

Instructions:

- 1) Figures to the right indicate Full Marks.
- 2) Do not write anything on the question paper.
- 3) Do not use scientific calculator.

Q.1	Solve the Questions: 1) How many terms are there in an AP 8,16,24, 32....5240 2) $35+40+45+50+\dots+700$ 3) $(2a + 3)^5$	3 3 4														
Q.2	Find the value of x and y by using Interpolation. <table border="1" data-bbox="300 1301 1318 1402"> <thead> <tr> <th>Year</th> <th>2005</th> <th>2006</th> <th>2007</th> <th>2008</th> <th>2009</th> <th>2010</th> </tr> </thead> <tbody> <tr> <td>Production in tons</td> <td>5</td> <td>x</td> <td>10</td> <td>15</td> <td>26</td> <td>y</td> </tr> </tbody> </table> <p style="text-align: center;">OR</p> Solve the Questions: 1) If $56 \times n! = 8!$ then find the value of n. 2) $nC_2 = 45$ then find the value of N.	Year	2005	2006	2007	2008	2009	2010	Production in tons	5	x	10	15	26	y	10
Year	2005	2006	2007	2008	2009	2010										
Production in tons	5	x	10	15	26	y										
Q.3	Solve the Questions: 1) If $nP_3 = 720$ then find the value of n. 2) 7,10,13,15, _____ 21 th term, then $s_{21} =$ _____ <p style="text-align: center;">OR</p> Solve the Questions: 1) If $a_1 = -14$ and $d = 5$ of an arithmetic sequence the $s_8 =$ _____ 2) -3,2,7,12, _____, 25 th Term, then $a_{25} =$ _____	10														

Q.4	<p>Solve the Questions:</p> <p>1) If $N_{C9} = N_{C8}$ then find the value of N_{C17}.</p> <p>2) Solve the following sum by using binomial expansion $(101)^4$</p> <p>3) A committee of 3 persons is to be constituted from a group of 2 men and 3 women. In how many ways can this be done? How many of these committees would consist of 1 man and 2 women?</p> <p style="text-align: center;">OR</p> <p>Solve the Questions:</p> <p>1) $1000+995+990+985+980+\dots +100$</p> <p>2) In how many ways can 4 red, 3 yellow and 2 green discs be arranged in a row if the discs of the same colour are indistinguishable?</p> <p>3) $(x - 5y)^5$</p>	<p>3</p> <p>3</p> <p>4</p>
Q.5	<p>(A) Find the number of arrangements of the word INDEPENDENCE. In how many of these arrangements,</p> <p>(1) Do the words start with P</p> <p>(2) Do all the Vowels always occur together</p> <p>(3) Do the vowels never occur together</p> <p>(4) Do the words begin with I and end in P?</p> <p>(B) Solve the Questions: 1) If $10 \times n! = 7200$ the find value of n.</p> <p style="text-align: center;">2) If $(n + 1)! = 120$ then find the value of n.</p>	<p>5</p> <p>5</p>