EASTERN UNIVERSITY, SRI LANKA FACULTY OF COMMERCE AND MANAGEMENT

fear First Semester Examination in Bachelor of Commerce (Specialization in Accounting and Finance)-2014/2015(May 2017) (Proper)

DAF 4043 Portfolio Investment Analysis

All Questions

Time Allowed: 03 Hours

grammable Calculator and Time Value Tables are permitted.

How do you distinguish between "Saving" and "Investment".

(05 Marks)

Describe how investment funds, pension funds and life insurance companies each act as financial intermediaries.

(05 Marks)

The investment management process describes how an investor should go about making decisions. Investment management process can be disclosed by fivestep procedure. Briefly explain the steps.

(05 Marks)

Distinguish between financial investment and real investment.

(05 Marks)

What factors might an individual investor take into account in determining his/her investment policy?

(05 Marks)

(Total 25 Marks)

02. (I) Describe the different types of returns.

(04 Mars

(II) What is the use of Coefficient of Variation in investment decision? If two asset and Y, are said to have expected returns of 10% and 15% and standard deviation of returns of 5% and 12% respectively, which asset shall be selected investment?

(04 Man

(III) Calculate the Expected Rate of Return and the Standard Deviation of the Return for an asset which has the following possible returns with associated probability

Possible Returns (%)	22	12	18	00	- 05	14	03	-20
Probabilities	0.05	0.16	0.24	0.10	0.15	0.10	0.14	0.06

(04 Mark

(IV) Securities P, Q and R have the following characteristics:

Probability		Possible Return (%)
,	Security P	Security Q	Security R
0.20	-21	13	10
0.50	06	17	12
0.30	31	-12	15

Required:

Calculate the following:

- (a) The Co-Variance between returns of the Securities.
- (b) The Correlation Coefficients between returns of the Securities
- (c) The Expected Rate of Return and the Standard deviation of the returns the portfolio of securities P, Q and R, combined with equal weights.

(13 Mar

(Total 25 Mar

the risk-free rate of return is 7.5% and the return on the market portfolio is 25%, what is the expected return on an asset having a Beta of 1.75, according to the CAPM?

(05 Marks)

The following investment portfolios are evaluated by an investor:

Portfolio	E(R _P) (%)	$\sigma_{\!\scriptscriptstyle P}$ (%)
A	16	20
В	12	12
C	12	13

Using Markowitz portfolio theory, explain the choice for the investor between portfolios A, B and C.

(05 Marks)

An investor owns the portfolio composed of four securities. The Betas of these securities and the investments on them are shown below. What is the Beta of the investor's portfolio?

Securities	Beta	Investment in Portfolio (Rs.)
A	0.8	300,000
В	1.2	450,000
С	- 0.9	150,000
D	- 1.0	100,000
500 A		at at

(05 Marks)

(IV) From the following information, find out the minimum risk portfolio:

$$\mathsf{E}(\mathsf{R}_A) \ = 17\%$$

$$E(R_B) = 22\%$$

$$\sigma_{\!\!A} = 11\%$$

$$\sigma_{B} = 19\%$$

$$Cor_{AB} = {}^{+}0.5$$

(05 Marks

(V) An Investor owns a portfolio of four securities. The characteristics of the securities their proportions in the portfolio are presented below.

Security	Beta	Proportion (%)	Expected Return (%)
L	2.50	35	20
М	0.95	25	12
N	1.00	15	10
0	-1.25	25	15

Required:

- (a) What is the expected rate of return of this portfolio?
- (b) What is the risk of the portfolio?
- (c) If the investor wants to reduce risk in his portfolio how he con restructure his portfolio?

(05 Mar

(Total 25 Mar

bllowing are the annual returns of Share of N plc and the market (M) for the last ears

9	Return	ıs (%)
Year	N	M
2012	13	14
2013	16	19
2014	- 03	00
2015	14	21
2016	- 05	- 08

vired:

Determine the beta coefficient for N

How much is (a) Total Risk, (b) Systematic Risk, and (c) Unsystematic Risk of the share of N plc.

