SET-III

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 study was conducted to investigate the interest of people living in cities towards self-employment. Among randomly selected 500 persons from City-I, 400 persons were found to be self-employed. From City-2, 800 persons were selected randomly and among them 600 persons are self-employed. Do the data indicate that the two cities are significantly different with respect to prevalence of self-employment among the persons? Choose the level of significance as $\alpha = 0.5$

2. The following table gives the performance of 500 students classified according to age in a computer test. Test whether the attributes age and performance are independent at 5% of significance.

Performance	Below	21-30	Above 30	Total
Average	138	83	64	285
Good	64	67	84	215
Total	202	150	148	500

3. A company producing LED bulbs finds that mean life span of the population of its bulbs is 2000 hours with a standard derivation of 150 hours. A sample of 100 bulbs randomly chosen is found to have the mean life span of 1950 hours. Test, at 5% level of significance whether the mean life span of the bulbs is significantly different from 2000 hours.

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

4. A test was given to five students taken at random from XII class of three schools of a town. The individual scores are

School I	9	7	6	5	8
School II	7	4	5	4	5
School III	6	5	6	7	6

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.

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PART-II

SECTION-A (4 Marks)

6. Compute the trends by the method of moving averages, assuming that 4 year cycle is present in the following series.

Year	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Annual value	154.0	140.5	147.0	148.5	142.9	142.1	136.6	142.7	145.7	145.1	137.8

7. Construct weighted aggregate index numbers of price from the following data by applying (i) Fisher's ideal method (ii) Marshall-Edgeworth method.

Commodity	2016		2017	
	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

8. The following are the marks scored by 7 students in two tests in a subject. Calculate coefficient of correlation from the following data and interpret.

Marks in test-1 (x)	12	9	8	10	11	13	7
Marks in test-2 (y)	14	8	6	9	11	12	3

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

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

Year / Season	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. The following are the information about the number of persons who are affected by Diabetes and Lung Cancer and the number of persons died due to each cause of death during a calendar year in two different districts:

Cause of Death	District A		District B	
	No. of persons Affected	No. of persons Died	No. of persons Affected	No. of persons Died
Diabetes	20,000	325	22,000	400
Lung Cancer	19,500	300	21,225	380

Find the Illness specific death rates for the two districts. Also compare health conditions of both the districts with reference to these two causes of death. Assume that a person affected by Diabetes is not affected by Lund Cancer and vice-versa.

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