Permutation & Combination

Q1. 5 different cars are to be loaded on to a transport truck. There are _____ different ways can the cars be arranged.
a. 130 b. 120
c. 50 d. 150

Q2. There are _____ different arrangements that can be made from the letters of the word ***SCREEN.***
a. 180 b. 720
c. 360 d. 380

Q3. If a committee of 3 persons can be chosen from 5 persons then there are _____ possible ways.
a. 20 b. 15
c. 10 d. 5

Q4. _____ different necklaces can be made from 6 beads of different colors.
a. 120 b. 720
c. 180 d. 60

Q5. A president and a vice president is to be selected from 17 peoples. There are _____ ways.
a. 354 b. 136
c. 441 d. 272

Q6. There are _____ different natural numbers of three digits can be formed by the digits 0, 1, 2, 3, 4, 5 (none of digit is repeated).
a. 120 b. 100
c. 140 d. 160

Q7. There are 7 competitors in an event. There are _____ ways can the Gold, Silver and Bronze medals be awarded.
a. 200 b. 210
c. 300 d. 310

Q8. ${}^{8}P_{2}$ = _____.
a. 80 b. 56
c. 10 d. 76

Q9. $\binom{6}{2,3,1}$ = _____.
a. 10 b. 80
c. 56 d. 60

Q10. If ${}^{n}P_{2}$ = 20 then n = _____.
a. 4 b. 10
c. 5 d. 8

Q11. Out of 5 men and 2 women, a committee of 3 persons is to be formed. If at least 1 woman must be included in the committee then there are _____ ways.
a. 21 b. 50
c. 32 d. 25

Q12. Out of 12 persons _____ parties can be formed if each party consists of not more than 5 persons.
a. 1585 b. 1500
c. 1685 d. 1600

Q13. There are _____ diagonals in a hexagon.
a. 15 b. 9
c. 21 d. 6

Q14. A polygon has 54 diagonals. The number of its sides is _____.
a. 15 b. 16
c. 12 d. 9

Q15. A party of 7 members is to be chosen from a group of 6 ladies and 5 gents. There are _____ ways if exactly 4 ladies must be the members.
a. 4320 b. 3600
c. 40320 d. None

Q16. There are _____ ways to arrange 7 students in a row.
a. 8! b. 7!
c. 6! d. None

Q17. There are _____ ways to arrange 9 students in a circle.
a. 8! b. 7!
c. 6! d. None

Q18. n different objects can be arranged taken all at a time in _____ ways.
a. (n+1)! b. (n-1)!
c. n! d. n

Q19. When a selection of objects is made without paying regard to the order of selection, it is called _____.
a. Sequence b. Combination
c. Series d. Permutation

Q20. If ${}^{n}C_{8} = {}^{n}C_{12}$ then n = _____.
a. 4 b. 20
c. 8 d. 12

Q21. There are _____ different odd numbers of three digits each can be formed from the digits 2, 4, 6, 7, if a digit is used once.
a. 12 b. 24
c. 6 d. 24

Q22. There are _____ different numbers of five digits that are greater than 40000 each can be formed from the digits 0, 1, 2, 3, 4, 5, if a digit is used once.
a. 210 b. 220
c. 230 d. 240

Q23. Out of 3 men and 9 women, a committee of 6 persons is to be formed. If at least 1 man must be included in the committee then there are _____ ways.

a. 840 b. 740
c. 620 d. 520

Q24. There are _____ ways to arrange 3 English, 2 Physics and 2 Mathematics books in a shelf to keep books of same subject keep together.

a. 100 b. 144
c. 250 d. 300

Q25. A car manufacturing company offer 3 models, 6 colors and 4 interior designs. There are _____ different cars they offer.

a. 72 b. 60
c. 18 d. 12

PERMUTATION AND COMBINATION MCQ's

1. $\frac{(n-5)!}{(n-4)!} = ?$

A. $\frac{1}{n-4}$ B. $\frac{1}{n-5}$

C. $\frac{1}{n-6}$ D. None of these

2. In how many ways can a three digit number be formed from set of digits {2, 3, 4, 5, 6} if no digit is related?

A. 120 B. 60

C. 720 D. None of these

3. 6 person enter in a bus which has a capacity of three persons. In how many ways can they be seated?

