Seat No.: GUJARAT TECHNOLOGI					LOGIC	Enrolment No			
Su Su	bject bject	MAM Code: 412 Name: Bi	- SEMEST 20503 usiness St	EK–II • E2 atistics	XAMINATI	ION – SUN	<b>Date: 2</b> 4	14 1-06-2014	
Ti Ins	me: 1	0:30 am -	01:30 pm	l			Total N	Iarks: 70	
	1. 2. 3.	Attempt al Make suita Figures to	l questions. able assump the right ind	tions where dicate full n	ever necessai narks.	·y.			
Q.1	(a) (b)	<ul> <li>(a) What are application of statistics in Business and Economics?</li> <li>(b) Find correlation coefficient for the following data: <ul> <li>X</li> <li>44</li> <li>46</li> <li>46</li> <li>48</li> <li>52</li> <li>54</li> <li>56</li> <li>60</li> <li>60</li> <li>Y</li> <li>36</li> <li>40</li> <li>42</li> <li>44</li> <li>46</li> <li>48</li> <li>50</li> <li>52</li> </ul></li></ul>						0' 0'	
Q.2	<b>(a)</b>	Blood serum cholesterol levels of 10 persons are under: 240, 260, 290, 245, 255, 288, 272, 263, 277, 251							
	(b)	Calculate standard deviation and Mean for this data. Find the regression line equation for the following data: $\hline X \ 50 \ 60 \ 50 \ 60 \ 80 \ 50 \ 80 \ 40 \ 70 \ Y \ 30 \ 60 \ 40 \ 50 \ 60 \ 30 \ 70 \ 50 \ 60 \ CB$							
	(b) Explain following sampling methods: (1) Stratified Sampling (2) Lottery Method							0	
Q.3	<b>(a)</b>	Define following terms: 0							
	(b)	<ul> <li>(1) Range (2) Event (3) Mutually Exclusive Events (4) Union of two events.</li> <li>Find expected value and variance for the following data: 07</li> </ul>							
		X	0	1	2	3	4	5	
		P(X)	0.15	0.20	0.10	0.05	0.30	0.20	
					OR				
Q.3	(a)	A bag contains 3 black, 4 white and 5 red balls. A ball is drawn at random. <b>07</b> What is the probability that it is a (1) black ball (2) white ball (3) red ball							
<ul><li>(b) The mean weight of 500 male students in a certain college is 1511 deviation is 15 lb. Assuming the weights are normally distrib</li></ul>							ge is 1511b a y distribute	nd standard <b>0</b> d find how	

**Q.4** (a) Find Range, Coefficient of Range,  $Q_1, Q_3$ , and median of the following data: 07 25, 45, 46, 28, 35, 40, 45, 78,65,56,12,25,56,57,64

many students weight (a) between 120 and 155 lb. (b) more than 185 lb.

 $(0 \le Z \le 2.06) = 0.4803, (0 \le Z \le 0.27) = 0.1064, (0 \le Z \le 2.27) = 0.4884$ 

(b) Find IQR, coefficient of variation, Quartile deviation for the following data: 07 120, 232,134,156,167,145,176,187,123,223

## OR

Q.4 (a) Explain uniform probability Distribution

07

- (a) What is the mean life time of the device?
- (b) What is the probability that the device will fail in the first 25 hours of operation?
- (c) What is the probability that the device will operate 100 or more hours before failure?

Q.5	(a)	If $P(A) = 0.25$ , $P(B) = 0.15$ and $P(AUB) = 0.30$ find the values of	07
		(a) $P(A \cap B)$ (b) $P(A \cap B')$ (c) $P(A' \cap B)$ & $P(A' \cap B')$	

- (b) Explain the following terms:
  - (a) Cluster sampling
  - (b) Quota sampling
  - (c) Systematic sampling

## OR Q.5 (a) Find Mean and Median for the following data:

Marks 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45 45-50 7 24 26 10  $f_i$ 15 31 42 30 15

(b) Find standard deviation for the following data:

X <sub>i</sub>	45	50	55	60	65	70	75	80
$\mathbf{f}_{i}$	3	5	8	7	9	7	4	7

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