1. 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. 0
- D. 101

2. 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 obtained effects and the expected expenses
   - D. the expected effects and the expected expenses
3. The system's outputs in an economic unit are represented by:
   - A. the necessary material, financial and human resources
   - B. the processes that occur within a company
   - C. the products and services that are being sold
   - D. the production of products or provisioning of services in order to make a profit
4. Inheritance in C# is declared with:
   - A. public
   - B. override
   - C. none
   - D. :
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 because it is possible to query but not to insert into the same table at the same time
   - D. one obtains an error message due to the fact that the Oracle DBMS does not offer read consistency

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

7. Given the sequence:

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

the variables a and b will be:

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

8. 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. Eliciting and clarifying the requirements from stakeholders
D. Managing the computer-based information systems' infrastructure requirements

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

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

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

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

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

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

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

15. 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, all parameters must have default values
    B. incorrect, parameters with default values must be at the end of the parameter list
    C. correct and returns the value 9
    D. incorrect, when calling the function it must receive 4 actual parameters

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

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

17. 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. Industry-specific application domain
    B. Role in the decision-making process
    C. Underlying mathematical models
    D. Technological platform

18. What is a key advantage of NVMe SSDs over SATA SSDs?

    A. Lower cost
    B. Higher latency
    C. Larger physical size
    D. Faster data transfer via PCIe

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

20. 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

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

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

22. In C#, String:

A. is both a value and reference type

B. is a value type

● C. is a reference type

D. is not a data type

23. Given:
int a=7; float c;
c = a / 2 * 2;
The value of c is:

● A. 6

B. 7

C. 0

D. 1

24. 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. simplicity, compliance to the user requirements definition

C. the systems focus their effort on analyzing the processing functions

D. allow the reuse of software components

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

● A. an indicator of missing information rather than an actual value

B. a blank padded to column length

C. a synonym for the number zero

D. a guaranteed empty string

26. 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 tuple in the table at the end of the table

C. adds a new tuple in the table after the current record

● D. adds a new field to the table

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

● A. aggregate function

B. comparison operator

C. condition

D. expression

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

- [x] A. _
- [ ] B. #
- [ ] C. %
- [ ] D. *

29. 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. Prevent any alteration of processing methods after deployment
- [x] C. Accommodate evolving information demands, input structures and organizational redesign with minimal disruption
- [ ] D. Replicate legacy data formats without modification

30. 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 disables the foreign key before deletion
- [x] 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

31. 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
- [x] B. Management decisions about process improvement
- [ ] C. Purely aesthetic design choices
- [ ] D. Elimination of all documentation

32. The biggest limiting factor of modern CPU scaling is:

- [ ] A. RAM speed
- [x] B. Power and thermal density
- [ ] C. Cache size
- [ ] D. GPU speed

33. 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.
- [x] B. The system easily adapts to changes in information requests and organizational structure.
- [ ] C. The system cannot be modified once it is implemented.
- [ ] D. The system exclusively uses legacy technology to ensure stability.

34. BIOS runs when:

- A. System boots
- B. OS loads
- C. App starts
- D. GPU initializes

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

- A. Guaranteeing that every level of management receives identical data sets
- B. Ensuring that necessary information is delivered within pre-established time limits
- C. Validating data accuracy through triple-entry accounting techniques
- D. Designing user interfaces with response times below one second

36. Why is omitting column names in an INSERT statement considered risky in Oracle SQL*Plus?

- A. It forces all unspecified columns to zero
- B. It becomes invalid as soon as a WHERE clause is added
- C. It prevents Oracle from evaluating defaults
- D. Nondestructive table changes, such as adding columns, may break the statement

37. 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"

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

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

39. Given:

string s = "in string";

The element s[2] is:

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

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

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

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

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

D. It maps directly to VARCHAR2 and dynamically allocates memory based on the string length.

41. GPU is optimized for:

A. BIOS execution

● B. Parallel processing

C. Storage

D. Sequential tasks

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

A. Taxation rules

B. Personnel appraisal policies

● C. Information-system issues, system design, and standards

D. Supplier relationship management

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

● A. the table name

B. a NULL clause

C. a DEFAULT clause

D. the column name

44. The most commonly used Google IP addresses are?

A. 255.255.255.0

B. 8.8.8.1

● C. 8.8.8.8

D. 1.1.1.1

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

A. Scientific and mathematical ensemble

B. Information base

● C. System software

D. Human factor and organizational framework