Ph.D (Computing) Sample Test Paper

The Entrance Test will comprise of on-line multiple-choice questions (MCQs). You will select one answer from the four choices given. 10 questions will be asked from each of the following areas. Total time duration is 90 minutes.

1. Technical Communication
2. General Programming
3. Computer Architecture and Organizations
4. Operating Systems and Networking
5. Software Engineering
6. Database Concepts
7. Mathematics and Statistics

SECTION I - TECHNICAL COMMUNICATION

1. Which of the following is the most effective way to encourage ethical behavior in your organization.
   a. Clearly laying out expected behavior in a written policy or code of ethics
   b. Making sure top management set clear examples of ethical behavior
   c. Punishing those who act unethically
   d. None of the above

SECTION II - GENERAL PROGRAMMING

1. When reading one character at a time, which of the following is appropriate:
   a. fread()
   b. read()
   c. getc()
   d. None of the above
SECTION III - COMPUTER ARCHITECTURE AND ORGANIZATION

1. Which of the following is the most improving way of Cache Performance:
   a. Reduce the miss rate,
   b. Reduce the miss penalty
   c. Reduce the time to hit in the cache
   d. None of the above

SECTION IV - OPERATING SYSTEMS AND NETWORKS

1. Which of the following can enormously extend the computer ability's to process a greater number of large tasks at the same time:
   a. Time sharing
   b. Interrupts
   c. Virtual memory
   d. None of the above

SECTION V - SOFTWARE ENGINEERING

1. What are the advantages of using formal specifications in software engineering work?
   a. Specification need complete information with graphical notation.
   b. Formal specifications are generally more complete.
   c. Formal specifications are generally complete, consistent, and likely to be unambiguous than comparable specifications using natural language.
   d. None of the above

SECTION VI - DATABASE CONCEPTS

1. The portion of a DBMS that helps you manage the overall database environment is the:
   a. DBMS engine.
   b. Data definition subsystem.
   c. Data administration subsystem.
SECTION VII - MATHEMATICS AND STATISTICS

1. A label identifier for a computer program consists of one letter followed by three digits. If repetitions are allowed, how many distinct label identifiers are possible:
   a. 26,200
   b. 36,200
   c. 38,000
   d. None of the above

2. Let $A = \mathbb{Z}$ and let $B = \{0, 1\}$. Let $f : A \to B$ be defined by
   
   $$F(a) = \begin{cases} 
   0 & \text{if } a \text{ is even} \\
   1 & \text{if } a \text{ is odd}
   \end{cases}$$
   
   Which of the following is true:
   a. $f(a)$ is not a function
   b. $f(a)$ is onto function
   c. $f(a)$ is into function
   d. None of the above