291122   STATISTIC
VCD FYBMS SATS SEM I REGULAR EXAM 75 MARKS 2¹ᐟ² HOURS

1. All question are Compulsory
2.In Question 1 attempt both the sub-part A and B.
3. Figure to the right indicate full marks.
4.Use of non-programmable calculator is allowed.
5.Graph papers will be provided on request .

Q.1) Attempt Both Sub-part (A) and(B):

A) Fill in the blank with correct alternative (Answer any eight)   (8)

1.When the data is classified with reference to time it is called _____ classification.
a) Quantitative   b)Geographical   C) Chronological   d) None of these

2. When two or more characteristics are to be represented simultaneously_____ bar diagram is used.
a) Sub-divided b) Simple c) Multiple d) Percentage

3. If a fair coin is toss which of the following statement is false?
a)Head and tail are mutually exclusive outcomes
b)Head and tail are equally likely outcomes
c)Head and tail are dependent outcomes
d) Head and tail are exhaustive outcomes

4.Which of the following are not particulars of useful table?
a) Title b) Caption, Stub ,Footnote c)Frequency density d) Source

5.The difference between lower and upper limit of a class is called _____.
(a) Class mark (b) length of class interval (c) Class limit   (d) Mid-point of a class

6.The Coefficient of Correlation always lies between.
(a) 0 and 1   (b) -1 and 1   (c) -1   (d)None of these

7.The requirement of good measure of dispersion should be _____.
a) Rigidly defined   b) Based on all observation
c) Capable of further algebraic treatment   d)All of the above

8.$P(A)=$
a) $1+P(\bar{A})$ b) $1+P(A)$ c) $1-P(\bar{A})$ d) $P(\bar{A})$

9._____ variation occur due to weather or customs.
a) cyclic b) Irregular c) Seasonal d) None of these

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10.Maximum criterion is a decision making under _____
a) Risk b) Uncertainty c) certainty d) none of these .

B) State whether the following statement are true or False (Answer any 7) (7)

1. Quartile deviation is an obsolute measure of dispersion.
2. If the correlation coefficient is zero then the association between the two variable is perfect positive
3. $r = \sqrt{bxy \cdot byx}$
4. There are four components of time series.
5. If events A and B are exhaustive event then A∪B is a null set.
6. A random variable which can take all possible value over an interval is called a discrete random variable.
7. There are always two lines of regression for a paired set of data .
8. Collection ,Presentation ,Analysis and interpretation of data are the four component of Statistic.
9. If the variable are independent then they are correlated .
10. Future trend value can be estimated with the help of straight line trend.

Q2.A) Yields of grains in quintal in three consecutive year is given below . (8)

Year	Rice	Wheat	Jowar
2002	37	28	35
2003	15	45	90
2004	18	60	42

Represent the above information by percentage bar diagram.

B) The following are the marks of 3-student in 4-subject,the weight of the subject are given . (7)
Decide which of the three student is the best

Student	Marks			
	A	B	C	D
Amar	28	30	40	20
Akbar	35	25	20	15
Anthony	30	35	30	20
Weight	4	3	2	1

(OR)

C) Draw 'less than' cumulative frequency curve for the following data. (8)

Wages	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No of workers	1	3	11	21	43	32	9

Hence find (i) 2-quartiles (ii) No of worker having between 75 and 95.

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D) The following table show frequency distribution of body weight (in gms) of fish in pound is given below: **(7)**

Weight(in gms)	200-201	201-202	202-203	203-204	204-205	205-206
No of fish	12	26	20	9	2	1

Find modal body weight of fish in a pond.

Q3.A) Compute lower and upper quartiles and hence find the quartile deviation and **(8)** Coefficient of quartiles deviation for the following frequency distribution .

No of e-transaction per day	0	1	2	3	4	5	6	7
No of day	10	35	45	95	64	32	10	9

B) Calculate Mean Deviation from mean and its Co-efficient for the following data. **(7)**

Age	20-22	22-24	24-26	26-28	28-30	30-32	32-34
No of employees	70	90	110	140	130	80	80

(OR)

C) Find standard deviation for the following data: **(8)**

class interval	0-10	10-20	20-30	30-40	40-50
Frequency	11	15	25	12	7

D) There are 2-groups of children having 50 and 70 children respectively .the arithmetic mean of **(7)** Weight of children in 2-groups are 30kgs and 40kgs with standard deviation 16 kgs and 5kgs respectively. Find the combined mean and standard deviation of entire group containing 120 children.

Q4.A) Fit a trend line by the method of least squares and estimate the trend for the year 2009. **(8)**

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Export in lakhs	8	10	12	11	13	15	14	17	17

4B) For the following data ,find Price Index Number Using simple Aggregate Method. **(7)**

Commodity	P	Q	R	S	T
Price in1995	10	25	14	20	30
Price in 2000	32	40	20	45	70

(OR)

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C)Calculate Laspeyre's and Paasche's ,Fisher's Index number . (8)

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	4	5	15	20
B	8	12	20	18
C	6	8	25	20
D	14	12	10	10

D) Calculate Kelley's Index Number from the following data. (7)

Commodity	Price in Rs. Per Unit		Quantity
	1995	2000	
A	20	30	76
B	45	40	120
C	60	70	40
D	65	60	35

Q.5)A) Calculate EVPI for the following (8)

Act	Payoff in Rs '000'		
	High	Medium	Low
A1	60	25	-10
A2	70	30	-5
A3	30	20	5
Probability	0.3	0.4	0.3

B) The Probability distribution function (pdf) of a discrete random variable X , (7)

obtain $P(x>2)$,$P(x<1)$,$P(X= 2$ or $3)$

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X	-2	-1	0	1	2	3
P(X)	0.1	0.2	0.2	0.3	0.15	0.05

(OR)

C) Attempt (Any three):   (15)

i) Distinguish between primary and secondary data.

(ii) Merit and demerits of Median.

(iii)Describe the Component of Decision-making

(iv) What are the limitation of index number .

(v) What are the function of statistics