INDIAN SCHOOL DARSAIT
DEPARTMENT OF MATHEMATICS

Subject : MATHEMATICS Topic : POLYNOMIALS Date of Worksheet : 04/04/2018

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Name of the Student _____ Class &Division:_____ Roll Number : ___

S.No.	Section A-[Basic skills]
1.	Find the value of x , if (x + 3) = -5(x – 2)
2.	$30 + \frac{3-15}{7} =$
3.	33327 ÷161 =
4.	456 x 34.6 =
5.	2345.6 - 306.87 =

Sl.No.	Section B-[CHAPTER BASED QUESTIONS]	Marks
1.	If one zero of the polynomial $f(x) = (k^2 + 4)x^2 + 13x + 4k$ is reciprocal of the other , then find the value of k	1
2.	If the product of zeros of the polynomial $f(x) = ax^3 – 6x^2 + 11x – 6$ is 4, then find a	1
3.	If x+a is a factor of $2x^2 + 2ax + 5x + 10$,find a	2
4.	Find the zeros of the polynomial $4\sqrt{3}x^2 + 5x - 2\sqrt{3}$, and verify the relationship between the zeros and co-efficients.	3
5.	What must be added to the polynomial $9x^4 - 4x^2+4$ so that the resulting polynomial is exactly divisible by $3x^2 + x - 1$?	3
6.	What must be subtracted from the polynomial $6x^3 +11x^2 - 39x-65$ so that the resulting polynomial is exactly divisible by $x^2 + x - 1$?	3
7.	It is given that 1 is one of the zeros of the polynomial $f(x)= 7x - x^3 - 6$.Find the other zeros.	3
8.	Divide $(x^3 + 3x^2 - 5x + 4)$ by (x-2) and verify Division Algorithm.	4

9.	If the zeros of the polynomial $x^3 + 3x^2 + x + 1$ are a-b, a and a+b , find the values of a and b.	4
10.	Use remainder theorem to find the value of k, it being given that when $x^3 + 2x^2 + k\,x + 3$ is divided by (x-3), then the remainder is 21.	4
11.	If α and β are the zeros of the polynomial $f(x) = x^2 + x + 1$, then find i) $\frac{1}{\alpha} + \frac{1}{\beta}$ ii) $\alpha^2 + \beta^2$ iii) $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$ iv) $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$	4
12.	Obtain all the zeros of $x^4 + 4x^3 - 2x^2 - 20\,x - 15$,if two of its zeros are $\sqrt{5}$ and $-\sqrt{5}$.	4
	HOT QUESTIONS	
1.	If α and β are the zeros of the polynomial $f(x) = ax^2 + bx + c$, then find i) $\alpha^3 + \beta^3$ ii) $\frac{\alpha^2}{\beta} + \frac{\beta^2}{\alpha}$ iii) $1 + \frac{1}{\alpha} + \frac{1}{\beta}$	4
2.	If sum of the squares of zeros of the quadratic polynomial $f(x) = x^2 - 8x + k$ is 40 , find the value of k.	3
3.	If the polynomial $6x^4 + 8x^3 + 17x^2 + 21x + 7$ is divided by another polynomial $3x^2 + 4x + 1$, the remainder comes out to be ax + b , find a and b.	4
4.	If the polynomial $f(x) = x^4 - 6x^3 + 16x^2 - 25x + 10$ is divided by another polynomial $x^2 - 2x + k$, the remainder comes out to be x + a , find k and a	4
5.	If α and β are the zeros of the polynomial $f(x) = x^2 - 5x + k$, such that $\alpha - \beta = 1$, find the value of k.	3
6.	If α and β are the zeros of the polynomial $f(x) = x^2 - x - 2$, then find a polynomial whose zeros are $2\alpha + 1$ and $2\beta + 1$.	3
7.	If $f(x) = x^3 + x^2 - ax + b$ is divisible by $x^2 - x$, find the values of a and b.	3