	Question Bank(Unit III,IV,V)												
1	Find Spearman's	Rank C	Correlat	tion coe	fficient	•							
	Income (in thous	sands)	40	80	50	70	60	30	20)			
	Expenditure(in		30	40	30	60	40	20	10)			
	thousands)												
2	Describe Scatter	diagran	n metho	od to fir	nd corre	lation.							
	The two lines of a	regressi	on are	2y+4x=	=80 and	6x+5y	/=160	•					
	Find (i) Mean val	ues of z	x and y										
	(ii) Identify	the regi	ression	equatio	on of x o	on y							
3	For the follow	ing dat	a calcu	late:									
	(i) Laspeyre's (ii) Paasche's and (iii) Fischer's Index number.												
	Commodity		Base `	Year		C	urren	t Year					
		Pri	ce	Quant	tity	Pric	e	Qua	ntity	7			
	A		9		5		8	3					
	B 6			11		7		5					
	C 5			15		6		11					
	D		20		3		14						
4	Explain the components of Time Series.												
5	Calculate cost of living Index Number from the following data:												
	Commodity	W	/eight		F	Price in	1 Rup	ees					
					Base Y	ear	Cu	irrent	Year	•			
	Food		7		10			12					
	Clothing		4		6			10					
	Housing Rent		3		4			6					
	Fuel and		1		2			2					
	lighting		_					1.0					
-	Miscellaneous		5		8	0.11	<u> </u>	12					
6	Obtain the five ye	early m	oving a	iverage	s for the	e follov	wing o	lata re	pres	enting	exports	s(in	
	lakhs of rupees) of	of a con	npany c	luring l	.996-20	05.Plo	ot the g	given o	data	and fiv	e yearl	y	
	moving averages	trend v	alues)	on a gra	aph pap	er.	1 00			2004	2005	1	
	Year 199	6 199	7 199	8 1999	9 2000	$\frac{200}{74}$	1 20	$\frac{02}{20}$)03	2004	2005		
7	Exports 46	50	56	63	/0	/4	82	90)	95	102		
/	Find Karl Pearson	n's corr	elation	coeffic	ient for	the to	llow11	ng:					
	Income 5	7 6	8										
	Expenditure 1	3 4	2										

8	Calcula	ate Karl	Pearso	n's coe	efficie	ent	of corr	elation	for th	e follow	ving da	ita		
	X	10	12	2	14		18	20		16				
	у	20	25	5	30		35	25		21				
9	Calcula	ate Spea	arman's	s Rank	Corre	elat	tion coe	efficier	nt for tl	ne follov	ving d	ata.		
	X	67	42	53	66		62	60	54	68				
	Y	78	80	77	73		75	68	63	74				
10	From the	he follo	wing d	ata:							_			
				у										
	Arithr	netic M	c Mean 35					84						
	Standa	ard Dev	viation	11				8						
	Correla	ation co	efficier	nt is 0.6	66.									
	Find (i) The two regression coefficients $b_{yx} \& b_{xy}$ (ii) The two regression equations													
	(iii) Estimate the value of y when x=38													
11	Using t	hree ye	arly mo	oving a	verag	ges	metho	d draw	the tre	nd line	and ac	tual lin	e	7
	Year			2012	2 201	13	2014	2015	2016	2017	2018	2019	2020	_
	Incom	e(in the	ousand)	8	10		15	12	16	17	19	18	17	
12	Find cost of living index number by aggregate method for the following data:													
	Commodity Price						rice		Quar	ntity				
		2019 20)20								
	A		3			8			1					
	B		4			6	2		2	2				
			5			9	2		4	4				
12		• 1		1.0	• ,•	1()	1	5	<u> </u>				
15	An unb	nased c	01n 1s to	ossed 6	time	s. f	-ind the	e proba	ability	of gettir	ıg			
14	(1) exa	ctly 3 n	eads (1) zero	nead	b o i	inday n	umbar						
14	For the	Sim	ing data	a consu rogativ	ruct ti vo Mo	the	index n	lumber	using					
	(1)	Sim	le Agg	rage of	Price	uic > re	u Iatives	Metho	hd					
	Comn	nodity		nit	11100			Pr	ice in 1	Runees				
	Comm	louity		liit			Base	vear		Current	Year			
	A		K	gs			12	jeur		16	I UUI			
	B		Li	tres			7			10				
	C		K	gs			8			11				
	D		D	ozens			30			40				
15	The me	an and	variand	ce of a	binon	nia	l distril	oution	are 3 a	nd 2 res	pectiv	ely. Fin	d 'p', 'a	<i>ז</i> ′'
	and 'n'.										•	2	• '	•

