II CLASS – 12019

STATISTICS

TIME: 20 MINUTES
MARKS: 17

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

1. The group data is also called
   (A) Primary data (B) Secondary data (C) Raw data (D) Collected data

2. The midpoint of the group $5.5 - 7.5$ is
   (A) 6 (B) 6.5 (C) 7 (D) 13

3. The difference between the upper and lower class boundaries of a class is called.
   (A) Midpoint (B) Class interval (C) Class frequency (D) Class boundary

4. Average is easy to
   (A) Calculate (B) Read (C) Remember (D) Write

5. If $n = 10$ and $\overline{Y} = 20$ than ΣY is
   (A) 150 (B) 120 (C) 200 (D) 250

6. It is necessary to arrange the values in an array before finding
   (A) Arithmetic Mean (B) Mode (C) Median (D) Harmonic mean

7. Variance is always calculated from
   (A) Mean (B) Median (C) Geometric Mean (D) Mode

8. The lack of symmetry is called
   (A) Uniformity (B) Kurtosis (C) Skewness (D) Dispersion

9. The range of data 1,2,3,4,5 is
   (A) 1 (B) 5 (C) 4 (D) 3

10. Index No. has ....types.
    (A) Two (B) Three (C) Four (D) Five

11. The most suitable average for index number is
    (A) A.M (B) G.M (C) H.M (D) Median

12. $^5P_3$ is equal to
    (A) 40 (B) 50 (C) 60 (D) 70

13. Probability of any event lies between
    (A) -1 and +1 (B) 0 and +1 (C) -1 and 0 (D) 0 and 2

14. A random variable may be discrete or
    (A) Experimental (B) Functional (C) Given (D) Continuous

15. A discrete random variable only assumes the values which are
    (A) Countable (B) Uncountable (C) Infinite (D) None of these

16. 1-P is equal to
    (A) 1- q (B) p + q (C) p - q (D) q

17. In hyper-geometric distribution the trails are
    (A) Independent (B) Controlled (C) Allocated (D) Dependent

44 (Obj)-12019-60000 $\mathcal{D}$ SEQUENCE – 1

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) questions of the following   16
(1) Define descriptive statistics. (2) Define secondary data (3) Define harmonic mean
(4) Given data $\Sigma fu_i = -1$, $\Sigma f = 30$ and $u_i \frac{X_i - 98}{5}$ Find arithmetic mean of ' X '
(5) What are advantages of Median? (6) What are demerits of arithmetic mean?
(7) In moderately skewed distribution, mode =15 , median = 12 ,find its mean
(8) Define link relatives. (9) Define composite index number (10) Define un-weighted index number
(11) Find Paasche's index number if Laspeyre's = 118.8 and Fisher's = 115.8
(12) What are the uses of an index number.

QUESTION NO. 3 Write short answers any Eight (8) questions of the following   16
(1) What is " Tabulation " ? (2) Define " Class limits ".
(3) Define " Absolute measure " of dispersion". (4) Define " Relative measure of dispersion "
(5) Write down any " Two Properties of variance "
(6) If $Q_1 = 13.73$, $Q_3 = 38.29$,Compute Quartile deviation
(7) Calculate range of 13,3,7,15,17,5,23,27. (8) Define "sample Space". (9) Define " Simple event "
(10) Define " Mutually exclusive events". (11) Define " Equally likely events ".
(12) For two independent events A and B , if $P(A) = 0.25$, $P(B) = 0.40$ then find $P(A \cap B) = $?

QUESTION NO. 4 Write short answers any Six (6) questions of the following   12
(1) Differentiate between discrete random variable and continuous random variable.
(2) Give properties of a probability density function.
(3) Given $E(X^2) = 400$, $S.D(x) = 12$, then find $E(X)$
(4) Write down the formula for computing the area of a triangle of a continuous r.v.
(5) Define a distribution function
(6) Write down any two properties of binomial distribution.
(7) In a binomial distribution with $n = 5$, what is the value of 'P' if $P(x=0) = P(x=1)$
(8) Define a Hyper-geometric probability distribution.
(9) If $N = 40$, $n = -5$, $K = 4$, then find values of mean and variance of Hyper-geometric distribution

SECTION-II

Note: Attempt any Three (3) questions from this section $8 \times 3 = 24$

Q.5.(a) Given data on income ,Find mean income. Also find Q_1

X	1-10	11-20	21-30	31-40
f	13	10	5	2

(b) Find median and mode of data given in Q.5 (a)

Q.6.(a) Find the mean deviation about mean

Clsses	10-19	20-29	30-39	40-49	50-59
frequency	2	4	10	11	3

(b) The first three moments of a distribution about the value 2 are 1, 8 and 20.
Find (i) Variance (ii) Is the distribution positively or negatively skewed?

Q.7.(a) Given the following information . $\Sigma p_0 q_0 = 3600$, $\Sigma p_1 q_0 = 4300$. $\Sigma p_1 q_1 = 4890$ & $\Sigma p_0 q_1 = 4100$
Find Fisher price index number & Paache' index number
(b) If, A and B are mutually exclusive events and $P(A) = 0.4$, $P(B) = 0.5$ then ,
find $P(A \cup B)$ also find $P(\bar{A})$ & $P(\bar{B})$

Q.8.(a) A continuous random variable 'X' has probability density function given below
$f(x) = A(x+5)$ where $2 \leq x \leq 4$
$= 0$ other wise
Find (i) A (ii) $P(2 \leq x \leq 3)$
(b) Given the discrete probability distribution

X	0	1	2	3	4
P(x)	0.1	0.2	0.3	0.2	0.2

Compute mean , variance and Coefficient of variance

Q.9.(a) If X is a binomial random variable with $E(x) = 1.44$ and $S.D.(X) = 0.96$.
Find the parameters of the binomial distribution and $P(X=2)$
(b) In hyper-geometric distribution , $n = 4$, $K = 4$, $N = 12$, then make probability distribution of ' X '