Permutation & Combination (Test-01)

Q.1 A code word is to consist of two English alphabets followed by two distinct numbers between 1 and 9. How many such code words are there
(a) 6,15,800 (b) 46,800
(c) 7,19,500 (d) 4,10,800

Q.2 Given: P(7 , K) = 60 P(7 , K-3). Then:
(a) k = 9 (b) k = 8
(c) k = 5 (d) k = 0

Q.3 The number of ways in which n books can be arranged on a self so that two particular books are not together
(a) (n – 2).(n – 1)! (b) (n -2).(n + 1)!
(c) (n -1).(n + 1)! (d) (n – 2).(n + 2)!

Q.4 In how many ways can the letters of the word FAILURE be arranged so that the consonants may occupy only odd positions?
(a) 576 (b) 476
(c) 376 (d) 276

Q.5 In how many ways can a party of 4 men and 4 women be seated at the circular table, so that no two women are adjacent?
(a) 164 (b) 174
(c) 144 (d) 154

Q.6 How many words can be formed with the letters of the word ORIENTAL so that A and E always occupy odd places:
(a) 540 (b) 8640
(c) 8460 (d) 8450

Q.7 The letters of the word "VIOLENT" are arranged so that the vowels occupy even place only. The no. of permutations is_.
(a) 144 (b) 120
(c) 24 (d) 72

Q.8 There are three blue balls, four red balls and five green balls. In how many ways can they are arranged in a row?
(a) 26,720 (b) 27,720
(c) 27,820 (d) 26,620

Q.9 How many permutations can be formed from the letters of the word "DRAUGHT", if both vowels may not be separated?
(a) 720 (b) 1,440
(c) 140 (d) 1,000

Q.10 Number of ways of painting a face of a cube by 6 colours is-
(a) 36 (b) 6
(c) 24 (d) 1

Q.11 7 books are to be arranged in such a way so that two particular books are always at first and last place. Find the number of arrangements.
(a) 60 (b) 120
(c) 240 (d) 480

Q.12 Find the number of arrangements in which the letters of the word 'MONDAY' be arranged so that the word thus formed begin with 'M' and do not end with 'N'.
(a) 720 (b) 120
(c) 96 (d) None

Q.13 In how many ways can 17 billiard balls be arranged if 7 of them are black, 6 red and 4 white?
(a) 4084080 (b) 1
(c) 8048040 (d) None

Q.14 (n + 1) ! = 20 (n - 1)!, Find n
(a) 6 (b) 5
(c) 4 (d) 10

Q.15 The number of ways of arranging 6 boys and 4 girls in a row so that all 4 girls are together is:
(a) 6!. 4! (b) 2 (7!. 4!)
(c) 7!. 4! (d)2. (6!. 4!)

Q.16 How many numbers not exceeding 1000 can be made from the digits 1,2,3,4,5,6,7,8,9 if repetition is not allowed.
(a) 364 (b) 585
(c) 728 (d) 819

Q.17 A garden is having 6 tall trees in a row. In how many ways can 5 children stand, one in a gap between the trees in order to pose for a photograph?
(a) 24 (b) 120
(c) 720 (d) 30

Q.18 There are 12 questions to be answered in Yes or No. How many ways can these be Answered?
(a) 1024 (b) 2048
(c) 4096 (d) None

MEASURES OF DISPERSION (Test-01)

Q.1 Standard deviation is _____times of $\sqrt{MD \times QD}$

(a) 2/3 (b) 4/5

(c) $\sqrt{\frac{15}{8}}$ (d) $\sqrt{\frac{8}{15}}$

Q.2 The Q.D of 6 numbers 145, 8, 36, 40, 38, 41 is equal to

(a) 12.5 (b) 25

(c) 13.5 (d) 37

Q.3 S.D of first five consecutive natural numbers is

(a) $\sqrt{10}$ (b) $\sqrt{8}$

(c) $\sqrt{3}$ (d) $\sqrt{2}$

Q.4 If the profits of a company remain same for the last ten months then the S.D. of profits of the company would be:

(a) Positive (b) Negative

(c) Zero (d) (a) or (c)

Q.5 Dispersion are called averages of the_____ order.