16	Construct the 3 yearly moving averages of students studying in a self financing course											
	in a colleg	ge is sho	own bel	OW.								_
	Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
	No. of	33	31	35	39	40	41	42	40	38	38	
	Students											
	Also repre	esent the	e origir	al time	e series	and the	e movii	ng aver	ages oi	n a grap	oh pap	er.
17	Find weig	ghted ag	ggregat	e index	numbe	er for th	ne follo	wing d	ata:			
		Comm	odity	Pric	ce	I	Price		Wei	ght		
				201	9		2020					
		А		3		8	3		1			
	B 4					6	5		2			
		С		5		Ģ)		4			
18	A variate X follows Poisson distribution with mean 0.2.											
	Find (i) $P(X = 0)$ (ii) $P(X > 1)$. [Given : $e^{-0.2} = 0.8187$)											
19	If a Poisson variate X is such that $P[X = 1] = P[X = 2]$, find $P[X = 4]$.											
	[Given $e^{-2} = 0.1353$]											
20	In a sample of 1000 cases, the mean of a certain test is 14 and standard deviation is 3.Assuming the distribution to be normal, find how many candidates score between 5 and 20? [Given : Area between $z = 0$ and $z = 3$ is 0.4986 Area between $z = 0$ and $z = 2$ is 0.4772]											
21	The distril	oution o	of mark	s of 30	00 stuc	lents is	norma	lly dist	ributed	with n	nean 6	00 and
	standard d	leviatio	n 100. I	Find th	e numb	per of st	tudents	having	g marks	s more t	than	
	775.(Area	betwee	en z=0	and z =	= 1.75 is	s 0.459	9)					
22	X is a nor	mal var	iate wi	th mean	n 30 an	d varia	nce 25.	. Find t	he prot	oabilitie	es that	
	(i) $x >$	> 42(ii)x < 2	8	-			-				
	[Given : A	Area be	tween 2	z = 0 c	ind z =	= 2.4 =	0.491	.8				
	A	rea bety	ween z	= 0 ar	d z =	0.4 =	0.1554	-] 				
23	The numb	er stude	ents pas	ssing ir	an exa	am is no	ormally	/ distrit	outed w	vith me	an 60 :	and
	standard	deviatio	on is 10	. What	is the j	probabi	lity of	getting	more t	han 70	?	
24	(area betw	$\frac{1}{2}$	$\frac{10}{2}$ and $\frac{1}{2}$	$\frac{2}{1} = 1 + 18$).3441)		•	100	1 .	1	. 1	
24	It is obser	ved that	t 50% (of the s	tudents	are sw	immer	. If 3 st	udents	are sele	ected a	at
25	random fr	$\frac{\text{om 5, v}}{1}$	vhat 15 1	the pro	bability	$\frac{1}{1}$ that of	nly one	e 1s a sv		r?	D' (•1
25	Number o	I road a		ts on a	nighwa	ay durn	ng a mo	onth tol	lows a	P01SSO	n Dist	ribution
	with mean	1 5. Fine	d the pr		ty that	$\ln a a c$	certain	month	numbe	r of acc	adents	in the
26	highway v	vill be l	ess tha	n 3. e	$\frac{3}{2} = 0.0$	106/38	5 11 1° 4		•.1	0	170	1
20	The weigh	nt of a p	acket o	DI DISC	uits are	norma	ily dist		with n	nean U.	1/2 gr	n and
	standard d	leviatio	n Sgm.	11 1000	J packe	are c	bserve	d, how	many	packets	shave	weight
	greater that	an 180g	m. (A)	rea bety	ween Z	=0 and	L=1.6	18 0.44	52)			

