ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION

FOR GOD AND COUNTRY

Worksheet-22

SUBJECT – MATHEMATICS

2nd-term

Chapter: Algebra **Class: XI**

Topic: Combinations **Date: 14 .11.2020**

Choose the correct option (1 X 15= 15)

1. If ${}^{20}C_r = {}^{20}C_{r-10}$, then ${}^{18}C_r$ is equal to

   (a) 4896 (b) 816 (c) 1632 (d) none of these

2. If ${}^{20}C_r = {}^{20}C_{r+4}$, then ${}^{r}C_3$ is equal to

   (a) 54 (b) 56 (c) 58 (d) none of these

3. If ${}^{15}C_{3r} = {}^{15}C_{r+3}$, then r is equal to

   (a) 5 (b) 4 (c) 3 (d) 2

4. If ${}^{20}C_{r+1} = {}^{20}C_{r-1}$, then r is equal to

   (a) 10 (b) 11 (c) 19 (d) 12

5. If $C(n, 12) = C(n, 8)$, then $C(22, n)$ is equal to

   (a) 231 (b) 210 (c) 252 (d) 303

6. If ${}^{m}C_1 = {}^{n}C_2$, then

   (a) $2m = n$ (b) $2m = n(n+1)$ (c) $2m = n(n-1)$ (d) $2n = m(m-1)$

7. If ${}^{n}C_{12} = {}^{n}C_{8}$, then $n =$

(a) 20 (b) 12 (c) 6 (d) 30

8. If ${}^{n}C_{r} + {}^{n}C_{r+1} = {}^{n+1}C_{x}$, then $x =$

(a) r (b) $r-1$ (c) n (d) $r+1$

9. If ${}^{(a^2-a)}C_{2} = {}^{(a^2-a)}C_{4}$, then $a =$

(a) 2 (b) 3 (c) 4 (d) none of these

10. ${}^{5}C_{1} + {}^{5}C_{2} + {}^{5}C_{3} + {}^{5}C_{4} + {}^{5}C_{5}$ is equal to

(a) 30 (b) 31 (c) 32 (d) 33

11. Total number of words formed by 2 vowels and 3 consonants taken from 4 vowels and 5 consonants is equal to

(a) 60 (b) 120 (c) 7200 (d) none of these

12. There are 12 points in a plane. The number of the straight lines joining any two of them when 3 of them are collinear, is

(a) 62 (b) 63 (c) 64 (d) 65

13. Three persons enter a railway compartment. If there are 5 seats vacant, in how many ways can they take these seats ?

(a) 60 (b) 20 (c) 15 (d) 125

14. In how many ways can a committee of 5 be made out of 6 men and 4 women containing at least one women ?

(a) 246 (b) 222 (c) 186 (d) none of these

15. There are 10 points in a plane and 4 of them are collinear. The number of straight lines joining any two of them is

(a) 45 (b) 40 (c) 39 (d) 38

Prepared by :-
SUKUMAR MANDAL (SkM).