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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

First Semester - Master of Business Administration (MBA)

Make-up Examination; Feb - 2017

Quantitative Technique - I

Time: 3 hrs *Max. Marks: 100*

Note: Answer all **FOUR** full questions from **PART - A** and **PART - B** (Case study) is compulsory.

PART - A

1 a. Define statistics. Explain its characteristics. 10

b. What is Data? Explain the methods of classification of data. 10

OR

2 a. Prepare a bivariate frequency table distributing the following data for 20 students. Also prepare a marginal frequency table for Marks in Maths and Stats classify X into intervals of 10-15, 5-20.,,,, and Y into 20-22, 22-24…. 10

Marks in Maths (X)	10	21	20	11	15	14	22	12	13	19
Marks in Stats (Y)	26	22	22	27	23	23	22	27	26	23

Marks in Maths (X)	23	22	22	11	12	18	24	14	16	18
Marks in Stats (Y)	24	24	23	22	20	22	22	24	20	24

b. Tabulate the following:

Out of the total number of 10,000 candidates applied for job in Govt. Dept. is 6854 were males, 3,146 were graduates and other non-graduates .The number of candidates and other non-graduates. The number of candidates with some experience was 2623 of whom 1860 were males. The number was 2623 of whom 1860 were males. The number of male graduates was 2012. The number of experienced were 1093 that includes 323 females. 10

3 a. Explain different types of averages. 10

b. Calculate the geometric Mean and Harmonic mean from the following: 10

x_i	0-25	25-50	50-75	75-100	100-125	125-150
f_i	7	12	11	05	06	03

OR

4 a. i) The mean marks in statistics of 100 students in a class were 72%. The mean mark of boys was 75%., while this number was 70%. Find out the mean marks of girls in the class.

ii) The mean salary paid to 1500 employees of an organization was found to be `12,500. Later on, after disbursement of salary, it was discovered that the salary of two employees was wrongly entered as `15,760 and `9,590 Their correct salaries were 17,760 and 8,590. Calculate correct mean. 10

Contd….2

b. Find the missing frequencies

x_i	0	1	2	3	4	5	= 200
f_i	46	X	Y	25	10	5	

10

$\overline{X} = 1.46$

5 a. Calculate mean Absolute Deviation and its coefficient from the following data.

Year	Sales	
	Product A	Product B
1996	23	36
1997	41	39
1998	29	36
1999	53	31
2000	38	47

10

b. A study of 100engineering companies gives following information. Calculate standard Deviation of profit earned.

10

Profit	0-10	10-20	20-30	30-40	40-50	50-60
No. of Companies	8	12	20	30	20	10

OR

6 a. Explain the concept of skewness. 10

b. Data of rejected item during a production process is as follows:

No. of Rejects	21-25	26-30	31-35	36-40	41-45	46-50	51-55
No. of operation	5	15	28	42	15	12	3

10

Calculate the Karl Pearsons coefficient of skewness.

7 a. What is correlation Analysis? Explain the types of correlation with examples. 10

b. The following data relate to age of employee and no. of days they reported sick in a month is given. Calculate the value of Karl Pearson's coefficient of correlation 'r' and interpret it.

10

Age	30	32	35	40	48	50	52	55	57	61
Sick days	1	0	2	5	2	4	6	5	7	8

OR

8 a. Calculate the Laspeyer's, Paasche's and Fisher's Index numbers from the following:

Item	1998		1999	
	Price	Quantity	Price	Quantity
A	5	25	6	30
B	3	8	4	10
C	2	10	3	8
D	10	4	3	5

10

Contd….3

b. Production values for a product are given below. Compute 3 yearly Morning Average and also determine the fund values. 10

Year	1995	1996	'97	'98	'99	2000	2001	2002	2003	2004
Production	21	22	23	25	24	22	25	26	27	26

PART – B (Compulsory)

9. **Case Study:**

Answer all the questions:

Following are marks in maths and stats of a students

Maths	93	85	90	75	86
Stats	59	67	70	62	60

20

a) Find Regression equations maths on stats and stats on maths

b) Find most likely value of maths when stats is 70 and most likely value of stats when maths is 65

c) Find coefficient of Correlation.

d) Find probable Error and confidence interval

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