Professor Vishwanathan Iyer's

# HERAMB COACHING CLASSES

**XI/ MATHEMATICS** **Marks: 40** **Duration:1Hour** **Date:02/02/18**

**ATTEMPT ANY 8**

1. Find *n,* if
(i) $(n+1)! = 42(n-1)!$
(ii) $(n+3)! = 110(n+1)!$

2. Solve for *n*, if $\frac{(2n)!}{3!(2n-3)!} : \frac{n!}{2!(n-2)!} = 12:1$

3. How many 3 digit numbers can be formed from the digits 0,2,4,5,7 if the repetition of the digits (i) is not allowed
(ii) is allowed?

4. How many numbers each lying between 9 and 1000 can be formed with the digits 0,1,2,3,7,8, if repetition of the digits in a number is allowed?

5. If ${}^{(x+y)}P_2 = 56$ and ${}^{(x-y)}P_2 = 12$, find $x \text{ and } y$.

6. In how many ways can the letters of the word STORY be arranged, so that
(i) T and Y are always together?
(ii) T is always next to Y?

7. Find $n \text{ and } r, if$
(i) ${}^{n}P_r = 720$ and ${}^{n}C_r = 120$
(ii) ${}^{n}C_{r-1} : {}^{n}C_r : {}^{n}C_{r+1} = 20 : 35 : 42$

8. A question paper consists of 11 questions divided into two sections Iand II. Section I consists of 5 questions and section II consists of 6 questions. In how many ways can a student select 6 questions, taking at least 2 questions from each section?

9. in how many ways can 5 students be selected out of 11 students, if
(i) 2 particular students are included?
(ii) 2 particular students are not included?

10. At the end of a certain meeting, everyone had shaken hands with every one else. It was found that 45 handshakes were exchanged. How many members were present at the meeting?