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UNIVERSITI SAINS MALAYSIA

**Kolej Teknologi Pulau**

Peperiksaan Kursus Semasa Cuti Panjang  
Sidang Akademik 2007/2008  
Jun 2008

**Program Ijazah Luaran  
Ijazah Sarjana Muda Pengurusan (Kepujian)**

**AFW360 - Kewangan Korporat  
[Corporate Finance]**

Masa: 3 jam  
[Duration: 3 hours]

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Sila pastikan bahawa kertas peperiksaan ini mengandungi **TUJUH** muka surat yang bercetak sebelum anda memulakan peperiksaan ini.

*[Please check that this examination paper consists of **SEVEN** pages of printed material before you begin the examination.]*

**Arahan:** Jawab LIMA soalan.

**[Instructions:** Answer FIVE questions.

Soalan 1/Question 1

- (a) Dalam satu mesyuarat Lembaga Pengarah, seorang Ketua Pegawai Eksekutif telah dipetik sebagai berkata "...objektif utama kita untuk tahun ini adalah untuk menghasilkan jualan melebihi paras RM100 juta dan diharapkan ini boleh memberikan kita keuntungan sekurang-kurangnya RM20 juta". Secara teori, adakah objektif ini sesuatu yang paling penting dicapai oleh firma? Bincangkan.

*In a Board of Director meeting, a Chief Executive Officer was quoted as saying "...our main objective this year is to make a sale exceeding RM100 million and hopefully this will give us a profit of RM20 million". In theory, is this objective something very important to achieve by a firm? Discuss.*

[ 10 markah/marks ]

- (b) Bon Multipurpose Corp. membayar faedah kupon sebanyak 9.5% kepada pemegang bonnya. Faedah ini dibayar setiap 6 bulan. Bon ini diterbitkan 8 tahun yang lalu pada harga par RM1000, tetapi sekarang harganya adalah RM871.50, dan masih ada 12 tahun sebelum matang. Berapakah hasil hingga matang bon ini (YTM)?

*Multipurpose Corp. Bond pays coupon interest of 9.5% to its holders. This interest is paid every 6 month. This bond was issued 8 years ago at a par value of RM1000, but the price now is RM871.50, and still has 12 years before maturity. What is the yield to maturity (YTM) of this bond?*

[ 10 markah/marks ]

Soalan 2/Question 2

- (a) Jelaskan tentang risiko tukaran asing. Berikan satu contoh bagaimana sebuah firma boleh menghadapi risiko ini apabila berurusan dengan rakan niaga atau pelanggan di negara lain.

*Explain foreign exchange risk. Give an example how a firm could face this risk when dealing with a partner or customer in another country.*

[ 10 markah/marks ]

- (b) Binyu Enterprise. sedang menimbang struktur modal yang paling optimum. Pihak pengurusan diberikan maklumat berikut:

<u>Nisbah hutang/aset</u>	<u>kos hutang, <math>k_d</math></u>	<u>Kos ekuiti, <math>k_e</math></u>
.30	.10	.125
.40	.105	.13
.50	.11	.135
.60	.117	.142
.70	.13	.155

Berdasarkan maklumat di atas, struktur modal manakah yang patut dipilih? Berikan alasan anda. Andaikan kadar cukai adalah 30%.

*Binyu enterprise is considering an optimum capital structure. The management is given the following information:*

<u>Debt/asset ratio</u>	<u>Cost of debt, <math>k_d</math></u>	<u>Cost of equity, <math>k_e</math></u>
.30	.10	.125
.40	.105	.13
.50	.11	.135
.60	.117	.142
.70	.13	.155

*Based on the information above, which capital structure the firm should choose? Give your reasons. Assume the tax rate is 30%*

[ 10 markah/marks ]

### Soalan 3/Question 3

- (a) Dua kaedah belanjawan modal yang biasa digunakan oleh firma adalah kaedah tempoh bayar balik dan kadar pulangan dalaman (IRR). Jelaskan kebaikan dan kelemahan kedua-dua kaedah ini dalam proses belanjawan modal.

*Two capital budgeting techniques commonly used by firms are payback period and internal rate of return (IRR). Explain the strengths and weaknesses of both methods in the capital budgeting process.*

[ 10 markah/marks ]

- (b) Sepanjang lima tahun lepas, perolehan sesaham saham biasa EngCorp. bertambah dari RM0.62 kepada RM0.91. Jika pelabur saham EngCorp. memerlukan pulangan 14% dari pelaburan mereka dalam saham ini, berapakah nilai semasa saham EngCorp? Andaikan dividen semasa EngCorp. adalah RM0.12, dan perolehan sesaham dan dividen dijangka bertumbuh pada kadar konstan.

