DAIICT, Gandhinagar
Msc-IT Entrance Test - 2008

The test will evaluate the candidates on their mathematical aptitude, logical reasoning, basic programming, English and general awareness of Information technology.

Approximate distribution of weightage would be, as given below-

| | |
|---|---|
| Mathematics | 20% |
| Logical Reasoning | 30% |
| Basic Programming | 15% |
| IT Awareness | 15% |
| English | 20% |

Duration: 1 hour
Pattern: Objective type

## Syllabus

*Mathematics*

10+2 level Mathematics.

Permutations and combinations.

Set theory - Operation on sets, ordered pairs, relations, functions, induction

Algebra and Matrices - Fundamental operations in Algebra, Expansion, factorization, simultaneous linear / quadratic equations, indices, logarithms, arithmetic, geometric and harmonic progressions, binomial theorem, permutations and combinations, surds, determinants, matrices and application to solution of simultaneous linear equations.

Calculus and analytic geometry - Calculus: Limit of functions, continuous functions, differentiation of functions(s),Tangents and normal, simple examples of maxima and minima, Integration of function by parts, by substitution and by partial fraction, definite integral application to volumes and surfaces of frustums of a sphere, cone, cylinder, Taylor Series

Trigonometry - Simple identities, trigonometric equations, properties of triangles, solution of triangles, height and distance, inverse function

*Logical Reasoning:*
Test for general analytical and reasoning abilities.

*Basic Programming:*
Basics of programming and C.

*Information Technology:*
General awareness of Information Technology - Computers, Software, and Internet.

*English:*
General English and Grammar.

## Sample question paper

1. The relation $R = \{(x, y) \mid x^2 + y^2 = 1\}$ is a function when

   (a) $-1 \leq x \leq 1, -1 \leq y \leq 1\}$
   (b) $-1 \leq x \leq 1, -1/2 \leq y \leq 1\}$
   (c) $-1 \leq x \leq 0, -1 \leq y \leq 1\}$
   (d) $0 \leq x \leq 1, 0 \leq y \leq 1\}$

2. The relation between $2^{A \cup B}$ and $2^A \cup 2^B$ is

   (a) $2^{A \cup B} \subseteq 2^A \cup 2^B$
   (b) $2^A \cup 2^B \subseteq 2^{A \cup B}$
   (c) $2^{A \cup B} = 2^A \cup 2^B$
   (d) none

3. The cost of a diamond varies directly as the square of its weight. If

4. If n is any odd number greater than 1, then n (n * n - 1) is

   a. divisible by 48 always
   b. divisible by 24 always
   c. divisible by 60 always
   d. None of these

5. The average weight of three men A, B, and C is 84 kg. Another man D joins the group and the average now becomes 80 kg. If another man E, whose weight is 3 kg more than D, replaces A then average weight of B, C, D, and E becomes 78 kg. The weight of A is-

   a. 70 kg
   b. 72 kg
   c. 79 kg
   d. 78 kg

6 FOOD is to HUNGER as SLEEP is to _____ ?

   a. Rest
   b. Night
   c. Dream
   d. Weariness

7. Which of the following is an example of nonvolatile memory?

   a. ROM
   b. RAM
   c. LSI
   d. VLSI

8. Which programming language was used for writing the popular operating system UNIX?

   a. C++
   b. SNOBOL
   c. PASCAL
   d. C

9 How long does this loop run: **`for(int x=0; x=3; x++)`**

a. Never
b. Three Times
c. Four Times
d. Forever

10. Considering following program code, which one of option is correct-

```
main()
{
    char *p = "hello world";
    p[0] = 'H';
    printf("%s", p);
}
```

a. Has Runtime error.
b. Would output "Hello world"
c. Has Compile error
d. Would Output "hello world"

11. I am _____to the dentist after my class this afternoon

a. gone
b. goes
c. going
d. go

12. The _____in his office is expensive and luxurious

a. furniture
b. furniture
c. furnitures
d. furniturs