Nepal College of Information Technology

**Unit Test**

Fall 2012

Program : BE CE Time : 2 hrs

Semester : (III) FM : 70

Subject : Engineering Math-III PM : 35

* *Candidates are requested to give their answer as far as practicable in their own words.*
* *The figure in the margin indicates the full marks*
* ***Attempt ALL question***

1 Define transpose of a matrix. In what condition matrix multiplication of two matrices exists. Show that . 6

2. Show that = 2abc, by using the properties of determinants. 8

3 Define inverse of a matrix. Write down the necessary condition for existence of inverse of a matrix. Find inverse of A = , if it exists. 8

4 Define rank of a matrix. Find rank of the matrix A = . 5

5. Find the Fourier series of  7

6. Find the Fourier series of periodic function f(x) of period p=2<

 7

7 If A + B = and A – B = , Find AB, where A and B are matrices. 2

8 Show that the diagonal elements on the skew symmetric matrices are zero. 2

9. Find the smallest period of sinπx 2

10 Check even chord or neither even nor odd 2