SET 2

1. A student is to answer 10 out of 13 questions in an examination such that he must choose at least 4 from the first five questions. The number of choices available to him is

   (a) 346
   (b) 140
   (c) 196
   (d) 280

2. The number of ways in which 6 men and 5 women can dine at a round table if no two women are to sit together is given by

   (a) 7×5
   (b) 6×6
   (c) 30
   (d) 5×4

3. How many ways are there to arrange the letters in the word GARDEN with vowels in alphabetical order

   (a) 480
   (b) 240
   (c) 360
   (d) 120

4. The number of ways of distributing 8 identical balls in 3 distinct boxes so that none of the boxes is empty is

   (a) ${}^8C_3$
   (b) 21
   (c) 3^8
   (d) 5

5. If the letters of the word SACHIN are arranged in all possible ways and these words are written out as in the dictionary , then the word SACHIN appears at serial number

(a) 601

(b) 600

(c) 603

(d) 602

6. 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 selected, if a voter votes for at least one candidate, then the number of ways in which he can vote is

   (a) 5040

   (b) 6210

   (c) 385

   (d) 1110

7. The set S =$\{1, 2, 3, ...12\}$ is to be partitioned three sets A,B,C of equal sizes.Thus $A \cup B \cup C = S$, $A \cap B = B \cap C = A \cap C = \phi$ The number of ways to partition S is

   (a) $\frac{121}{(4!)^3}$

   (b) $\frac{12!}{(4!)^4}$

   (c) $\frac{12!}{3!(4!)^3}$

   (d) $\frac{12!}{3!(4!)^4}$

8. In a shop there are five types of ice creams available. A child buys six ice creams.

   STATEMENT - I : The number of different ways the child can buy the six ice creams is ${}^{10}C_5$

   STATEMENT - II : The number of different ways the child can buy the six ice creams is equal to the number of different ways of arranging 6 A's and 4 B's in a row.

   (a) Statement - I is True, Statement II is True. Statement II is a correct explanation of for statement I.

(b) Statement - I is True, Statement II is True. Statement II is NOT a correct explanation of for statement I.

(c) Statement - I is True, Statement II is FALSE .

(d) Statement - I is False , Statement II is TRUE.

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

   (a) $8.{}^6C_4\ {}^7C_4$

   (b) $6.7\ {}^8C_4$

   (c) $6.\ 8.{}^7C_4$

   (d) $7.{}^6C_4\ {}^8C_4$

10. 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 arrangement is

    (a) at least 500 but less than 750

    (b) at least 750 but less than 1000

    (c) at least 1000

    (d) less than 500

11. In a cartain test, a_1 students gave wrong answers to at least i question where i = 1,2,3,.....k . No student gave more than k wrong answers. The total number of wrong answer given is.....

12. LEt A be a set of n distinct elements. Then the total number of distince functions from A to A is ..... and out of these... are onto function

13. Total number of ways in which six $'+'$ and four $'-'$ signs can be arranged in a line such that no two $'-'$ signs occur together is.....

14. There are four balls of different colours and four boxes of colours, same as those of the balls. The number of ways in which the balls, one each in a box, could be placed such that a ball does not go to a box of its own colour is.....

15. The product of any r consecutive natural numbers is always divisible by $r!$ (True/False)

16. Ten different letters of an alphabet are given. Words with five letters are formed from three given letters. Then the number of words which have at least one letter repeated as :

    (a) 69760

    (b) 30240

    (c) 99748

    (d) none of these

17. The value of the expression ${}^{47}C_4 + \sum_{j=1}^{5} {}^{52-j}C_3$ is equal to

    (a) ${}^{47}C_4$

    (b) ${}^{52}C_5$

    (c) ${}^{52}C_4$

    (d) none of these

18. An n- digit number is a positive number with exactly n digits. Nine hundred distinct n digit numbers are to be formed using only the three digits 2,5 and 7. The smallest value of n for which this is possible is

    (a) 6

    (b) 7

    (c) 8

    (d) 9

ANSWERS - SET 2

1. c

2. a

3. c

4. b

5. a
6. c
7. a
8. a
9. d
10. c
11. $\sum_{i=1}^{k} a_i$
12. n^n, $n!$
13. 35
14. 9
15. True
16. a
17. c
18. b