(10 Marks)

A portfolio consists of four securities A, B, X, and Y. with the following characteristics.

characteristics.			7/	V		-
	Α	В	Х	Y		
Expected Return (%)	24	20	18	1,5		
Standard Deviation (%)	18	15	13	11		
MARKET VALUE OF THE PARTY OF TH	AB	AX	AY	BX	BY	XY
Combination	W.S. Market	+ 0.60	- 0.20	+ 0.40	- 0.25	+ 0.10
Correlation	- 0.50	+ 0.00	0.20			

quired:

the securities are equally weighted, how much is the risk and return of the portfolios of se four securities?

(05 Marks)

- (III) An investor holds an investment on the bonds of BSN plc having a par value Rs.1000 each with coupon rate of 13% per annum payable semi annually and the maturity of 12 years.
 - (i) What is the value of a bond today if the market rate of return is equal to coupon rate?
 - (ii) What will be the value of the bond if the market interest rate increases 15% at the end of one year?
 - (iii) What will be the value of the bond if the market interest rate decreases 10% at the end of five years?
 - (iv) If the value of the bond is Rs.1250 after two years from the date of issue what would be the YTM of the bond?

(10 Marks) (Total 25 Marks)

Table A-1 Future Value Interest Factors for One Dollar Compounded at k Percent for n Periods: $FVIF_{k,n} = (1 + k)^n$