*Over the last five years, retained earnings per share for EngCorp common stock increases from RM0.62 to RM0.91. If investors of EngCorp require a return of 14% from their investment in this stock, what is the current value of EngCorp stocks? Assume current dividend EngCorp is RM0.12, and earning per share and dividend are expected to grow at a constant rate.*

[ 10 markah/marks ]

Soalan 4/Question 4

- (a) Jelaskan tentang Hipotesis Pasaran Cepak (EMH) dan tiga bentuk pasaran cekap. Berikan satu contoh yang sesuai bagi setiap bentuk tersebut.

*Explain the Efficient Market Hypothesis (EMH) and the three forms of efficient market. Give a suitable example for each of these forms.*

[ 10 markah/marks ]

- (b) Haikal meminjam RM30,000 dari CitiBank Bhd. untuk membiayai pengajiannya di peringkat ijazah sarjana muda. CitiBank mengenakan 6 peratus kadar faedah setahun. Haikal dikehendaki membuat sepuluh kali pembayaran tahunan yang sama bermula akhir tahun ini kepada bank. Berapakah jumlah bayaran faedah yang Haikal bayar untuk pinjaman ini selepas 10 tahun tersebut? Tunjukkan pengiraan anda.

*Haikal borrows RM30,000 from CitiBank Bhd to finance his study at the first degree level. CitiBank charges 6 percent interest a year. Haikal is required to make ten equal annual payment commencing end of this year to the bank. How much is the total interest that Haikal pays for this loan after those 10 years? Show your calculation.*

[ 10 markah/marks ]

Soalan 5/Question 5

- (a) Penilaian saham biasa adalah lebih rumit berbanding dengan penilaian bon. Adakah anda bersetuju dengan kenyataan ini. Jelaskan secara terperinci.

*Common share valuation is more difficult compared to bond valuation. Do you agree with this statement. Explain.*

[ 10 markah/marks ]

- (b) Firma BolehMaju sedang menimbang satu projek di Kota Bharu. Projek memerlukan pelaburan awal sebanyak RM148,000 untuk bermula. Pada tahun pertama, projek ini akan menghasilkan RM25,000, kemudian menghasilkan RM45,000 untuk tahun ke-2 sehingga tahun ke-7. Pada tahun ke-8, projek ini menghasilkan aliran tunai negatif sebanyak RM27,000. Jika kos modal adalah 11 peratus, berapakah nilai kini bersih projek?

*BolehMaju firm is considering a project in Kota Bharu. This project needs an initial investment of RM148,000 to start. In the first year, this project will generate RM25,000, then RM45,000 in the second year up to year 7. In year 8, this project will generate a negative cash flow of RM27,000. If the cost of capital is 11 percent, what is the net present value of this project?*

[ 10 markah/marks ]

...5/-

Soalan 6/Question 6

- (a) Penggunaan hutang dalam struktur modal mempunyai kebaikan dan keburukan terhadap firma. Bincangkan kebaikan dan keburukan ini dengan memberikan contoh jika perlu.

*The use of debt in capital structure has its advantages and disadvantages to the firm. Discuss these advantages and disadvantages by giving examples if needed.*

[ 10 markah/marks ]

- (b) Anda sedang menimbang untuk melabur dalam dua sekuriti, X dan Y. Sekuriti X mempunyai beta yang sama dengan beta pasaran, manakala sekuriti Y mempunyai beta 0.5. Pulangan pasaran adalah 10 peratus, manakala pulangan bebas risiko adalah 6 peratus. Jika portfolio anda mengandungi 20 peratus Sekuriti X dan selebihnya Sekuriti Y, berapakah jangkaan pulangan portfolio anda?

*You are considering investing in two securities, X and Y. Security X has the same beta as the market, while Security Y has a beta of 0.5. The market return is 10 percent, while risk-free return is 6 percent. If your portfolio consists of 20 percent of Security X and the rest of Security Y, what is the expected return of your portfolio?*

[ 10 markah/marks ]

