4	BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA	
	ASSIGNMENT OF BINOMIAL THEOREM	
	XISC MATHS	
1	The total number of terms in the expansion of $(x + a)^{100} + (x - a)^{100}$ after simplification is (a) 50 (b) 202 (c) 51 (d) none of these	
2	Find the no. of terms in the expansions of $\left(1 - 2x + x^2\right)^7$ (a)14 (b)15 (c)7 (d)8	
3	The total number of words formed by 2 vowels and 3 consonants taken from 4 vowels and 5 consonants is (a) 60 (b) 120 (c) 7200 (d) 720	
4	If $a_1, a_2, a_3, \ldots, a_n$ are in A.P., where $a_i > 0$ for all i, show that $$\frac{1}{\sqrt{a_1} + \sqrt{a_2}} + \frac{1}{\sqrt{a_2} + \sqrt{a_3}} + \cdots + \frac{1}{\sqrt{a_{n-1}} + \sqrt{a_n}} = \frac{n-1}{\sqrt{a_1} + \sqrt{a_n}}$$	
5	Show that the products of the corresponding terms of the sequences form a, ar, ar^2 ..... ar^{n-1} and A , AR, AR^2, ...AR^{n-1} a G.P, and find the common ratio	
6	The sum of the Coeff. 0f the first three terms in the expansion of $\left(x - \frac{3}{x^2}\right)^m$ m being natural no. is 559. Find the term of expansion containing x^3	
7	If the first three terms in the expansion of $(a + b)^n$ are 27, 54 and 36 respectively, then find a, b and n.	
8	Find the coefficient of x^5 in the expansion of the product $\left(1 + 2x\right)^5 \left(1 - x\right)^7$	
9	Case study question In a class of 50 students, 30 students like Hindi, 25 like science and 16 like both. Find the no. of students who like (i) at least one of the subjects	

	(ii) Neither Hindi nor science (iii)exactly one of the subject	
10	Case study question In a survey of 25 students, it was found that 15 had taken mathematics, 12had taken physics and 11 had taken chemistry, 5 had taken mathematics and chemistry, 9 had taken mathematics and physics, 4 had taken physics and chemistry and 3 had taken all three subjects. Find the no. of students that had taken (i) only chemistry (ii) only mathematics (iii) only physics (iv) physics and chemistry but mathematics (v) mathematics and physics but not chemistry (vi) only one of the subjects (vii) at least one of three subjects (viii) None of three subjects. a, b, c, d, e, f, g – Number of elements in bounded region	