Final Test

Course: IS-241 COMPUTER CONCEPT AND APPLICATIONS
Version: A
Time: 60 minutes (Closed book examination)

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1. In a relational database, the main purpose of a primary key is to:

A. Store multiple values in one field
B. Improve the visual layout of tables
C. Uniquely identify each record in a table
D. Define relationships between different databases

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2. A CPU features a 32-bit address bus. If each memory location stores 1 byte, what is the maximum addressable RAM?

A. 2 GB
B. 4 GB
C. 8 GB
D. 16 GB

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3. Which Access object is primarily used to retrieve, filter, and analyze data from one or more tables?

A. Form
B. Query
C. Report
D. Table

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4. Which statement best describes Microsoft Access?

A. A spreadsheet tool mainly used for numerical calculations
B. A relational database tool designed for structured data
C. A programming language for database development
D. A cloud-based database system only

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5. Which of the following is considered primary storage used for immediate data access by the CPU?

A. Solid State Drive (SSD)
B. RAM
C. Magnetic Tape
D. DVD-ROM

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6. A collection of local computers linked together within a single office building is a:

A. WAN
B. MAN
C. LAN
D. VPN

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7. Why is Microsoft Access preferred over Excel for managing related data?

A. Excel supports SQL queries better
B. Access allows storing unlimited rows without relationships
C. Access supports relationships between tables and structured data
D. Excel cannot import CSV files

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8. In the HDF5 patient database design shown in the lecture, the mobile number is used as:

A. A dataset attribute
B. A file name
C. A group name acting as a primary key
D. A metadata description

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9. Which type of memory retains its content even when the power is turned off?

A. RAM
B. Cache

C. ROM
D. Registers

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10. Which of the following is a primary function of an Operating System?

A. Designing graphics for websites
B. Managing the computer's CPU and memory cycles
C. Manufacturing hardware chips
D. Performing complex mathematical modeling only

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11. Given two 8-bit signed integers: A = +30 and B = +15. What is A - B?

A. +15
B. +45
C. -15
D. -45

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12. Binary number 101010 equals which decimal value?

A. 40
B. 42
C. 44
D. 46

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13. Given an 8-bit unsigned integer A = 10101010, what is the result of the bitwise NOT(A)?

A. 01010101
B. 11110000
C. 00001111
D. 10101011

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14. Convert the binary number 10110011 to hexadecimal:

A. B3
B. A3

C. C3
D. D3

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15. If $(A1)_{16} = (X)_{10}$, the value of X is:

A. 160
B. 161
C. 151
D. 171

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16. What is the binary equivalent of the hexadecimal number $(C4)_{16}$?

A. 11000100
B. 10100100
C. 11110100
D. 11001100

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17. The decimal equivalent of binary 11000111 is:

A. 197
B. 199
C. 201
D. 191

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18. Which application is best suited for managing budgets and performing financial "what-if" analysis?

A. Database Management System
B. Spreadsheet
C. Presentation Software
D. Desktop Publishing

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19. In a database table, a single column representing a specific category of data is called a:

A. Record
B. Field
C. Row
D. File

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20. Which of the following is NOT an example of system software?

A. Windows 11
B. Linux Kernel
C. Adobe Photoshop
D. Device Drivers

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21. How do I/O devices typically interact with the CPU?

A. They connect directly to the registers
B. Through I/O interfaces or controllers
C. They do not interact with the CPU
D. Via the power supply unit

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22. Software that is copyrighted but provided free of charge for an unlimited time is:

A. Open-source
B. Freeware
C. Commercial
D. Shareware

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23. An Operating System that can handle multiple tasks from different users simultaneously is a:

A. Single-tasking OS
B. Multi-user, multitasking OS
C. Real-time OS
D. Batch OS

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24. Arrange these values in descending order:

$X = (1100)_2$, $Y = (15)_{10}$, $Z = (C)_{16}$

A. Y, X, Z

B. Y, Z, X

C. X, Y, Z

D. Z, Y, X

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25. A program that translates the entire high-level source code into machine code before execution is a:

A. Interpreter

B. Compiler

C. Linker

D. Debugger