A. 720 B. 210

C. 120 D. None of these

4. How many permutations are there of word TITANIC?

A. 1260 B. 1206

C. 1200 D. None of these

5. How many permutations of the word FANTASTIC are there?

A. 97200 B. 90720

C. 97201 D. None of these

6. From a group of 17 numbers, one number is to be chosen precedent, one secretary and one treasure. In how many ways can they be selected.

A. 4080 B. 4008

C. 4800 D. None of these

7. $\frac{(k-1)!}{k!} + \frac{(k+1)!}{k!} = ?$

A. $\frac{k^2+k}{k}$ B. $\frac{k^2-k+1}{k}$

C. $\frac{k^2+k+1}{k}$ D. None of these

8. Let n be a positive integer then the factorial of n denoted by n ! is defined as_____.

A. $n! = n(n-1)(n-2)(n-3).....3.2.1$

B. $n! = n(n-1)(n-3)(n-5).....3.2.1$

C. $n! = (n-1)(n-2)(n-3).....3.2.1$

D. None of these

9. How many words can be formed out of the letters of the word 'MISSISSIPPI' when all the letters are used in each word?

A. 34650 B. 4650

C. 650 D. None of these

10. $\frac{(5+3)!}{5!+3!} = ?$

A. 420 B. 320

C. 220 D. None of these

11. 2! + 0! = ?

A. 2 B. 3

C. 1 D. None of these

12. $\frac{(n+1)!}{n!} = ?$

A. n ! B. n + 1

C. (n + 1) ! D. None of these

13. $\frac{2!}{0!} = ?$

A. 0 B. 2

C. 1 D. None of these

14. Suppose there are n object of which there are 'P' like objects of one kind 'q' like objects of the second kind and r like objects of the third kind. If x be the required number of permutations of n objects, then x is defined as_____.

A. $\frac{n!}{p!\,q!\,r!}$ B. $\frac{p!\,q!\,r!}{n!}$

C. $n!$ D. None of these

15. 4! = ?

A. 12 B. 24

C. 36 D. None of these

16. What is called the arrangements of a finite number of objects some or all a time?

A. Combination B. Permutation

C. Set D. None of these

17. How many ways can six people be seated at a round table?

A. 100 ways B. 120 ways

C. 140 ways D. None of these

18. The number of permutation of the n objects taken r times at a time denoted P_r is defined as a

A. ${}^nP_r = \frac{n!}{(n-r)}$ B. ${}^nP_r = \frac{n!}{(n+r)!}$

C. ${}^nP_r = \frac{n}{(n+r)}$ D. None of these

19. If corresponding to one way of filling a place in m different ways there are n ways filling another place, then two place can be filled up in how many different ways?

A. m B. n

C. m x n D. None of these

20. For any positive integer n. ${}^nP_n = ?$

A. (n – 1)! B. 1

C. n! D. None of these

21. How many distinct four digits numbers can be formed the integers 1, 2, 3, 4, 5, 6 if each integer is used only once.

A. 120 B. 280

C. 360 D. None of these

22. What is the value of ${}^{20}P_3$?

A. 640 B. 4860

C. 6840 D. None of these

23. What is the value of ${}^{16}P_4$?

A. 4680 B.43680

C. 3680 D. None of these

24. How many numbers consisting of two digits can be formed the given four integers 2, 3, 7, 9.

A. 8 B. 10

C. 12 D. None of these

25. How many arrangement can be made of four letter p, q, r, s taken three at a time?

A. 8 B. 12

C. 24 D. None of these

26. How many singles can be given with four different flags when any number of them may be hoisted at a time?

A. 8 B. 32

C. 64 D. None of these

27. How many words can be formed from the letter of the word ARTICLE using all the letters?

A. 4050 B. 5040

C. 45500 D. None of these

28. In how many ways can five books on English and three on Urdu be placed on a shelf so that books on the same subject are always together?

A. 140 B. 1440

C. 14440 D. None of these

29. In how many ways can a set different “Mathematics” books and five different Physics books placed on a shelf with a space for nine books, if all books on the same subjects are to be kept together?

