11th chapter 4 - 1 mark

11th Standard

Maths

Reg.No. : | | | | | | |

Exam Time : 01:13:00 Hrs

Total Marks : 73

73 x 1 = 73

1) The sum of the digits at the 10^{th} place of all numbers formed with the help of 2, 4, 5, 7 taken all at a time is
(a) 432 (b) 108 (c) 36 (d) 18

2) In an examination there are three multiple choice questions and each question has 5 choices. Number of ways in which a student can fail to get all answer correct is
(a) 125 (b) 124 (c) 64 (d) 63

3) The number of ways in which the following prize be given to a class of 30 boys first and second in mathematics, first and second in physics, first in chemistry and first in English is
(a) $30^4 \times 29^2$ (b) $30^3 \times 29^3$ (c) $30^2 \times 29^4$ (d) 30×29^5

4) The number of 5 digit numbers all digits of which are odd is
(a) 25 (b) 5^5 (c) 5^6 (d) 625

5) In 3 fingers, the number of ways four rings can be worn is ways.
(a) 4^3-1 (b) 3^4 (c) 68 (d) 64

6) If ${}^{(n+5)}P_{(n+1)} = \frac{11(n-1)}{2} \cdot {}^{(n+3)}P_n$, then the value of n are
(a) 7 and 11 (b) 6 and 7 (c) 2 and 11 (d) 2 and 6

7) The product of r consecutive positive integers is divisible by
(a) r! (b) (r-1)! (c) (r+1)! (d) r^r

8) The number of five digit telephone numbers having at least one of their digits repeated is
(a) 90000 (b) 10000 (c) 30240 (d) 69760

9) If a^2-a $C_2 = a^2$-a C_4 then the value of 'a' is
(a) 2 (b) 3 (c) 4 (d) 5

10) There are 10 points in a plane and 4 of them are collinear. The number of straight lines joining any two points is
(a) 45 (b) 40 (c) 39 (d) 38

11) The number of ways in which a host lady invite 8 people for a party of 8 out of 12 people of whom two do not want to attend the party together is
(a) $2 \times {}^{11}C_7 + {}^{10}C_8$ (b) ${}^{11}C_7 + {}^{10}C_8$ (c) ${}^{12}C_8 - {}^{10}C_6$ (d) ${}^{10}C_6 + 2!$

12) The number of parallelograms that can be formed from a set of four parallel lines intersecting another set of three parallel lines.
(a) 6 (b) 9 (c) 12 (d) 18

13) Everybody in a room shakes hands with everybody else. The total number of shake hands is 66. The number of persons in the room is
(a) 11 (b) 12 (c) 10 (d) 6

14) Number of sides of a polygon having 44 diagonals is
(a) 4 (b) 4! (c) 11 (d) 22

15) If 10 lines are drawn in a plane such that no two of them are parallel and no three are concurrent, then the total number of points of intersection are
(a) 45 (b) 40 (c) 10! (d) 210

16) In a plane there are 10 points are there out of which 4 points are collinear, then the number of triangles formed is
(a) 110 (b) ${}^{10}C_3$ (c) 120 (d) 116

17) In ${}^{2n}C_3 : {}^nC_3 = 11 : 1$ then n is
(a) 5 (b) 6 (c) 11 (d) 7

18) ${}^{(n-1)}C_r + {}^{(n-1)}C_{(r-1)}$ is
(a) ${}^{(n+1)}C_r$ (b) ${}^{(n-1)}C_r$ (c) ${}^nC_r$ (d) ${}^nC_{r-1}$

19) The number of ways of choosing 5 cards out of a deck of 52 cards which include at least one king is
(a) $^{52}C_5$ (b) $^{48}C_5$ (c) $^{52}C_5 + {}^{48}C_5$ (d) $^{52}C_5 - {}^{48}C_5$

20) The number of rectangles that a chessboard has
(a) 81 (b) 99 (c) 1296 (d) 6561

21) The number of 10 digit number that can be written by using the digits 2 and 3 is
(a) $^{10}C_2 + {}^{9}C_2$ (b) 2^{10} (c) $2^{10}-2$ (d) 10!

22) If P_r stands for $^r P_r$ then the sum of the series $1+ P_1 + 2P_2 + 3P_3 +...+ nPn$ is
(a) P_{n+1} (b) $P_{n+1}-1$ (c) $P_{n-1}+1$ (d) $^{(n+1)}P_{(n-1)}$

23) The product of first n odd natural numbers equals
(a) $^{2n}C_n \times {}^{n}P_n$ (b) $\left(\frac{1}{2}\right)^n {}^{2n}C_n \times {}^{n}P_n$ (c) $\left(\frac{1}{4}\right)^n \times {}^{2n}C_n \times {}^{2n}P_n$ (d) $^{n}C_n \times {}^{n}P_n$

24) If $^nC_4, {}^nC_5, {}^nC_6$ are in AP the value of n can be
(a) 14 (b) 11 (c) 9 (d) 5

