



DOON UNIVERSITY, DEHRADUN
Semester Final Examination, odd Semester, 2015
School of social science
M.A. (Economics) 1st Sem
Course: SSE 512-statistics 1st

Time Allowed: 3Hours

Maximum Marks: 50

Q.1:- A) Define moments. How are they useful in analysing the different aspect of frequency distribution. (5 marks)

B) indicate whether the following statements are true or false (5 marks)

1. There is no limit to the value of r .
2. If r is negative both variables are decreasing.
3. Correlation always signifies a cause and effect relationship between the variables.
4. The rank correlation coefficient was developed by Spearman.
5. If the value of X variable are 1, 2, 3, 4, 5 and those of Y 4, 6, 8, 10, 12 then the Karl Pearson's and rank method would give the same answer.

Or

Q.1:- family income X and % expenditure on food Y in case of 100 families gave the following frequency distribution. (10 marks)

% expenditure on food	Family Income (rupees)				
	200-300	300-400	400-500	500-600	600-700
20-25	-	-	-	3	7
25-30	-	4	9	4	3
30-35	7	6	12	5	-
35-40	3	10	19	8	-

Q.2:- the following Data about the sale and advertisement expenditure of firm is given below- (10 marks)

	Sales	Advertisement
Mean	40	6
S.D.	10	1.5

Correlation coefficient $r = .9$

- Estimate the likely sale for proposed advertisement expenditure of rs.10 cr.
- What should be the advertisement expenditure if the firm proposes a sales target of 60 cr rupees.

Or

Q.2:- below are given figure of production of a fertilizer factory (10 marks)

Year	2002	2003	2004	2005	2006	2007	2008
production	70	75	90	98	84	91	100

- Fit a straight line trend by the method of least square and tabulate the trend value.
- Estimate the trend. What component of time series is thus left over.
- What is the monthly increase in production of fertilizer?

Q.3:- attempt following (10 marks)

- What is the normal distribution. Point out its important properties.
- Fit a binomial distribution of the following

X	0	1	2	3	4
f	28	62	46	10	4

Or

Q.3:-A) Explain type 1 and type 2 error and discuss about the steps involved in testing of hypothesis. (5 marks)

B) A company produce two type of bulb A and B, 200 bulb each type and it was found that type A has mean life of 2560 hours and S.D. 90 hours. Whereas type B has 2650 hours of mean life with S.d. 75 hours. Is there any significance difference between the average life of two types of bulbs. (5 marks)

Q.4:- A) the following grades are given to a class of 100 students. (5 marks)

Grade	A	B	C	D	E
Frequency	14	18	32	20	16

Test the hypothesis, at the .05 level that the distribution of grade is uniform.

B) In an anti Malarian campaign in a certain area, quinine was administered to 812 person out of total population of fever cases shown below:

treatment	fever	nonfever	total
Quinine	20	792	812
No quinine	220	2216	2463
total	240	3008	3248

Discuss the usefulness of quinine in checking malaria.

Or

Q.4:- what are the components of time series. Bring out the significance of moving average analysis in time series and point out its limitations. (10 marks)

Q.5:- perform two way Anova at given Data.

(10 marks)

Plot of land	Treatment			
	a	b	c	D
1	38	40	41	39
2	45	42	49	36
3	40	38	42	42

Or

Q.5:- What it is meant when it is said that the smaller the standard error of estimate the better the regression line 'fit' the data? How is the standard error of the estimate related to the possible usefulness of a regression line? (10 marks)