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 in your answer book. Use marker or pen to fill the circles. Cutting or filling up two or more circles will result no mark.

Q.1	Questions	A	B	C	D
1.	The mean deviation is least if deviations are taken from:	Median	Mode	A.M.	G.M.
2.	Link relative is equal to:	$\frac{P_n}{P_0} \times 100$	$\frac{P_n}{P_{n-1}} \times 100$	$\frac{P_0}{P_n} \times 100$	$\frac{P_{n-1}}{P_n} \times 100$
3.	Index number for base period is taken as:	0	1	200	~~100~~
4.	$^4C_3 = $ _____ .	24	3	4	1
5.	If one event is not affected by the outcome of another event, the two events are said to be:	Dependent	Independent	Mutually Exclusive	Both A and B
6.	If X and Y are random variables, then $E(X-Y)$ is equal to:	$E(X)-E(Y)$	$E(X)+E(Y)$	$X-E(Y)$	$E(X)-Y$
7.	If "C" is a constant, then E(C)= _____ .	0	1	C^2	C
8.	The mean, median and mode of the binomial distribution $b(x;n,p)$ will be equal when:	$p=0.5$	$p<0.5$	$p>0.5$	None of these
9.	In a binomial, $n=20$, $P=\frac{3}{5}$, the mean of this distribution is:	60	12	0	8
10.	In a Hypergeometric distribution, the trials are:	Independent	Independent and dependent	Dependent	None of these
11.	If X and Y are independent, then $\text{var}(X-Y)$ is equal to:	$\text{var}(X)-\text{var}(Y)$	1	$\text{var}(X)+\text{var}(Y)$	0
12.	The positive square root of the variance of a distribution is called:	Mean Deviation	Standard Deviation	Range	Quartile Deviation
13.	The sum of deviations of all the values from their arithmetic mean is:	1	2	3	0
14.	The most frequent value in a data set is called:	Mode	Median	A.M.	H.M.
15.	It is the reciprocal of Arithmetic Mean of the reciprocal of all the values.	A.M.	G.M.	Mode	H.M.
16.	The sum of relative frequencies is always equal to:	0	2	1	3
17.	Hourly temperature recorded by Weather Bureau is an example of _____ data.	Discrete	Continuous	Qualitative	Secondary

Roll No. ☐☐☐☐☐ (To be filled in by the candidate

Inter (Part-I)-A-2021

Subjective

Time : 2:40 Hours

Marks : 68

Note :- Section I is compulsory. Attempt any **Three** Questions from Section II.

SECTION – I

2. **Write short answers to any Eight parts.** (8 x 2 = 16)

  i. Define the term "Variable".
  ii. What do you mean by data?
  iii. Find mean of 5, 3, 2, 7, 3.
  iv. Define Geometric Mean.
  v. What is Empirical Relationship between mean, median and mode?
  vi. If Mean = 5, Median = 6, then find Mode.
  vii. If $\sum X = 15$, $n = 3$, then find Mean.
  viii. Define Mode.
  ix. Find Laspeyre's index number if Fisher's=8, Paasche's=4
  x. What is composite index number?
  xi. Define Simple Index Number.
  xii. What is simple aggregative index?

3. **Write short answers to any Eight parts.** (8 x 2 = 16)

  i. Differentiate between class limits and class boundaries.
  ii. Write down the main steps in the construction of frequency distribution.
  iii. Write the types of dispersion.
  iv. If $Q_1 = 20$ and $Q_3 = 60$, find coefficient of quartile deviation.
  v. Define Average Deviation.
  vi. What is standard deviation?
  vii. If $\bar{X} = 10$ and $var(X) = 4$, find $\bar{Y}$ and $var(\bar{Y})$ when $Y = 2x - 1$
  viii. What is relative dispersion?
  ix. What is random experiment?
  x. What is permutation?
  xi. If A and B are independent events with $P(A) = 0.2$ and $P(B) = 0.6$, find $P(A \cap B)$
  xii. State the classical definition of Probability.

4. **Write short answers to any Six parts.** (6 x 2 = 12)

  i. Write down properties of Expectation.
  ii. If $E(X) = 4$, $E(Y) = 3.5$, then find $E(X - Y)$.
  iii. What is meant by variance of the Discrete Random Variable?
  iv. Define Probability Distribution.
  v. Define Bernoulli Trial.
  vi. Write down properties of Binomial experiment.
  vii. Define Binomial Probability Distribution.
  viii. A fair coin is tossed 4 times. Find the probabilities of obtaining various number of heads.
  ix. Write down properties of Hypergeometric Experiment.

SECTION – II

Each question carries 4 + 4 = 8 Marks

5. (a) The following data has been obtained from a frequency distribution of a continuous variable X after making the substitution: $U = \dfrac{X - 136.5}{6}$

Compute Harmonic Mean.

U	− 4	− 3	− 2	− 1	0	1	2	3
f	2	5	8	18	22	13	8	4

(b) Calculate Q_1 and Q_3 from the following data:
12, 10, 19, 20, 11, 27, 30, 28, 45, 70, 65, 60.

(Turn Over درج ذیل)