(a) 1st (b) 2nd

(c) 3rd (d) None

Q.6 If x and y are related as 3x – 4y = 20 and the quartile deviation of x is 12, then the quartile deviation of y is:

(a) 14 (b) 15

(c) 16 (d) 9

Q.7 The best measure of dispersion is:

(a) Q. D. (b) M. D.

(c) Range (d) S. D.

Q.8 If the mean and S.D. of x are a & b respectively, then the S.D. of $\frac{x-a}{b}$ is:

(a) a / b (b) – 1

(c) 1 (d) ab

Q.9 A student obtained the mean and standard deviation of 100 observations as 40 and 5.1 respectively. It was later discovered that he had wrongly copied down an observation as 50 instead of 40. The correct standard deviation is:

(a) 5 (b) 6

(c) 3 (d) 7

Q.10 For a moderately skewed distribution, quartile deviation and standard deviation are related by:

(a) S. D. = $\frac{2}{3}$ Q.D (b) S. D.= $\frac{3}{4}$ Q.D

(c) S. D.= $\frac{4}{3}$ Q.D (d) S. D.= $\frac{3}{2}$ Q.D

Q.11 If two samples of sizes 30 and 20 have means as 55 and 60 and variances as 16 and 25 respectively, then what would be the S. D. of the Combined sample size 50?

(a) 5.33 (b) 5. 17

(c) 5.06 (d) 5

Q.12 If all the observations are increased by 5, then

(a) SD would be increased by 5

(b) MD would be increased by 5

(c) QD would be increased by 5

(d) All the three would not be increased by 5

Q.13 What is value of mean deviation about mean from the number 5, 8, 6, 3 and 4?

(a) 5.20 (b) 7.20

(c) 1.44 (d) 2.23

Q.14 For the observation of 6, 4, 1, 6, 5, 10, 4, 8, the range is:

(a) 10 (b) 9

(c) 8 (d) None

Q.15 The variance of date: 3,4,5,8 is

(a) 4.5 (b) 3.5

(c) 5.5 (d) 6.5

Permutation & Combination (Test-02)

Q.1 The number of words that can be formed out of the letters of the word "ARTICLE" so that vowels occupy even place is:
(a) 36 (b) 144
(c) 574 (d) 754

Q.2 How many different words can be formed with the letters of the word "LIBERTY"
(a) 4050 (b) 5040
(c) 5400 (d) 4500

Q.3 If six times the number of permutations of 'n' items taken 3 at a time is equal to seven times the number of permutation of (n - 1) items taken 3 at a time, then the value of 'n' will be:
(a) 7 (b) 9
(c) 13 (d) 21

Q.4 There are 5 books on English, 4 Books of Tamil and 3 books on Hindi. In how many ways can these books be placed on a shelf if the books on the same subjects are to be together?
(a) 1,36,800 (b) 1,83,600
(c) 1,03,680 (d) 1.63,800

Q.5 5 Men and 4 Women to sit in a row in such a manner that the women always occupy the even places. The number of such arrangements will be:
(a) 126 (b) 1056
(c) 2080 (d) 2880

Q.6 The four digit numbers that can be formed out of the seven digits 1, 2, 3, 5, 7, 8, 9 such that no digit is repeated in any number and are greater than 3000 are:
(a) 120 (b) 480
(c) 600 (d) 840

Q.7 A student has three books on computer, three books on Economics, and five books on Commerce. If these books are to be arranged subject wise, then these can be placed on a shelf in the number of ways:
(a) 25290 (b) 25920
(c) 4230 (d) 4320

Q.8 How many numbers can be formed with the help of 2, 3, 4, 5, 6,1 which is not divisible by 5, given that it is a five digits no. and digits are no repeating?
(a) 600 (b) 400
(c) 1200 (d) 1400

Q.9 The number of numbers between 1,000 and 10,000, which can be formed by the digits 1,2,3,4,5,6 without repetition is:
(a) 720 (b) 180
(c) 360 (d) 540

Q.10 The number of ways in which 4 persons can occupy 9 vacant seats is:
(a) 6048 (b) 3024
(c) 1512 (d) 4536

Q.11 The number of words which can be formed by letters of the word 'ALLAHABAD' is:
(a) 7560 (b) 3780
(c) 30240 (d) 15120

