GUJARAT TECHNOLOGICAL UNIVERSITY BPLAN- SEMESTER- 1 EXAMINATION – SUMMER 2016

Su Su Tii Ins	bject bject me: 0 tructio	Code: 10 Name: 8 2.30PM- ns:	015504 Statisti 04.30F	cal and M	Quanti	tative	Meth	ods	s in Pla	Date: nning- Total	03/06/2 I Marks	016 : 50	
	1. 2. 3.	Attempt : Make sui Figures te	all quest table ass o the rig	ions. sumptions ht indicate	whereve full mar	r neces ks.	sary.						
Q.1	(a)	Fill in the blanks 0 1) The total value of probability is always 0 2) The values of variance can be, or 0 3) The mean is ration of 0 4) The probability of p(A∩B) is 0 5) The binominal probability distribution given by											
	(b)	 Short questions What is skewness? What is kurtosis? What is open end question? How data are present in statistic? What is poission distribution? 										05	
Q.2	(a) (b)	How questionnaire design for collection of data? 05 List out type of sample and Explain simple random sampling and stratified 05 sampling.										05 05	
	(b)	OR What is statistical data? How statistical data are collect 05											
Q.3	(a)	The data of CO emission (in tons) from a commercial zone is classified as under. Calculate mean and variance of daily CO emissions.										05	
		Class	5-	9 9-1	$\frac{3}{13}$	-17	17-21	2	1-25	25-29	29-33		
	 (b) Average house hold income per year and its standard deviation as under. Find out which city has less income disparity? 								n in two o	cities are	05		
		$\begin{array}{c c c c c c c c c c c c c c c c c c c $				1 (KS.)							
		Y 3,60,000 37,500											
0.3	(a)	OR Find out co efficient variance from the following data: 05											
C	~ /	Marks	0-10	10-20	20-30	30-4	0 40-	50	50-60	60-70	70-80		
		No of	12	18	35	42	5	0	45	20	8		
	(b)	Explain Mean, Arithmetic mean and Geometric mean.										05	
Q.4	(a)	Explain v	ariation	in Time se	eries							05	
	(b)	Explain T	rend and	alysis								05	
		~ • •		0 -		OR	. .						
Q.4	(a)	Consider the data for the number of ships loaded at City-A between 1988 and 1995. Find the equation that describe the secular trend of loading.								05			

Year	1988	1989	1990	1991	1992	1993	1994	1995
Ship	98	105	116	119	135	156	177	208
loaded								

- (b) Income distribution of individuals in city zone are observed as x = 500 and $\sigma = 100$ Rs. Find the probability that an individual selected randomly has an income between Rs. 550-650. 05
- Q.5 (a) Five defective bolts are accidentally mixed with twenty good one. If four bolts 05 are drawn at random from this lot find the probability distribution of the number of defective bolts.
 - (b) Find the probability of getting a Queen or a spade card from playing card pack. 05 OR
- Q.5 (a) An urn contains 5 white and 8 black balls. Two successive drawing of three balls at a time are made such that the balls are not replace before the second draw. Find the probability that the first draw gives 3 white balls and second gives 3 black balls?
 - (b) A bus on particular route departs its original terminus on time with probability of 0.77. The bus arrives at its destination on time (irrespective of departure time) with probability of 0.81. Also, the probability that a bus arrives on time, given that departs on time is 0.91. Find the probability that a bus depart on time given that it arrives on time.

VII. AREA UNDER STANDARD NORMAL CURVE



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-	0.0	.0000.	.0040	:0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
	0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0536	.0675	.0714	.0753
	0.2	.0703	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
	0,3	.1179	.1217	.1255	.1293	.1331	.1368	,1406	.1443	.1480*	.1517
	0.4	.1554	.1519 .	.1628	.1664	,1700	.1736	.1772	.1808	.1844	.1879
	0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2100	.2224
	ò 6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2540
	0.7	.2580	.2611	.2642	.2973	.3704	-2734	.2764	.2794	.2823	.2852
	0.8	.2881	.2910	.2939	,2967	.2995	.3023	.3051	.3078	.3106	,3133
1	0.9	.3159	.3186	.3212	.3238	.3264	.3239	.3315	.3340	.3365	.3339
	1.0	.3413	.3438	.3461	.3465	.3508	.3531	.3554	.3577	.3599	.3621
	1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	,3790	.3310	OCRE.
	1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
	1.3.	.4032	.4049	.4066	,4082	.4099	.4115	.4:31	.4147	.4162	.4177
	. 1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
	1.5	.4332	.4345	.4357	,4370	.4382	.4394	.4406	.4418	.4429	.4441
	1.6	4452	.4463	,4474	.4484	,4695	.4505	.4515	.4525	.4535	.4545
	1.7 '	,4554	.4564	.4573	.4582	.4591	.4599	.4603	.4616	.4625	.4633
4	1,8	.4641	,4649	,4656	.4664	.467,1	.4678	.4686	.4693	.4699	,4706
	• 1.9	.4713	.4719	.4726	.4732	,4738	.4744	.4750	.4756	.4761	.4767
	· 2.0	.4772	.4778	.4783	.4788	.4793_	4798	.4803	.4805	.4812	.4817
	2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	4854	4857
	2.2	.4861	.4864	.4868	,4871	.4875	.4878	.4881	.4884	.4587	,4890
	2.3	.4893	.4896	.4898	,4901	.4904	.4906	.4909	.4911.	.4913	.4916
	2.4	.4918	.4920	.4922	,4925	.4927	.4929	.4931	.4932	.4934	.4936
	2.5	.4938	.4940	.4941	.4943	.4945	.4946	4940	.4945	.4951	.4902
	2.6	.4953	.4955	.4956	.4957	,4959	.4960	.4961	.4962	,4963	.4964
	2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
	2.8	.1974	.4975	.4976	.4977	.4977	.1978	4076	.4979	.4980	.4981
	2.0	4921	40.82	1082	4983	.4984	. 1984	4985	.46055	41186	.4986
		.1001	1007	1007	4988	1058	491	4050		.4990	.1990

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