A. 1176 B. 5760

C. 2522 D. None of these

30. How many numbers can be formed from the digits 1, 3, 5, 7, 9 taken all at a time with out repeating any digit?

A. 20 B. 120

C. 220 D. None of these

31. In a club of15 members, one member is to be chosen president, one secretary, and one treasure

A. 1730 B. 3040

C. 3730 D. None of these

32. If the n element of set are to be arranged in a circle, they may be so arranged in how many ways?

A. n! ways B. (n – 1)! ways

C. $\frac{n!}{n}$ ways D. None of these

33. How many permutation of the letter of the word TITLE TALE are there?

A. 81900 B. 91800

C. 18900 D. None of these

34. How many words can be formed out of the letters of the word PAKISTAN taken altogether.

A. 20160 B. 160

C. 60 D. None of these

35. How many words can be formed out of the letters of the word MATHEMATICS taken altogether?

A. 15120 B. 498960

C. 10810800 D. None of these

36. How many words can be formed out of the letters of the word ASSASSINATION taken altogether?

A. 15120 B. 5120

C. 10810800 D. None of these

37. How many words can be formed out of the letters of the word INDEPENDENCE taken altogether?

A. 15120 B. 498960

C. 1663200 D. None of these

38. How many there number can be formed by the digits 2, 3, 3, 3 and 4?

A. 20 B. 40

C. 60 D. None of these

39. Set $A=\{e, f, g, h\}$, What is the number of permutations of the elements of A taken two at a time?

A. 8 B. 10

C. 12 D. None of these

40. How many different arrangements of the letters in the word RADIO are possible?

A. 120 B. 30

C. 60 D. None of these

41. When a selection of objects is made without paying regard to the order of selection, it is called a

A. Combination B. Permutation

C. Set D. None of these

42. The number of combinations of *n* things taken *r* at a time is called as _____.

A. ${}^nC_r = \frac{n!}{r!(n-r)!}$ B. ${}^nC_r = \frac{n!}{r!(n-r)}$

C. ${}^nC_r = \frac{a}{(1-r)!}$ D. None of these

43. What is the value of ${}^nC_n$?

A. ${}^nC_{n+r}$ B. ${}^nC_{n-r}$

C. 1 D. None of these

44. What is the value of ${}^nC_r$?

A. ${}^nC_{n+r}$ B. ${}^nC_{n-r}$

C. ${}^nC_{n\pm r}$ D. None of these

45. If ${}^nC_8 = {}^nC_{12}$. Then what is n?

A. 10 B. 20

C. 30 D. None of these

46. $\frac{8!}{4!\,2!} = ?$

A. 1! B. 1

C. 840 D. None of these

47. $\frac{(P+1)!}{P!} = ?$

A. P B. 1

C. P + 1 D. None of these

48. $\frac{13!}{12!} = ?$

A. 1 B. 13

C. 12 D. None of these

49. $\frac{9!(k+1)!\,k}{8!(k-1)!} = ?$

A. $9(k-1)$ B. $9k^2(k+1)$

C. $9k^2$ D. None of these

50. $\frac{6!}{3!} = ?$

A. 24 B. 26

C. 120 D. None of these

ANSWER KEY 1

1	b	2	c	3	c	4	a	5	D
6	a	7	b	8	b	9	d	10	C
11	d	12	a	13	b	14	c	15	D
16	b	17	a	18	c	19	b	20	B
21	c	22	d	23	a	24	b	25	A

ANSWER KEY 2

Question	1	2	3	4	5	6	7	8	9	10
Answer	A	B	C	A	B	A	C	A	A	B

Question	11	12	13	14	15	16	17	18	19	20
Answer	B	B	B	A	B	B	B	A	C	C

Question	21	22	23	24	25	26	27	28	29	30
Answer	C	C	B	C	C	C	B	B	B	B

Question	31	32	33	34	35	36	37	38	39	40
Answer	B	B	C	A	C	C	C	C	C	A

Question	41	42	43	44	45	46	47	48	49	50
Answer	A	A	C	B	B	C	C	B	B	C