Q.12 If 3 books on computer, 3 books on commerce, and 5 books on economics are arranged in such a way that the books of same subject and kept together, then the number of ways in which this can be done are:
(a) 4320 (b) 35820
(c) 35920 (d) 25920

Q.13 The number of words from the letters of the word BHARAT, in which B and H will never come together, is
(a) 360 (b) 240
(c) 120 (d) None

Q.14 The value of N in $\frac{1}{7!}+\frac{1}{8!}=\frac{N}{9!}$ is:
(a) 81 (b) 78
(c) 89 (d) 64

MEASURES OF DISPERSION (Test-02)

Q.1 If L_1 = highest observation and L_2 = smallest observation, then Coefficient of Range =

(a) $\frac{L_1 \times L_2}{L_1 / L_2} \times 100$ (b) $\frac{L_1 - L_2}{L_1 + L_2} \times 100$

(c) $\frac{L_1 + L_2}{L_1 - L_2} \times 100$ (d) $\frac{L_1 / L_2}{L_1 \times L_2} \times 100$

Q.2 The equation of, a line is 5x + 2y = 17. Mean deviation of y about mean is 5. Calculate mean deviation of x about mean.

(a) -2 (b) 2
(c) -4 (d) None

Q.3 If variance of x is 5, then find variance of (2 – 3x)

(a) 10 (b) 15
(c) 5 (d) -13

Q.4 $\frac{(Q_3 - Q_1)}{(Q_3 + Q_1)}$ is known as

(a) Coefficient of Range
(b) Coefficient of Q.D.
(c) Coefficient of S.D.
(d) Coefficient of M.D.

Q.5 If the S.D. of the 1st n natural Nos. is $\sqrt{30}$, Then the value of n is

(a) 19 (b) 20
(c) 21 (d) None

Q.6 If mean = 200 and variance = 80. Find coefficient of variation.

(a) 2.56 (b) 4.47
(c) 32 (d) 0.32

Q.7 Which of the following is affected by shifting of scale

(a) SD (b) MD
(c) QD (d) None

Q.8 Coefficient of variation is 80. Mean is 20. Find variance:

(a) 640 (b) 256
(c) 16 (d) 250

Q.9 Inter Quartile Range is _____ of Quartile Deviation.

(a) Half (b) Double
(c) Triple (d) Equal

Q.10 The sum of squares of deviation from mean of 10 observations is 250. Mean of the date is 10. Find the co-efficient of variation.

(a) 10 % (b) 25 %
(c) 50 % (d) 0 %

Q.11 If sum of squares of the values = 3390, N = 30 and standard deviation = 7, find out the mean.

(a) 113 (b) 210
(c) 8 (d) None

Q.12 If observations in a distribution are increased by 6, then the variance of the series will be _____.

(a) Increased (b) Decreased
(c) Unchanged (d) None

Q.13 If two variables x and y are related by 2x + 3y – 7 = 0 and the mean and mean deviation about mean of x are 1 and 0.3 respectively, then the co-efficient of mean deviation of about mean is:

(a) -5 (b) 4
(c) 12 (d) 50

Q.14 For a set of 100 observations, taking assumed mean as 4, the sum of the deviations is – 11 cm^2. The coefficient of variation is:

(a) 41. 13% (b) 42. 13%
(c) 40. 13% (d) None

Q.15 What is the coefficient of range for the following distribution?

CI:	10-19	20-29	30-39	40-49	50-59
F:	11	25	16	7	3

(a) 22 (b) 50
(c) 75.82 (d) 72.46

Answer Key – Permutation & Combination (Test-01)

1. b
2. c
3. a
4. a
5. c
6. b
7. a
8. b
9. b
10. b
11. c
12. c
13. a
14. c
15. c
16. b
17. b
18. c

Answer Key – Measures of Dispersion

(Test-01)

1. c	2. c
3. d	4. c
5. b	6. d
7. d	8. c
9. a	10. d
11. c	12. d
13. c	14. b
15. b	

Answer Key – Permutation & Combination
(Test-02)

1. b
2. b
3. d
4. c
5. d
6. c
7. b
8. a
9. c
10. b
11. a
12. d
13. b
14. a

Answer Key – Measures of Dispersion (Test-02)

1. b	2. b
3. b	4. b
5. a	6. b
7. d	8. b
9. b	10. c
11. c	12. c
13. c	14. a
15. d	