25) 1+3+5+7+ +17 is equal to
(a) 101 (b) 81 (c) 71 (d) 61

26) The number of permutations of n different things taking r at a time when 3 particular things are to be included is
(a) n-3 P_{r-3} (b) n-3 P_r (c) nP_{r-3} (d) r! n-3C_{r-3}

27) The number of different signals which can be give from 6 flags of different colours taking one or more at a time is
(a) 1958 (b) 1956 (c) 16 (d) 64

28) The number of ways to average the letters of the word CHEESE are
(a) 120 (b) 240 (c) 720 (d) 6

29) Number of all four digit numbers having different digits formed of the digits 1, 2, 3, 4 and 5 and divisible by 4 is
(a) 24 (b) 30 (c) 125 (d) 100

30) The product of r consecutive positive integers is divisible by
(a) r! (b) r!+1 (c) (r+1) (d) none of these

31) If $15C_{3r}=15\ C_{r+3}$, then r is equal to
(a) 5 (b) 4 (c) 3 (d) 2

32) If $mC_1 = nC_2$, then
(a) 2m = n (b) 2m = n(n+1) (c) 2m = n(n-1) (d) 2n=m(m-1)

33) $5c_1+5c_2+5c_3+5c_4+5c_5$ is equal to
(a) 30 (b) 31 (c) 32 (d) 33

34) Among the players 5 are bowlers. In how many ways a team of 11 may be formed with atleast 4 bowlers?
(a) 265 (b) 263 (c) 264 (d) 275

35) If $n+1\ C_3=2.nC_{21}$ then n =
(a) 3 (b) 4 (c) 5 (d) 6

36) If $(a^2-a)C_2=(a^2-a)C_4$, then a =
(a) 2 (b) 3 (c) 4 (d) none of these

37) 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

38) For all $n \in N$, $3 \times 5^{2n+1}+2^{3n+1}$ is divisible by
(a) 19 (b) 17 (c) 23 (d) 25

39) If $10^n + 3 \times 4^{n+2}+\lambda$ is divisible by 9 for all $n \in N$, then the least positive integral value of λ is
(a) 5 (b) 3 (c) 7 (d) 1

40) If $p(n):49^n + 16^n + \lambda$ is divisible by 64 for $n \in N$ is true, then the least negative integral value of λ is
(a) -3 (b) -2 (c) -1 (d) -4

41) $\lfloor n+\lfloor n+1$ is:
(a) $Ln(n+2)$ (b) $\lfloor n+2$ (c) $\lfloor 2n+1$ (d) none of these

42) If $^{100}C_r = {}^{100}C_{3r}$ then r is:

(a) 24 (b) 25 (c) 20 (d) 50

43) The number of diagonals of a decagon:
(a) 10 (b) 20 (c) 35 (d) 40

44) If ${}^{n}P_{r} = 720$, ${}^{n}C_{r} = 120$ then r is:
(a) 2 (b) 4 (c) 3 (d) 5

45) The number of parallelogram formed if 5 parallel lines intersect with 4 other paralle llines is:
(a) 10 (b) 45 (c) 30 (d) 60

46) How many words can be formed using all the letters of the word ANAND:
(a) 30 (b) 35 (c) 40 (d) 45

47) If ${}^{n}P_{r} = k \times {}^{n-1}P_{r-1}$ what is k:
(a) r (b) n (c) n+1 (d) r+1

48) The number of ways of selecting of 3 poets and 4 scientists such that poets are in even places:
(a) 12 (b) 36 (c) 72 (d) 144

49) If ${}^{n}C_{r-1} = 36$, ${}^{n}C_{r} = 84$ and ${}^{n}C_{r+1} = 126$ then r =
(a) 2 (b) 2 (c) 3 (d) 4

50) If 7 points out of 12 are in the same straight line then the number of triangles formed is
(a) 35 (b) 21 (c) 220 (d) 185

51) a polygon has 44 diagonals, then the number of its sides are
(a) 22 (b) 88 (c) 8 (d) 11

52) Everybody in a room shakes hands with everybody else. The total number of handshakes is 91. The total number of persons in the room is
(a) 11 (b) 14 (c) 13 (d) 12

53) Out of 10 red and 8 white balls, 5 red and 4 white balls can be drawn in how many number of ways
(a) ${}^{8}C_{5} \times {}^{10}C_{4}$ (b) ${}^{10}C_{5} \times {}^{8}C_{4}$ (c) ${}^{18}C_{9}$ (d) ${}^{10}C_{5} \times {}^{8}C_{4}$

54) There are 10 lamps in a hall. Each one of them can be switched on independently. The number of ways in which the hall can be illuminated is
(a) 10^{2} (b) 1023 (c) 2^{10} (d) 10!

