

- A. Forms
- B. Queries
- C. Tables
- D. Reports

15. **In one-to-many relationship the table in "one" side is called _____ and on "many" side is called _____.**

- A. Child, Parent
- B. Brother, Sister
- C. Parent, Child
- D. Father, Son

16. Which one of the following is a characteristic feature of an effective information system in terms of adaptability?

- A. The system cannot be modified once it is implemented.
- B. The system easily adapts to changes in information requests and organizational structure.
- C. The system exclusively uses legacy technology to ensure stability.
- D. The system requires manual updates for any minor changes.

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

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

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

20. 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 in the table after the current record
    B. adds a new tuple in the table at the end of the table
    C. adds a new tuple at the beginning of the table
    D. adds a new field to the table

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

22. Inheritance in C# is declared with:
    A. none
    B. override
    C. :
    D. public

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

24. Given:

string s = "in string";

The element s[2] is:

A. incorrect, individual access to string elements is not allowed
B. the character 's'
C. the space character ' '
D. the character 'n'

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

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

26. 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

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

A. FTP
B. IP
C. CSMA / CD
D. TCP

28. 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. correct and returns the value 9
C. incorrect, parameters with default values must be at the end of the parameter list
D. incorrect, all parameters must have default values

29. 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. 101
B. 0
C. 0101
D. 1

30. 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 "n less than 0 or greater than 10"
C. displays nothing
D. is incorrect

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

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

32. 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 becomes invalid as soon as a WHERE clause is added
C. It forces all unspecified columns to zero
D. It prevents Oracle from evaluating defaults

33. In SQL*PLUS, in the CREATE TABLE command, a column definition cannot include:

A. the column name
B. the table name
C. a NULL clause
D. a DEFAULT clause

34. 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 maps directly to CHAR and enforces a fixed length by blank-padding shorter strings.

C. It is an alias for CLOB used exclusively when dealing with character data exceeding 4,000 bytes.

D. It is synonymous with NCHAR and is specifically reserved for multibyte Unicode characters.

35. What role does a requirements analyst primarily play in systems development?

A. Overseeing change management processes based on the requirements

B. Directly programming new software applications based on the requirements

C. Managing the computer-based information systems' infrastructure requirements

● D. Eliciting and clarifying the requirements from stakeholders

36. 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. Authority alone

B. Intuition alone

● C. Analysis and evaluation of data and information

D. Strict adherence to hierarchy

37. BIOS runs when:

A. OS loads

B. GPU initializes

● C. System boots

D. App starts

38. The output voltages of a computer supply are:

● A. 12V, 3.3V, 5V

B. 12V, 5V

C. 12V, 9V, 5V

D. 12V, 15V, 20V

39. The system’s outputs in an economic unit are represented by:

A. the processes that occur within a company

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 products and services that are being sold

40. Which component of a computer-based information system includes the operating system, database management systems, and user application software?

A. Information base
B. Scientific and mathematical ensemble
C. Human factor and organizational framework
D. System software

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

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

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

A. _
B. #
C. *
D. %

43. Statistical information, such as totals and averages, can be calculated in a query by using
a(n) ____.

A. condition
B. comparison operator
C. expression
D. aggregate function

44. 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 obtains an error message due to the fact that the Oracle DBMS does not offer read consistency
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 because it is possible to query but not to insert into the same table at the same time
D. one is able to query and insert into the same table at the same time

45. The requirement of promptness of briefing for an information system refers primarily to:

A. Designing user interfaces with response times below one second

B. Ensuring that necessary information is delivered within pre-established time limits

C. Guaranteeing that every level of management receives identical data sets

D. Validating data accuracy through triple-entry accounting techniques