15

VCD 18/02/17 FYBFM SEM I - ATKT BS MARKS 75 2HRS30MIN Basicstatistics (old)

Note: - 1) All questions are compulsory and carry equal marks.
2) Figures to right indicate full marks to corresponding sub question.
3) Use of simple calculator is allowed.

8 **Q. 1. A) Fill in the blanks.** (8)

1. Quartile deviation is also called _____.
2. Coefficient of correlation lies between _____.
3. Coefficient of rank correlation is named after _____.
4. _____ price Index uses base year quantities.
5. Formula for Weighted Average relative Index number is _____.

8 **B) Match the following.** (5)

A	B
a) Weighted Arithmetic mean	1) Simplest measure of dispersion
b) Mode	2) Divide the data in 10 equal parts
c) Deciles	3) Used in finding death rate
d) Range	4) Positional average
e) Median	5) Value of greatest frequency

C) State whether true or false.

8 1. The number of observation lying in any class interval is called frequency.
2. Standard deviation is square root of Variance.
7 3. Quartile divides data in three equal parts.
4. Statistics studies only Quantitative data.
5. r = 0 means , absence of co-relation.

15 **Q. 2 A)** Calculate the standard deviation and coefficient of variation for the following data. (8)

Profit in Rupees	300-400	400-500	500-600	600-700	700-800
Number of vendors	2	3	8	4	3

B) Draw frequency polygon for the following data and locate Median. (7)

Age on last birthday	15-20	20-25	25-30	30-35	35-40
Number of person	15	20	35	20	10

OR

Q.2 P) Find two regression lines for the following data. (8)

X	9	7	8	4	7	5
Y	36	25	33	15	28	19

Q) Calculate the coefficient of co relation from following data. (7)

X	3	4	5	6	7	8
Y	8	6	4	9	3	10

Q. 3 A) Find Fisher's and Dorbish-Bowley's index number for the given data. (8)

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	9	10	7	10
B	8	40	3	25
C	7	40	6	40
D	6	30	4	30

B) Using 5 yearly moving average find trend line. Also plot the original data and tren line on the same graph.

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cost	100	110	120	150	125	120	118	110	140

OR

Q.3 **P)** Find the missing price if Laspeyre's price index number is equal to Paasche's pric index number for the given data.

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	2	5	4	2
B	3	2	-	4

Q) Fit a straight line trend using Least Square method for following data.

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Cost	15	17	20	25	30	31	30	32	34

Q.4 **A)** Retailer buys certain items for Rs. 20/- and sales it for Rs. 50/- a case. The item is Worthless after the first day. The probability distribution for the demand is given b Find the number of cases he should buy so as to maximize his profit.

Daily Demand	10	11	12	
Probability	0.15	0.20	0.40	0

B) An unbiased coin is tossed for 4 times. Find the probability of getting
i) 4 heads and ii) at least 3 Tails.

OR

Q.4 **P)** Mr. Kunal has to travel to examination hall. He just missed his bus near his house. is 8:45 am now and the examination starts at 9:00 am. He has three options, he can his bike, he can walk or he can drive his car to the campus. If he walks, there is a 0 chance he will get to his test in 30 minutes and 0.2 chance that he will get there in minutes. If he rides his bike he will get to the test in 25 minutes with probability 0. minutes with probability 0.4 and there is 0.1 chance of a flat tire causing him to tak minutes. IF he drives his car to the examination hall, he will take 15 minutes to get but time needed to park is 10 minutes with probability 0.3, 15 minutes probability 20 minutes probability 0.2 . Assuming that Mr Kunal wants to minimize his expect time getting to his test, draw decision tree and determine his best option.

Q) Find Mean and Variance for the given probability distribution.

X	2	4	6	8	10
Probability	0.3	0.25	0.2	0.15	0.1

Q.5 **A)** Explain the importance of statistics.
B) Write merits and demerits of Quartile Deviation.

OR

Q.5 **P)** Write short note on any three of the following.
i. Cost of living index ii. Method of measuring trend iii. Scatter diagram
iv. Function of statistics v. Expected Monitory Value(EMV)