	San a		Suburo	Value I	nterest	Fac	tors for	One Do	llar Con	npounde	u at n						102/	20%	24%	25	14	30%
	Table	8 A-1	ruture					1			12%	131	%	14%			1674	.2000	1.240	0 1.2	500 1	.3000
				- T	7%	8	%	9%	1076	11%	1.1200	1.13	300 1.	1400	1.15		1000	1.4400	1,537		625 1	1.6900
3%	4%	ALC: UNKNOWN	5%	6%	1.0700	1.0	800 1	.0000		111111	1.2544	1.2		.2996	1.32	20	.5450	1.7280	1,906		531	2.1970
2300	1.0400	0 1.	4044	1.0600	1.1449	-		.1881	- LIAM	1.2.00		1.4		.4815	1.52		10000	-	2,364	1	4414	2.8561
1,0609	1.081		IONO	1.1236	1.2250	_		.2950	1.3310	1.3676	1.4049	-		.6890	1.74		.0100	2.0736	2.93	-		3.7129
1.0927	1.124	9 1.	1576	1.1910	-	_		1.4116	1.4641	1.5181	1.5735		000	1.9254	2.0	114 3	.1003	2.4883	2.55	10		
1.1255	1.169	9 1.	2155	1.2625	1.3108	1		1.5386	1.6105	1,6851	1.7623	1.0	424						3.63	E2 3	.8147	4.8268
1,1593	1.216		.2763	1.3382	1.4026	1	4035					-	0820	2.1950	2.3	131	2.4364	2.9860	-		7684	6.2749
111000		Contract of the				+-	.5869	1,6771	1.7716	1.8704	1.9738	-	2010	2.5023	2.6	600	2.8262	3.5832	4.50	-	.9605	8.1573
1,1941	1.26	53 1	.3401	1.4185	1.5007	-	.0000	1.8280	1.9487	2.0762	2.2107		1024	2.8526	3.0	590	3.2784	4.2998	5,58	000	7.4506	10.604
-	1.31	10 mg 1 mg	1.4071	1.5036	1.6058	-	.1100	1.9926	2.1436	2.3045	2.4760	_	0.50	3.2519	-		3.8030	5.1598	+	010	-	13.786
1,229	1.36	STATE OF THE PARTY.	1.4775	1.5938	1.718	-	.8509		2.3579	2.5580	2.7731	-	0040		-	0456	4.4114	6.1917	8.5	944	9.3132	13.700
1.266	1000	100	1,5513	1.6895	1.838		.9990	2.1719	2.5937	2.8394	3.105B	3.	3946	3.7072	4.0	1400		AND A CONTRACT	1	-		17,922
1304			1.6289	1,7908	1.967	2 2	2.1589	2.3674	Z,0301			1			1	6524	5,1173	7.4301	10.	.657	11.642	
1343	1.48	802	1.02.00				-		2.8531	3.1518	3.4785	3	.8359	4.2262		-	5.9360	8.9161	13	.215	14.552	23.298
		***	1.7103	1,8983	2.104	10	2,3316	2.5804	3.1384	3,4985	3.8960	1 4	.3345	4.8179	-	3503	6.8858	10.699	16	3.386	18.190	30.288
1,38	Total Control	300		2.0122	2.25	22	2.5182	2.8127		3.8833	4,363	5 4	1.8980	5,492	-	1528	7.9875	12.839	T	0.319	22.737	39.374
1,42	-	1010	1.7959	2.1329	2.40	98	2.7196	3.0658	3.4523	4,3104	4.887		5,5348	6.261	-	.0757	9.2655	15.407	-	5.196	28.422	51.186
1.46	The second	651	1.8856	2.2609	-		2.9372	3.3417	3.7975	-	5,473	0.00	6.2543	7.137	9 8	.1371	9,2655	13.40	1			
1.51	6 1.7	7317	1.9799	-			3.1722	3.6425	4.1772	4.7846	102410				_			18.48	3 3	1.243	35.527	66.542
1,55	1.8	8009	2.0789	2.3966	-						6,130	14	7.0673	8.137	-	3.3576	10.748	22,18	-	8.741	44.409	
				1	4 2.95	522	3.4259	3.9703	4.5950	5.3109	6.860	-	7.9861	9.27	55	10.761	12,468	26.62	-	18.039	55.511	112.45
1.84	47 1.	8730	2.1829			-	3.7000	4,3276	5.0545		-	-	9.0243	10.5	75	12.375	14,463	_	-	59.568	69.389	146.19
1.6	STATE OF THE PERSON	9479	2.2920		-		3.9960	4.7171	5.5599		-	-	10.197	12.0	56	14.232	16.777	31.94	-	73.864	86.736	
1.7		0258	2.406		-	-	4,3157	5.1417	6.1159	7.263		-	11.523	13.7	43	16.367	19.461	38.33	18	73.004		-
1.7	COLUMN TO SERVICE	1068	2.527	3.025			4,6610	5.6044	6.727	8.062	3 9.64	63	11.520	1		1		-	-	91.592	108.42	247.06
-		2.1911	2.653	3 3.207	1 3.8	697	4.0010		2 secondor		_	-	10000	15.6	SAR	18.822	22.574		-		+	
10	-				_		5 0225	6.1088	7.400	2 8.949			13.021			21.645	26.18		-	113.574	169.4	
1	002 2	2.2788	2.786	0 3.39	30	1406	5.0338	-		3 9,933		-	14.714	-		24.891	30.37	66.2		140.831		
	204	2.3699	2.92		30	4304	5.436		-		26 13.	552	16.627	_		28.625	35.23	6 79.4		174.631	211.7	
		2.4647	-		97 4.	7405	5.871	-			39 15.	179	18.788			32.919	-		96	216.542	264.6	38 / 705.0
-			-	-	89 5.	0724	6.341		-		- 3550	000	21.231	26.	462	34.313					1	-
	-	2.5633			19 5.	4274	6.848	5 8.623	1 10.0.	-				-	_	66.21	85.85	0 237	376	634.820		794
18 2	938	2,6658	3.30	-				_	- 47.4	49 22.8	92 29	.960	39.11	-	.950	-		-	.668			
			1	19 5.7	435 7	.6123	10.06			10	-	.800	72.06	_	.100	133.17			.802			
14 2	100	3.2434			400	0.677	14.71				110	.136	81.43	7 11	1.834	153.15		-	7	*		
9 7	8139	3.946		100		1.424	COLUMN 18 COLUMN	38 22.2			-	3.051	132.7	82 18	8.884	267.85	54 378.7	21				
18	8983	4.103		-		14.974	200000	25 31.4	09 45.2		-	9.002	-		0.233	1 .				-		
	2620	4.801		100		29.45	-	_	58 117.	391 184	,595 20	3.002	-	Mark Street or Street								
	3839	7.106	7 11.	467 18	.420	20,70	-	-	9 - 300 Lunes ()									- 1/4	. 7.0	0 41/	le .	