Table A.1 Present Value of \$1 to Be Received after T Periods =  $1/(1+r)^T$

Period	Interest Rate								
	1%	2%	3%	4%	5%	6%	7%	8%	9%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174
2	.9803	.9612	.9426	.9246	.9070	.8900	.8734	.8573	.8417
3	.9706	.9423	.9151	.8890	.8638	.8396	.8163	.7938	.7722
4	.9610	.9238	.8885	.8548	.8227	.7921	.7630	.7354	.7092
5	.9515	.9057	.8628	.8219	.7825	.7447	.7085	.6738	.6405
6	.9420	.8880	.8375	.7903	.7462	.7050	.6663	.6302	.5963
7	.9327	.8706	.8131	.7599	.7107	.6651	.6227	.5835	.5472
8	.9235	.8535	.7894	.7307	.6768	.6274	.5820	.5403	.5019
9	.9143	.8368	.7664	.7016	.6444	.5919	.5439	.5002	.4604
10	.9053	.8203	.7441	.6735	.6139	.5584	.5083	.4632	.4224
11	.8963	.8043	.7224	.6499	.5847	.5268	.4731	.4289	.3875
12	.8874	.7885	.7014	.6246	.5568	.4970	.4440	.3971	.3555
13	.8787	.7730	.6810	.6006	.5303	.4688	.4150	.3677	.3262
14	.8700	.7577	.6611	.5775	.5051	.4423	.3878	.3405	.2992
15	.8613	.7430	.6419	.5553	.4810	.4173	.3624	.3152	.2745
16	.8528	.7284	.6232	.5339	.4581	.3936	.3387	.2919	.2519
17	.8444	.7144	.6050	.5114	.4363	.3718	.3166	.2703	.2311
18	.8360	.7002	.5874	.4896	.4155	.3503	.2959	.2502	.2120
19	.8277	.6864	.5703	.4676	.3957	.3305	.2755	.2317	.1945
20	.8195	.6730	.5537	.4454	.3769	.3118	.2584	.2145	.1784
21	.8114	.6596	.5375	.4248	.3589	.2942	.2415	.1987	.1637
22	.8034	.6468	.5219	.4052	.3418	.2775	.2257	.1839	.1502
23	.7954	.6342	.5067	.3857	.3256	.2618	.2109	.1703	.1378
24	.7876	.6217	.4919	.3671	.3101	.2470	.1971	.1577	.1264
25	.7798	.6095	.4776	.3491	.2953	.2330	.1842	.1460	.1160
30	.7419	.5521	.4120	.3003	.2314	.1741	.1314	.0994	.0754
40	.6717	.4529	.3066	.2083	.1420	.0972	.0668	.0460	.0318
50	.6080	.3715	.2281	.1407	.0872	.0543	.0339	.0213	.0134

Period	Interest Rate											
	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%	
1	.9091	.8929	.8772	.8696	.8621	.8473	.8333	.8065	.7813	.7576	.7353	
2	.8264	.7972	.7695	.7561	.7432	.7182	.6944	.6504	.6104	.5739	.5407	
3	.7513	.7118	.6750	.6578	.6407	.6086	.5787	.5245	.4768	.4348	.3975	
4	.6830	.6355	.5921	.5718	.5523	.5158	.4823	.4230	.3725	.3294	.2923	
5	.6209	.5674	.5194	.4972	.4761	.4371	.4019	.3411	.2910	.2495	.2149	
6	.5645	.5066	.4556	.4323	.4104	.3704	.3349	.2751	.2274	.1890	.1580	
7	.5132	.4523	.3996	.3759	.3538	.3139	.2791	.2218	.1776	.1432	.1162	
8	.4663	.4039	.3506	.3269	.3050	.2660	.2326	.1789	.1388	.1085	.0854	
9	.4241	.3606	.3075	.2843	.2630	.2255	.1938	.1443	.1084	.0822	.0628	
10	.3855	.3220	.2697	.2472	.2267	.1911	.1615	.1164	.0847	.0623	.0462	
11	.3505	.2875	.2366	.2149	.1954	.1619	.1346	.0938	.0662	.0472	.0340	
12	.3186	.2567	.2076	.1869	.1685	.1372	.1122	.0757	.0517	.0357	.0250	
13	.2897	.2292	.1821	.1625	.1452	.1163	.0935	.0610	.0404	.0271	.0184	
14	.2633	.2046	.1597	.1413	.1252	.0985	.0779	.0512	.0316	.0205	.0135	
15	.2394	.1827	.1401	.1229	.1079	.0835	.0649	.0437	.0274	.0155	.0099	
16	.2176	.1631	.1229	.1069	.0930	.0708	.0541	.0320	.0193	.0118	.0073	
17	.1978	.1454	.1078	.0929	.0802	.0600	.0451	.0258	.0150	.0089	.0054	
18	.1799	.1300	.0946	.0808	.0691	.0508	.0376	.0208	.0118	.0068	.0039	
19	.1635	.1161	.0829	.0703	.0596	.0431	.0313	.0168	.0092	.0051	.0029	
20	.1486	.1037	.0728	.0611	.0514	.0365	.0256	.0135	.0072	.0039	.0021	
21	.1351	.0928	.0638	.0531	.0443	.0309	.0217	.0109	.0056	.0029	.0016	
22	.1228	.0826	.0560	.0462	.0382	.0262	.0181	.0088	.0044	.0022	.0012	
23	.1117	.0738	.0491	.0402	.0329	.0222	.0151	.0071	.0034	.0017	.0008	
24	.1015	.0659	.0431	.0349	.0284	.0188	.0126	.0057	.0027	.0013	.0006	
25	.0923	.0588	.0378	.0304	.0245	.0160	.0105	.0046	.0021	.0010	.0005	
30	.0573	.0333	.0196	.0151	.0116	.0070	.0042	.0016	.0006	.0002	.0001	
40	.0221	.0107	.0053	.0037	.0026	.0013	.0007	.0002	.0001	.0000	.0000	
50	.0085	.0035	.0014	.0009	.0006	.0003	.0001	.0000	.0000	.0000	.0000	