27	If mean and variance is a binomial distribution are 3 and 3/2 respectively, find the												
	probability o	f 4 succe	esses?								-		
28	Explain Pois	son distr	ibutior	n with	n an	exampl	le.						
29	Five coins ar	e tossed	simult	aneou	usly.	What	is the	proba	bility	of get	ting 2 h	eads?	
30	Find the regr	ession e	quation	<u>n</u> of y	on 2	x from	the fo	llowin	ng da	ta.			
	$\sum x = 28$	$\sum v = 0$	530, Ӯ	x^2	= 14	$40.\sum$	xv =	2576	n =	7.			
	Δ		$^{\prime}$			Ύ Δ	5	,					
31	Find Spoorm	e y wher	Corrol	1. lation		fficion	t for th	$\frac{1}{100}$	owin	<i>a</i> :			
51	Marks in	all Kallk		35	65	85	101 u 15	27	<u>/18</u>	g.			
			.1	33	70	0.5	45	37	40	40			
22	Marks	n Maths		20	/0	60	60	45	36	40	1 1.	1	1
32	Using three yearly moving averages method draw the trend line and actual												
	line												
	Year	2012	2013	20	14	2015	201	6 20	17	2018	2019	2020	
	Income(in	8	10	15		12	16	17		19	18	17	
	thousand)												
33	Find the regression of y on x by method of least squares and find y when $x = 5$												
	X 8	3	6			7	_	9					
	Y 4	1	3		8		5		10				
34	Find regression of y on x and find y when $x = 3$												
	x 2	8	8	4 6			1	L	5				
	Y 3	2	ŀ	8	4		6		7				
35	Find trend va	alue by l	east sq	uare 1	meth	nod					٦		
	Year	2016	201	017 201		018	201	19 2		20	_		
	Profit 4	4	5		7		6		8				
36	Find Laspey	re's and	Paasch	's inc	dex 1	Numbe	rs		-				
	Commodity	Pri Pri	ce	Qu	uanti	ity	Pric	e e	Q	uantity	7		
		20	15		2015	,	202	20		2020			
	A)		3		8			5			
	B	6)		4		14	•		8			
27		<u> </u>	1	1	0		12	, ,1, , ,1, (1.	10	· 1.	1	
51	Find cost of	living in	$\frac{1}{2}$	mber		aggrega	ite me	thod f	or th	e iollo	wing da	.ta:	
	Commodity	201			PT 20			Qua	nnty		_		
		201	.9		20	020		1			_		
	B				0						-		
		5			9	0 Q							
	D	7			10			5			-		
34 35 36 37	Y2Find regressi x Y 3 Find trend valueYearYear Y Profit A BCFind cost ofCommodityABCFind cost ofABCD	$\frac{1}{0 \text{ of y of }}$ $\frac{1}{0 \text{ of y of }}$ $\frac{1}{2016}$ $\frac{1}{2016}$ $\frac{1}{200}$ $\frac{1}$	3 on x an east sq 201 5 Paasch ce 15 5 6 7 dex nu ce 9	Id find 4 8 uare 1 7 's ind Qu	8 d y v meth 20 7 dex 1 uanti 2015 3 4 6 by a 6 9 10	when x 6 4 nod 018 Numbe ity 5 aggrega ice 020		1 2 2 4 5	10 5 7 20 8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	20 20 2020 5 8 10 e follo	wing da	ta:	

38	Find weig	ghted ag	ggregate	index	x nu	mber	for the f	ollo	owing	g data	a:			
	Commo	dity	Price			Price			Wei	ght				
			2019			2020								
	А		3			8			1					
	В		4			6			2					
	С	5		9			4							
39	Compute following	the Con g:	rrelation	Coef	ficie	ent be	tween th	ne v	variat	oles x	and y	for	each o	f the
	r	_3	_2		_1)	1		2				
		-3	-2		0		<u>.</u> 1	$\frac{1}{2}$		3		-		
	у	-2	-1		0		L	2		5				
	Y	1	2	,	3		5	4		3				
	v v	2	4		5		5	3		1				
	<u> </u>	-	·				<u> </u>	U		-				
	x	3	2		3		4		1		2			
	v	4	4		5		3		8		6			
											L			
40	Compute	the cor	relation	coeff	ïcier	nt bet	ween the	e fo	llowi	ing m	arks (out	of 10) i	n
	Statistics(x) and Mathematics (y) of 5 students:													
	Students 1			2			3		4			5		
	x	4		7			8		3			4		
	y	5		8			6		3			5		
41	The follo	wing ta	ble repre	sents	s the	mark	s (out of	f 10)) of :	5 stuc	lents i	n sp	orts an	d
	academic	s. Find	the corre	elatio	n co	effici	ent and	con	nmer	nt.				
	Studen	ts A		В			С		Γ)		E		
	Marks	in 7		3			6		4			5		
	Sports((x)										-		
	Marks	[n] 0		9			2		6)		3		
	(v)													
42	Calculate	the coe	efficient	of co	rrela	ation 1	between	the	e pric	e and	the d	ema	nd fron	n the
	following	g data, a	ind comm	nent.					· P···•	0 4114		011100		
		,												
	Price(Rs	s./unit)		4 2	3	5 6	2							
	Demand	(in thou	usands)	5 7	7	3 2	6							
43	Calculate	the Sp	earman's	rank	c cor	relati	on coeff	icie	ent fo	or the	follov	ving	•	
		1										U		

	Marks 1	10	3	5	8	9						
	Marks 2	7	6	2	3	4						
44	Calculate the Spearman's rank correlation coefficient for the following:											
	Marks1	30	40	50	10	40	70					
	Marks2	75	32	45	15	20	45					