STATISTICS PRACTICAL EXAMINATION

12 TH STANDARD   MAX.MARKS - 15   TIME : 3 HRS

Note: i) This Question paper is divided into two Parts each containing 5 questions.

ii) Students should answer **FOUR** questions only, selecting any **ONE** from each Section.

PART-I

SECTION-A (4 MARKS)

1. A Model Examination was conducted to XII Standard students in the subject of Statistics. A District Educational Officer wanted to analyze the Gender wise performance of the students using the marks secured by randomly selected boys and girls. Sample measures were calculated and the details are presented below:

Gender	Sample size	Sample Mean	Sample Standard deviation
Boys	100	50	4
Girls	150	51	5

   Test, at 5% level of significance, whether performance of the students differ significantly with respect to their gender.

2. A company gave an intensive training to its salesmen to increase the sales. A random sample of 10 salesmen was selected and the value (in lakhs of Rupees) of their sales per month, made before and after the training is recornded in the following table. Test whether ther is any increase in mean sales at 5% level of significance.

Salesman	1	2	3	4	5	6	7	8	9	10
Before	15	22	6	17	12	20	18	14	10	16
After	17	23	16	20	14	21	18	20	10	11

3. Two samples of sizes 9 and 8 give the sum of squares of deviations from their respective means as 160 inches square and 91 inches square respectively. Test the hypothesis that the variances of the two populations from which the samples are drawn are equal at 10% level of significance.

SECTION-B ($3\frac{1}{2}$ Marks)

4. Three different techniques namely medication, exercises and special diet are randomly assigned to (individuals diagnosed with high blood pressure) lower the blood pressure. After four weeks the reduction in each person's blood pressure is recorded. Test at 5% level, whether there is significant difference in mean reduction of blood pressure among the three techniques.

Medication	10	12	9	15	13
Exercise	6	8	3	0	2
Diet	5	9	12	8	4

   Carry out the one-way ANOVA.

5. A random sample of 5 college students is selected and their marks in Tamil and English are found to be:

Tamil	85	60	73	40	90
English	93	75	65	50	80

   Calculate Spearman's rank correlation coefficient.

PART-II

SECTION-A (4 Marks)

6. Out of 1800 candidates appeared for a competitive examination 625 were successful; 300 had attended a coaching class and of these 180 came out successful. Test for the association of attributes attending the coaching class and success in the examination.

7. Using the method of least square, calculate the regression equation of X on Y and Y on X from the following data and estimate X where Y = 16.

X	10	12	13	17	18
Y	5	6	7	9	13

Also determine the value of correlation coefficient.

8. Calculate the consumer price index number for 2015 on the basis of 2000 from the following data by using (i) the Aggregate expenditure method (ii) the family budget (or) weighted relatives method.

Commodity	Quantity	Price	
		2000	2015
Wheat	20	15	20
Rice	8	20	24
Ghee	2	160	200
Sugar	4	40	40

SECTION-B ($3\dfrac{1}{2}$ Marks)

9. The following table gives quarterly expenditure over a number of years. Obtain seasonal correction for the data.

Season \ Year	2000	2001	2002	2003
I	78	84	92	100
II	62	64	70	81
III	56	61	63	72
IV	71	82	83	96

10. A life Table was constructed for a cohort. The following is a section of the table, wherein some of the entries are not available. Find the estimates of missing values and complete the Life Table.

Age (in years)	$l(x)$	$d(x)$	$p(x)$	$q(x)$	$L(x)$	$T(x)$	$e^0(x)$
40	10,645	-	-	-	-	1,93,820	-
41	10,543	169	-	-	-	-	-

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