1. How many numbers can be made with the help of the digits $0,\ 1,\ 2,\ 3,\ 4,\ 5$ which are greater than 3000 (repetition is not allowed)

(1) 180 (2) 360

(3) 1380 (4) 1500

2. At an election, a voter may vote for any number of candidates not greater than the number to be elected. There are 10 candidates and 4 are to be elected. If a voter votes for atleast one candidate, then the number of ways in which he can vote, is

(1) 6210 (2) 385

(3) 1110 (4) 5040

3. From 6 different novels and 3 different dictionaries, 4 novels and 1 dictionary are to be selected and arranged in a row on a shelf so that the dictionary is always in the middle. Then the number of such arrangements is

(1) At least 500 but less than 750 (2) At least 750 but less than 1000

(3) At least 1000 (4) Less than 500

4. Total number of four digit odd numbers that can be formed using $0,\ 1,\ 2,\ 3,\ 5,\ 7$ are

(1) 216 (2) 375

(3) 400 (4) 720

5. A five letter word is to be formed such that the letters appearing in the odd numbered positions are taken from the letters which appear without repetition in the word 'MATHEMATICS'. Further the letters appearing in the even numbered positions are taken from the letters which appear with repetitions in the same word MATHEMATICS. In how many different ways the five letter word can be formed -

(1) 390 (2) 600

(3) 540 (4) 450

6. The number of ways a team of 10 players out of 22 players can be made if 6 particular players are always to be included and 4 particular players are always excluded is

(1) ${}^{22}C_{10}$ (2) ${}^{18}C_{3}$

(3) ${}^{12}C_{4}$ (4) ${}^{18}C_{4}$

7. There are m points on a straight line AB and n points on the line AC, none of them being the point A. Triangles are formed with these points as vertices, when (i) A is excluded. (ii) A may be included.

Then, the ratio of number of triangles in the two cases is

(1) $\frac{m+n-2}{m+n}$ (2) $\frac{m+n-2}{m+n-1}$

(3) $\frac{m+n-2}{m+n+2}$ (4) $\frac{m(n-1)}{(m+1)(n+1)}$

8. The number of ways of arranging letters of the word $HAVANA$ so that V and N do not appear together is

(1) 60 (2) 80

(3) 100 (4) 120

9. The number of ways in which 4 boys and 4 girls can sit alternatively in a row if a particular boy and a particular girl are never adjacent to each other, are

(1) 1152 (2) 504

(3) 1656 (4) 648

10. How many different words can be formed by jumbling the letters in the word 'MISSISSIPPI' in which no two S are adjacent?

(1) $8 \cdot {}^{6}C_{4} \cdot {}^{7}C_{4}$ (2) $6 \cdot 7 \cdot {}^{8}C_{4}$

(3) $6 \cdot 8 \cdot {}^{7}C_{4}$ (4) $7 \cdot {}^{6}C_{4} \cdot {}^{8}C_{4}$