

| | BCM SCHOOL BASANT AVENUE DUGRI ROAD LUDHIANA SUBJECTIVE ASSIGNMENT XISC (MATHS) | M.M:20 |
|----------|---|---------------|
| 1 | Out of 18 points in a plane, no three are in the same line except five points which are collinear. Find the number of lines that can be formed joining the point. | 2 |
| 2 | Show that for any sets A and B, $A = (A \cap B) \cup (A - B)$ and $A \cup (B - A) = (A \cup B)$ | 2 |
| 3 | In a survey of 600 students in a school, 150 students were found to be taking tea and 225 taking coffee, 100 were taking both tea and coffee. Find how many students were taking neither tea nor coffee. | 2 |
| 4 | Find the domain and the range of the function $f(x)=3x^2 - 5$ Also find $f(-3)$ and the numbers which are associated with the number 43 in its range. | 3 |
| 5 | If the letters of the word RACHIT are arranged in all possible ways as listed in dictionary. Then what is the rank of the word RACHIT? | 3 |
| 6 | If $a + ib = \frac{c+i}{c-i}$, where a, b, c are real numbers, prove that $a^2+b^2 = 1$ and $\frac{b}{a} = \frac{2c}{c^2-1}$ | 3 |
| 7 | Prove that $\cos \alpha + \cos \beta + \cos \gamma + \cos (\alpha + \beta + \gamma) = 4 \cos\left(\frac{\alpha+\beta}{2}\right) \cdot \cos\left(\frac{\beta+\gamma}{2}\right) \cdot \cos\left(\frac{\gamma+\alpha}{2}\right)$ | 5 |