

**DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO**

Subject Code :

2 8

Test Booklet No. : 00294

## TEST BOOKLET

### STATISTICS

Time Allowed : 2 (Two) Hours

Full Marks : 200

### INSTRUCTIONS

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Subject Code shall be written legibly and correctly in the space provided on the Answer Sheet with black ball pen.
2. **Space provided for Series in the Answer Sheet is not applicable for Optional Subject. So the space shall be left blank.**
3. All questions carry equal marks. Your total marks will depend only on the number of correct responses marked by you in the Answer Sheet.
4. No candidate shall be admitted to the Examination Hall/Room 20 minutes after commencement of distribution of the paper. The Supervisor of the Examination Hall/Room will be the time-keeper and his/her decision in this regard is final.
5. No candidate shall leave the Examination Hall/Room without prior permission of the Supervisor/Invigilator. No candidate shall be permitted to hand over his/her Answer Sheet and leave the Examination Hall/Room before expiry of the full time allotted for each paper.
6. No Mobile Phone, Pager, etc., are allowed to be carried inside the Examination Hall/Room by the candidates. Any Mobile Phone, Pager, etc., found in possession of the candidate inside the Examination Hall/Room, even if on off mode, shall be liable for confiscation.
7. No candidate shall have in his/her possession inside the Examination Hall/Room any book, notebook or loose paper, except his/her Admission Certificate and other connected paper permitted by the Commission.
8. Complete silence must be observed in the Examination Hall/Room. No candidate shall copy from the paper of any other candidate, or permit his/her own paper to be copied, or give, or attempt to give, or obtain, or attempt to obtain irregular assistance of any kind.
9. After you have completed filling in all your responses on the Answer Sheet and the Examination has concluded, you should hand over to the Invigilator *only the Answer Sheet*. You are permitted to take away with you the Test Booklet.
10. Violation of any of the above Rules will render the candidate liable to expulsion from the Examination Hall/Room and disqualification from the Examination, and according to the nature and gravity of his/her offence, he/she may be debarred from future Examinations and Interviews conducted by the Commission for appointment to Government Service.
11. Smoking inside the Examination Hall/Room is strictly prohibited.
12. **This Test Booklet contains one sheet (two pages) for Rough Work at the end.**

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[ No. of Questions : 100 ]

SEAL

1. Statistical results are

- (A) absolutely correct
- (B) not true
- (C) true on the average
- (D) universally true

2. The approximate value of mode can be obtained from

- (A) ogive
- (B) histogram
- (C) pie diagram
- (D) frequency polygon

3. Which measure of dispersion ensures the highest degree of reliability?

- (A) Range
- (B) Mean deviation
- (C) Quartile deviation
- (D) Standard deviation

4. For a positively skewed distribution

- (A) Mean = Median = Mode
- (B) Mean > Median > Mode
- (C) Mean < Median < Mode
- (D) Mean  $\neq$  Mode  $\neq$  Median

5. If AM of two numbers is 6.5 and GM is 6, then the numbers are

- (A) 6 and 7
- (B) 9 and 4
- (C) 8 and 5
- (D) 10 and 3

6. A study based on complete enumeration is known as

- (A) sample survey
- (B) pilot survey
- (C) census survey
- (D) simple random sampling

7. Mean deviation is independent of

- (A) change of origin
- (B) change of scale
- (C) both (A) and (B)
- (D) none of origin and scale

8. Correlation coefficient always lies between

- (A) -1 and +1
- (B) 0 and 1
- (C) 5 and 10
- (D) -1 and 0

9. The geometric mean of two regression coefficients is
- coefficient of skewness
  - coefficient of correlation
  - coefficient of kurtosis
  - coefficient of standard deviation
10. The coordinate  $(\bar{x}, \bar{y})$  satisfies the lines of regression of
- $y$  on  $x$
  - $x$  on  $y$
  - both  $y$  on  $x$  and  $x$  on  $y$
  - $\bar{x}$  on  $\bar{y}$
11. If  $A$  and  $B$  are two mutually exclusive events, then
- $P(AB) = 0$
  - $P(AB) = P(A) \cdot P(B)$
  - $P(AB) = P(A) + P(B)$
  - $P(AB) = P(A) \cdot P\left(\frac{B}{A}\right)$
12. If  $P(E) = 1$ , then the event  $E$  is
- an impossible event
  - a certain event
  - a mutually exclusive event
  - an exhaustive event
13. If two unbiased dice are rolled, then the probability that the sum of numbers on the two dice is 9 is
- $\frac{2}{9}$
  - $\frac{3}{4}$
  - $\frac{1}{9}$
  - $\frac{3}{10}$
14. When  $a$  and  $c$  are constants, then  $V(ax + c)$  is
- $a^2V(x)$
  - $aV(x) + c$
  - $a^2V(x) + c$
  - $a^2V(x) + c^2$
15. If  $x$  is a random variable having p.d.f.  $f(x)$ , then  $E(x)$  is called
- arithmetic mean
  - geometric mean
  - harmonic mean
  - first quartile
16. When  $p = q$ , the binomial distribution will be
- Poisson distribution
  - symmetrical distribution
  - skewed distribution
  - normal distribution

17. For a Poisson distribution
- (A) Mean =  $2 \times$  Variance
  - (B) Mean = Standard deviation
  - (C) Mean > Variance
  - (D) Mean = Variance
18. The distribution possessing the memoryless property is
- (A) binomial distribution
  - (B) beta distribution
  - (C) exponential distribution
  - (D) Poisson distribution
19. Gamma distribution is
- (A) positively skewed
  - (B) negatively skewed
  - (C) symmetrical
  - (D) both positively and negatively skewed
20. The sum of two independent gamma variates is
- (A) beta distribution of first kind
  - (B) gamma variate
  - (C) beta distribution of second kind
  - (D) chi-square variate

21. If the population size is  $N$  and sample size is  $n$ , then the finite population correction is

- (A)  $\frac{n}{N}$
- (B)  $1 - \frac{1}{N}$
- (C)  $1 - \frac{n}{N}$
- (D)  $1 - \frac{1}{n}$

22. Simple random sampling is suitable when the population is

- (A) homogeneous
- (B) heterogeneous
- (C) finite
- (D) infinite

23. The number of possible samples of size  $n$  from a population of size  $N$  with replacement is

- (A)  $N^n$
- (B)  $n^N$
- (C)  $\infty$
- (D)  $N!$

24. In case of proportional allocation, the size of the sample from each stratum depends on

- (A) total population size
- (B) total sample size
- (C) size of the stratum
- (D) both population size and sample size