55) ${}^{n}C_{r} + {}^{2n}C_{r-1} + {}^{n}C_{r-2} =$
(a) ${}^{n+1}C_{r}$ (b) ${}^{(n+1)}C_{r+1}$ (c) ${}^{(n+2)}C_{r}$ (d) ${}^{n+2}C_{r+1}$

56) The number of ways of disturbing 7 identical balls in 3 distinct boxes, so that no box is empty is
(a) 7 (b) 6 (c) 35 (d) 15

57) A candidate is required to answer 7 question out of 12 questions, which are divided into two groups each containing 6 questions. He is not permitted to attempt more than 5 questions from either group. Find the number of different ways of doing questions.
(a) 779 (b) 781 (c) 780 (d) 782

58) The number of integers greater than 6000 that can be formed, using the digits 3, 5, 6, 7 and 8 without repetition
(a) 216 (b) 192 (c) 120 (d) 72

59) The number of ways in which we can arrange 4 letters of the word "MATHEMATICS" is given by
(a) 136 (b) 2454 (c) 1680 (d) 192

60) The number of squares which can form on a chess a board is
(a) 64 (b) 160 (c) 224 (d) 204

61) If ${}^{n}C_{4}$, ${}^{n}C_{5}$ and ${}^{n}C_{5}$ are in A.P., the value of n =
(a) 14 (b) 11 (c) 7 (d) 8

62) Each of five questions is a multiple-choice test has 4 possible answers. The number of different sets of possible answers is
(a) 4^{5}-4 (b) 5^{4}-5 (c) 1024 (d) 1023

63) The number of positive integral solution of $x \times y \times z = 30$ is
(a) 3 (b) 1 (c) 9 (d) 27

64) There are 15 points in a plane of which exactly 8 are collinear. The number of straight lines obtained by joining these points is

(a) 105 (b) 28 (c) 77 (d) 78

65) The number of rectangles than can be formed on a chess board is

(a) $^{9}C_2$ (b) $^{9}C_2$ X $^{9}C_2$ (c) 204 (d) 224

66) The number of ways in which we can post 5 letters in 10 letter boxes is

(a) 50 (b) 5^{10} (c) 10^5 (d) 1

67) How many arrangements can be made out of letters of words "ENGINEERING"

(a) 11! (b) $\frac{11!}{(3!)^2(2!)^2}$ (c) $\frac{11!}{3!2!}$ (d) $\frac{11!}{3!}$

68) The number of 4 digit numbers, that can be formed by the digits 3, 4, 5, 6, 7, 8, 0 and no digit is being repeated is

(a) 720 (b) 840 (c) 280 (d) 560

69) The number of diagonals that can be drawn by joining the vertices of an octagon is

(a) 28 (b) 48 (c) 20 (d) 24

70) If $^{n}P_t$ = 720 nCr, then the value of r =

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

71) The number of different 4 letters words with or without meaning that can be formed from the letters of the word "SURYA" is

(a) 120 (b) 360 (c) 230 (d) 5

72) There is a letter lock with 3 rings each marked with 5 letters and do not know the keyword. The total number of attempts can be made to know the keyword is

(a) 3^5 (b) 5^3 (c) 124 (d) 5

73) If $^{n}C_{10}$ = $^{n}C_6$, then $^{n}C_2$ =

(a) 16 (b) 4 (c) 120 (d) 240

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73 x 1 = 73

1) (b) 108
2) (b) 124
3) (a) $30^4 \times 29^2$
4) (b) 5^5
5) (b) 3^4
6) (b) 6 and 7
7) (a) r!
8) (a) 90000
9) (b) 3
10) (b) 40
11) (c) $^{12}C_8$-$^{10}C_6$
12) (d) 18
13) (b) 12
14) (c) 11
15) (a) 45
16) (d) 116
17) (b) 6
18) (c) nC_r
19) (d) $^{52}C_5$ - $^{48}C_5$
20) (c) 1296
21) (b) 2^{10}

22) (b) $P_{n+1}-1$

23) (b) $\left(\frac{1}{2}\right)^n {}_{2n}C_n \times {}^nP_n$

24) (a) 14

25) (b) 81

26) (d) r! n-3C_{r-3}

27) (b) 1956

28) (a) 120

29) (a) 24

30) (a) r!

31) (c) 3

32) (c) 2m = n(n-1)

33) (b) 31

34) (c) 264

35) (c) 5

36) (b) 3

37) (b) 40

38) (b) 17

39) (a) 5

40) (c) -1

41) (a) $Ln(n+2)$

42) (b) 25

43) (c) 35

44) (c) 3

45) (d) 60

46) (a) 30

47) (b) n

48) (d) 144

49) (c) 3

50) (d) 185

51) (d) 11

52) (b) 14

53) (b) $^{10}C_5$ X $^8C_4$

54) (b) 1023

55) (c) $^{(n+2)}C_r$

56) (d) 15

57) (c) 780

58) (b) 192

59) (b) 2454

60) (d) 204

61) (a) 14

62) (c) 1024

63) (d) 27

64) (d) 78

65) (b) $^9C_2$ X $^9C_2$

66) (c) 10^5

67) (b) $\frac{11!}{(3!)^2(2!)^2}$

68) (a) 720

69) (c) 20

70) (a) 6

71) (a) 120

72) (b) 5^3

73) (c) 120