Sig. of Supdt.....	KT-XII-1701 P-287 **Statistics (Part – II)** Paper – I Fresh/Reappear	Roll No.....

Fic. No.....

Fic. No.....

Time allowed: 3 Hrs **Statistics (Part – II)** **Marks: 75**

Paper – I

Fresh / Reappear

Note: There are three sections of the paper, A, B & C. Attempt Section – A on the same paper and return it to the Superintendent within the given time. No marks will be awarded for cutting, erasing or over writing. Mobile phone etc. are not allowed in the examination hall.

Time: 20 Mins **Section "A"** **Marks: 15**

Q.1 Write the correct option i.e. A, B, C or D in the empty box provided opposite each part.

i. The mathematical form of the probability distribution of the normal variable depends upon ..
A. μ B. δ C. μ and δ D. n and q

ii. The mean, median, mode for the normal distribution .....
A. mean = median = mean B. Mean>median> mode C Mean > median <mode D. None of these

iii. A population characteristic such as a population mean is called .....
A. A statistic B. A parameter C. A sample D. None of these

iv. In sampling from a large population with δ = 20, the standard error of the mean is found to be 2. What was the size of the sample in this situation?
A. 10 B. 20 C 30 D. 100

v. As compared to normal distribution, t-distribution is .....
A. Flatter B. More peaked C. Symmetric D. Negatively skewed

vi. If the average value of the estimator equals the true value of the parameter. The property is called
A. Efficiency B. Consistency C. Unbiasedness D. Sufficiency

vii. A 90% confidence interval for the population mean is of the form.....
A. $\overline{X} \pm 1.96\frac{\delta}{\sqrt{n}}$ B. $\overline{X} \pm 2.58\frac{\delta}{\sqrt{n}}$ C. $\overline{X} \pm 1.28\frac{\delta}{\sqrt{n}}$ D. $\overline{X} \pm 1.645\frac{\delta}{\sqrt{n}}$

viii. In the regression equation, the value that gives the amount by which Y changes for every unit in X is called the .....
A. Coefficient of correlation B. Slope C. Intercept D. None of these

ix. The co-efficient of correlation is the .....of the two regression coefficients.
A. Geometric mean B. Harmonic mean C. Arithmatic mean D. Median

x. Relationship between two categorical variables is called .....
A. Correlation B. Regression C. Association D. None of these

xi. Spearman's rank correlation coefficient / lies between .....
A. [0, 1] B. [0, ∞] C. [$-\infty$, ∞] D. [–1, 1]

xii. The smooth and regular movement is called .....
A. A secular trend B. Irregular movement C. Cyclical movement D. None of these

xiii. Given t he numbers 2, 6, 1, 5 a moving average of order 3 is given as .....
A. (3, 5) B. (4, 5) C. (3, 4) D. None of these

xiv. The person who is considered inventor of computer is .....
A. Blaise Pascal B. John Napier C. Charles Babbage D. Bill Gate

xv. One gigabyte (GB) is equal to .....
A. 1000MB B. 1000KB C. 1024MB D. 1024KB

Time: 2Hours

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Statistics (Part – II)

Paper – II

Fresh/Reappear

Mark: 25

Note: Attempt any TWO questions. Each question carries equal marks.

Q.1 Draw all possible sample of size 3 without replacement from a population having the observations 2,2,4,6,6,8,10. Find the mean of each sample and construct the sampling distribution of sample mean. Verify that (i) $\mu_{\bar{x}} = \mu$ (ii) $\delta^2_{\bar{x}} = \frac{\delta^2}{n} \cdot \frac{(N-n)}{(N-1)}$

Q.2 The number of accidents per day was studied for 144 days in city A and for 100 days in city B and the following information were obtained.

	City A	City B
No. of days	144	100
Mean no of accidents	4.5	5.4
Standard deviation	1.2	1.5

I. Estimate the difference between the mean accidents of two cities with 95% confidence.

ii. Test the hypothesis that $\mu_1 - \mu_2 = 2.1$.

Q.3 Fit (i) Straight line trend

(ii) Second degree parabola to the following data.

Years	1990	1991	1992	1993	1994	1995	1996	1997
Prices	80	90	69	59	87	64	83	92