Table A-2 Future Value Interest Factors for a One-Dollar Annuity Compouned at k Percent for n Periods: $FVIFA_{k,n} = [(1 + k)^n - 1]/k$

				table Ir	terest	Facto	rs for a	One-De	oliai Mil	nuity Co								c9/	20%	24%	-		30%
b	able A	4-2 F	Hute.	value			110011				17%	12%	13	%	14%	15%		1600	.2000	1.2400	1.	204	1.3000
				5%	6%	79	6 8	10	9%	10%		1,1200	1.1	300 1	,1400	1.150	-		2000	2.2400	2	2000	2.3000
	3%	4			1.0600	1.07	00 1.0	800 1	.0200	111000	2.1100	2.1200	2.1	300 2	.1400	2.150	-	1000	6400	3.777	6 3	.0120	3.9900
10	1,0300	1.0	100	1.0500	2.0600	2.0	700 2.0	800 2	.0900	ALT THE REAL PROPERTY.		3.3744	3.4	069	3.4396	3.47	-	3030	5.3680	5.684	2 5		6.1870
90	2.0300	2.0	100	2.0500	3,1836	3.2		2464 3	.2781	3,010	3.3421	4.7793	4.8	498	4.9211	4.99	0.	,0000	7.4416	8.048	4 8	.2070	9.0431
1	3.0909	3.1	2.40	3.1525	4,3746	-		5061	1.5731	4.6410	4.7097	6.3528	-	803	6.6101	6.74	24 6	.8771	1.04.10	-			
25	4.1836	4.2		4.3101	5.6371	_		8666	5.9847	6.1051	6.2278	0.5520	-				_		9,9299	10.98	30	11.259	12.756
141	5.3091	5.4	163	5.5256	5.037	-						8.1152	8.3	3227	B.5355	B.75	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3.9775	12.916	14.5		15.073	17.583
						7.	533 7.	3359	7.5233	7.7156	7.9129	10.089	- 10	,405	10.730	11.6	301	11.414	16,499	19,1		19.842	23,858
DE1	6,4684	4 6.	330	6.8019	6.975	-		9228	9.2004	9.4872	9.7833	-	-	2.757	13.233	13.	-	14.240		24.7	-	25.802	32.015
643	7,662		8983	8.1420	8.393	-	3340		11.028	11.436	11.859	12.30	-	5.416	16.085	16.	100	17.519	20.799	31.6	-	33.253	42.619
930	8.892		2142	9.5491	9,897	-	1,2,00	2.488	13.021	13.579	14.164	14.77	-	8.420	19.337	20.	304	21.321	25.959	91.0	-		Lance -
546	10.15	White the same	583	11.027	11.49	-	1,010	4,487	15.193	15.937	16.722	17.54	19			1				40.2	238	42.566	56,405
1150	11.46		2.006	12.578	13.18	1 1	3.010		Program				- 1	1.814	23.045	24	.349	25.733	32,150	-		54.208	74.327
1201		-			-	-	C 704	16.645	17.560	18.531	19.561	20.65		5.650	27.271	29	.002	30.850	39.581	-	110	68.760	97.625
1152	12.80	08 1	3.486	14.207	14.9		3.70	18.977	20.141	21.384	22.713	24.13	-	9.985	32.089	34	.332	36.786	48.49	-	496	86.949	127.91
1155		500 AD	5.026	15.917	16.8	-	1,000	21.495	22,953	24.523	26.212		-	34.883	37.581	40	.505	43.672	59.19	-	.815	109.587	167.28
1412	15.6	Contract Laborator	6.627	17.713		-	0.11	24.215	26.019	27.975	30.095		-	40.417	43.842	4	7.580	51.660	72.03	100	.013		
LEC	17.0	manufacture (April	18.292	19,599		-	12.00	27.152	29.361	31.772	34.405	37.2	80	40.411			-			420	5.011	138,109	218.47
127	100	100	20.024	21.579	23.2	76	25.129	21,102			-	-	-	46,672	50.980	5	5.717	60.925	87.44	-	-	173,636	
12	10.0	-	218			-		30.324	33.003	35.950	39.190		-	53.739	59.11	100	5.075	71.673	105.9		7.253	218.045	
-	20.	157	21.825	23.65		110	27,888	33.750	36,974	40.545	44.501		1000	61.725	68.39		75.836	84.141	128.1	-	5.994	273.556	
111	St. Barrier	10.	23.698	25.84	0 28.	210	30.840	37.450	41.301		50.390		100		78.96		88.212	98,603	154.7	-	4.033	342.94	
111	and the latest	102	25.645	40	2 30.	906	33.999		46.018		56.93		440	70.749	91.02		02.444	115.380	186.6	88 30	3.601	345.34	
17.4	and the same		27.671			760	37.379	41.446	51.16		64.20	-	.052	80.947	31.04	1	100000		-	-		429,68	1 820.2
113	and specific	117	29.778		36 36	786	40,995	45.762	31,10			1	-		104.7	68	118.810	134.84		720	77.465		-
14.2	7 25	.870	20.11				-	FO 400	56.76	5 64.00	2 72.26	-	,699	92.470	-	-	137.632			-	69.056	-	-
		076	31.96	35.7	19 39	.993	44.865	50.423					2.503	105.49		-	159.276				82,630		
I L	and the same	1.676	34.24			.392	49.008	55.457	-	00.54			4.603	120.20	-	-	184.168			-	23.46		33
	and the latest	0.537	36.61		-	.996	53,436	60.893	-	40		174 11	8.155	136.83	-	-	212.79		4 471	981 8	98.09	2	-
1		2.453	39.08			.816	58.177	66.765				413 13	3.334	155.62	181.	011	21200		A .	_	_	+-	+
	100	4.426	41.64		-	4.865	63.249	73.10	84.7	01.0					-	707	434.74	5 530.3	2			+:	-
T	133 3	5.459	41.64				-	1		164.4	94 199.	021 2	41.333	293.1	The same of the sa		881.17				*	+ *	+
1				66	439 7	9.058	94.461	113.28		100		_	31.663	546.6			901.11			*		+:	-
T	1000	47.575	56.0	-		11.435	138.23				-		84.463	618.7	-	.673		*		•		+:	
T		60,452	73.6	02		19.121	148.91			120	-		67.091				-	*		*	•		
3		63.276	77.5	00	.000	54.762	199.63			000	000		*			_							
1		75.401	95.0	20		90.336		9 573.7	70 815.	.004													
18	1579	112.797	152.	667 20	3.040	-	-																

