MODEL PAPER II 2016
BCA PART-I
Subject: Basic Maths

Time: 3:00 hrs   **M.M. 100**

[I] Very Short type: **[2*10=20]**
Q.1 What is Inverse function?
Q.2 Define bijective function.
Q.3 What is upper triangular matrix.
Q.4 Define order of a matrix.
Q.5 When roots of quadratic equation be equal?
Q.6 Define locus.
Q.7 Write merits of Mode.
Q.8 What are measure of dispersions.
Q.9 How many 3 digit numbers can be formed without using the digits 0, 2, 3, 4, 5 and 6.

Q.10 What is the probability of getting at least 1 six in two throws of a dice ?

[II] Short type: **[4*5=20]**
Q.1 A function f is from R to R as $f(x)=3x^4+6$. find its type.
Q.2 Proof that matrix multiplication is associative
Q.3 The sum and product of roots of equation $ax^2 - 5x = -c$ are equal to 2^3+2.
    Find a and c.
Q.4 Explain types of correlation.
Q.5 A team consists of 6 boys and 4 girls and the other has 5 boys and 3 girls. How many single matches can be arranged betw een two teams if a boy plays against a boy and a girl plays against a girl ?

[III] Long Type: **[12*5=60]**
Q.1 Explain exponential function & inverse trigonometric functions with their graphs.
Q.2 Solve by using matrix inverse method:
        3a+3b+c=10
        4a+b+2c=15
        3a+2b+c=15
Q.3 If a and b are roots of quadratic equation $2x^2 =3x+6$ then find the quadratic equation whose roots are $a^2 +2$ and $b^2 +2$.

Q.4 Find standard deviation for the series:

(a)

x	3	6	6	8	9	12
f	4	2	1	4	2	3

(b)

weight	0-10	10-20	20-30	30-40	40-50	50-60
persons	4	4	6	3	5	4

Q.5 Explain Bayes theorem and multiplicative law for probability.