**Balochistan Board of Intermediate and Secondary Education, Quetta.**

Model Paper for HSSC Examination 2017 and Onwards

Subject: Math Total Marks = 100 Class 1st Year

**SECTION – I**

**Note: Q No. 1 is compulsory.**

**Q No.1:- Choose the correct answer Marks=20**

1. If Z is a complex number then Z= \_\_\_\_\_\_\_\_\_\_\_\_\_

(Z2,|Z| , none of these)

1. Real Part of the Complex number is

( , , -5, none of these)

1. If is a singular matrix then value of k is

(2, 4, 6, none of these)

1. If A and B are two matrices confirmable for multiplication then

 (AB)-1 = \_\_\_\_\_\_\_\_\_\_\_ (A-1B-1, B-1A-1, AB, none of these)

1. If two vectors and are orthogonal then

 (.=0,x=0, .=x, none of these)

1. Magnitude of the vector 2++3 is

 ( ,, , None of these)

1. Arithmetic mean between , is

 (1, 2, , None of these)

1. Common ratio of the geometric sequence

- , , , ----- is ( , - , -, none of these)

 n

1. = \_\_\_\_\_\_\_\_(1, k, n , none of these)

K=1

1. 6p=\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(1, 6!,0, none of these)

 6

1. If nC4= nC5 then value of n is

 (4, 5, 9, none of these)

1. Number of terms in the expansion of

(x+2y)**||** is (11, 12, 13, none of these)

1. If f(x)= then f(x) is not defined at x=\_\_\_\_\_\_(1,2, , none of these)
2. A function which is to be maximized or minimized is called

(onto function, bijective function, objective function, none of these)

1. )= \_\_\_\_\_\_\_\_\_\_\_()
2. Sin2θ=\_\_\_\_\_\_\_(2sinθ,1-2sin2θ,2sinθcosθ,none of these)
3. == is known as

(Law of sines, law of cosines, law of tangents, none of these)

1. If f(-x) = -f(x) then f(x) is called

(Even function, odd function, constant function, none of these)

1. Period of cotx is (Π, , , none of these)
2. Domain of inverse cosine function is

([0, Π], [-1,1], [0,1], none of these)

**SECTION II**

**Q no.2: Attempt any ten parts: Marks=40**

1. Find multiplicative inverse of 1+i
2. Find value of x if the matrix

 is singular

1. Find unit vector in the direction of

=2+3

1. Find the cross product of vectors

=+2+ , =3++2

 v.Find nth term of the

 H.P, ,, ……..:

vi. Write in factorial

 vii. Find value of n if

 8p=8.7.6

 n

 viii. Find inverse function of

 f(x) =2x+1

 ix. Determine the domain and range of

 f(x)=x2-1

 x. Solve and draw the graph of

 2x+5>x-3

xi. Show that Sin (180o-θ) =sinθ

xii. Prove that =tanα

 xiii. Solve the triangle with

 r=90o, a=5, b=13

xiv. Expand (x+2y)5

 xv. Find the area of triangle

 ∆ABC where a=40, b=30, c=20

xvi. Find the period of tan

**SECTION III**

**Attempt Any Five Questions. Marks=40**

**Q NO.3: Factorize the polynomial**

Z3+3Z2+4Z+2

**Q NO.4: Find the inverse of matrix**

**Q NO.5: Insert five G.Ms between 16 and 1024.**

**Q NO.6: Sum the series upto n term:**

 32+62+92+------------.

**Q NO.7: Prove by mathematical induction the following formula is true for all +ve integral values of n**.

 1+3+9+--------+3n-1=

**Q NO.8: Find r1+r2 and r3 if sides of ∆ABC are,**

 a=13, b=14, c=18

**Q NO.9: Prove that**

2 tan-1() + tan-1() = .