Present Value and Future Value Tables

Table A-3 Present Value Interest Factors for One Dollar Discounted at k Percent for n Periods: $PVIF_{k,n} = 1/(1+k)^n$

Period	1%	2%	3%	4%	5%	8%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%		25% 25
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0,8696	D.8621	0.8333	-	0.8000 ETM
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561	0.7432	0.6944		0.5400 1.90
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8395	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787		0.5125 646
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	C.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4823		0.4395 1.38
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0,7130	0.6806	0.6499	0.6269	0,5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3411	0.3277 LIN
20.00		200222000		2227112111										0.00-0.00111.110					
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0,4556	0.4323	0.4104	0.3349	0.2751	0.2921 1.39
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759	0.3538	0.2791	0.2218	0.2067 1.11
В	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0,5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3508	0.3269	0.3050	0.2326	0.1789	0.1671 1.0
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342 18
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1674 EE
			1	er avellesses	HELENON (1.17)														
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	9.065F E
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0667 (3
13	0.8787	0.7730	0.6810	0,6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550 11
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0441 11
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352 U
			8	1000000			MOREOCCIO		LINE STREET	(/) 2000293333 ===									
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281 E
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225 E
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180 0
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115
	1		***************************************	-	-	11/83.25883		-771650									1		
21	0.8114	0,6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0,1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1607	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151	0.0071	0.0056
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0647
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	9.0038
23	0.17.00	0.0000	3.77.13			-		- 100	771	100	TAMENTULI SE								-
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0014	+	
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007		
50	0.6080	0.3715	0,2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006			

Table A-4 Present Value Interest Factors for a One-Dollar Annuity Discounted at k Percent for n Periods: PVIFA = [1 - 1/(1 + k)^n]/k

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	29% 1
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8695	0.8621	0.8333	0.8065	0.8000 13
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1,6681	1.6467	1.6257	1.6052	1.5278	1.4568	1,4400 13
3	2,9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2,4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065		1,9520 13
4	3.9020	3.8077	3.7171	3.6299	3.5460	3,4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3815 11
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3,6048	3,5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.5893 1
6	5.7955	5.6014	5.4172	5.2421	5,0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514 1
7	6.7282	6.4720	6.2303	6.0021	5,7864	5.5824	5.3893	5.2064	5,0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046		3.1611 1
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5,5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289 1
9	8.5660	8.1622	7.7861	7.4353	7,1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631 1
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7,0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5786 1
11	10.368	9.7868	9.2526	8.7605	8.3064	7.8869	7,4987	7,1390	6.8052	6.4951	6,2065	5.9377	5.6869	5.4527	5,2337	5.0286	4.3271	3.7757	3.6564 1
12	11.255	10.575	9.9540	9,3851	8.8633	8,3838	7.9427	7,5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5,1971	4.4392	3.8514	3.7251
13	12.134	11.348	10.635	9,9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6,7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.3327	3.9124	3.7801
14	13.004	12,106	11.296	10.563	9,8986	9.2950	8,7455	8.2442	7.7862	7.3667	5.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3,8241
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6,4624	6,1422	5.8474	5.5755	4.6755	4.0013	1,8591
					8 10000		0011-0011000												
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5,9542	5.6685	4.7296	4.0333	3.8874
17	15.562	14.292	13.166	12,166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3,9099
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3549	7.8393	7.3658	6.9380	6.5504	6,1982	5.8775	4.8435	4,0967	3.9424
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.6181	9.1285	B.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539
and in												11							1/05/00/0
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9,2922	8.5487	8.0751	7.5620	7.1016	6.6870	6.3125	5,9731	4.8913	4.1212	-
22	19,660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9,4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	4.9094	4.1300	3.9705
23	20,456	18.292	16,444	147.857	13.489	12.303	11.272	10.371	9,5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	4.9245	4.1371	-
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.7066	8,9847	8.3481	7.7843	7.2829	6.8351	6.4338	6,0726	4.9371	4.1428	
25	22.023	19.523	17,413	15.622	14.094	12.783	11.654	10,575	9.8225	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6:0971	4.9476	4.1474	3.9849
			40.000	47 700	15,372	13.765	12,409	11.258	10,274	9.4269	8.6938	8.0552	7.4957	7,6027	6.5660	6.1772	4.9789	4.1601	3,9950
30	25.808	22.396	19.600	17.292	16.374	14.498	12,948	11,655	10,567	9.6442	8.8552	8.1755	7.5856	7.0700	6.6166	6.2153	4.9915	4.1644	3.9984
35	29,409	24.999	21.487		16.547	14.621	13.035	11.717	10.612	9.6765	8,8786	8.1924	7.5979	7.0790	6.6231	6.2201	4.9929	4.1649	3.9987
36	30.108	25.489	21.832	18.908		15,046	13.332	11.925	10.757	9,7791	8,9511	8.2438	7.6344	7.1050	6.6418	6.2335	4,9956	4.1659	3,9995
40 50	32.835	27.355 31.424	23.115 25.730	19.793	17.159	15.762	13.332	12.233	10,757	9,9148	9.0417	8.3045	7.6752	7,1327	6.6605	6,2463	4.9995	4.1668	-