\*The factor is zero to four decimal places.

Table A.2 Present Value of an Annuity of \$1 per Period for T Periods =  $[1 - 1/(1+r)^T]/r$

Number of Periods	Interest Rate								
	1%	2%	3%	4%	5%	6%	7%	8%	9%
1	.9901	.9804	.9709	.9615	.9524	.9434	.9346	.9259	.9174
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2466	5.9952
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177
11	10.3676	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052
12	11.2551	10.5753	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607
13	12.1337	11.3484	10.6350	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869
14	13.0037	12.1062	11.2961	10.5631	9.9886	9.2950	8.7455	8.2442	7.7862
15	13.8651	12.8493	11.9379	11.1184	10.3797	9.7122	9.1079	8.5595	8.0607
16	14.7179	13.5777	12.5611	11.6523	10.8378	10.1059	9.4466	8.8514	8.3126
17	15.5623	14.2919	13.1661	12.1657	11.2741	10.4773	9.7632	9.1216	8.5436
18	16.3983	14.9920	13.7535	12.6593	11.8096	10.8276	10.0591	9.3719	8.7558
19	17.2260	15.6785	14.3238	13.1339	12.2853	11.1581	10.3356	9.6036	8.9501
20	18.0456	16.3514	14.8775	13.5903	12.6822	11.4699	10.5940	9.8181	9.1285
21	18.8570	17.0112	15.4150	14.0292	12.8212	11.7641	10.8355	10.0168	9.2922
22	19.6604	17.6580	15.9369	14.4511	13.1630	12.0416	11.0612	10.2007	9.4424
23	20.4558	18.2922	16.4436	14.8568	13.4886	12.3034	11.2722	10.3741	9.5802
24	21.2434	18.9139	16.9355	15.2470	13.7986	12.5504	11.4693	10.5288	9.7066
25	22.0232	19.5235	17.4131	15.6221	14.0939	12.7834	11.6536	10.6748	9.8226
30	25.8077	22.3965	19.6004	17.2920	15.3725	13.7648	12.4090	11.2578	10.2737
40	32.8347	27.3555	23.1148	19.7928	17.1591	15.0463	13.3317	11.9246	10.7574
50	39.1961	31.4234	25.7298	21.4822	18.2559	15.7619	13.8007	12.2335	10.9617

Number of Periods	Interest Rate											
	10%	12%	14%	15%	16%	18%	20%	24%	28%	32%	36%	
1	.9091	.8929	.8772	.8696	.8621	.8473	.8333	.8065	.7813	.7576	.7353	
2	1.7355	1.6901	1.6467	1.6257	1.6052	1.5656	1.5278	1.4568	1.3916	1.3315	1.2763	
3	2.4869	2.4018	2.3216	2.2832	2.2459	2.1743	2.1065	1.9813	1.8684	1.7663	1.6663	
4	3.1699	3.0373	2.9137	2.8550	2.7982	2.6901	2.5887	2.4043	2.2410	2.0957	1.9575	
5	3.7908	3.6048	3.4331	3.3522	3.2743	3.1272	2.9906	2.7454	2.5320	2.3452	2.1745	
6	4.3553	4.1114	3.8887	3.7845	3.6847	3.4976	3.3255	3.0205	2.7594	2.5342	2.3322	
7	4.8684	4.5638	4.2883	4.1604	4.0386	3.8115	3.6046	3.2423	2.9370	2.6775	2.4508	
8	5.3349	4.9676	4.6389	4.4873	4.3436	4.0776	3.8372	3.4212	3.0758	2.7860	2.5301	
9	5.7590	5.3282	4.9464	4.7716	4.6065	4.3030	4.0310	3.5655	3.1842	2.8681	2.5822	
10	6.1446	5.6502	5.2161	5.0188	4.8322	4.4941	4.1925	3.6819	3.2689	2.9304	2.5945	
11	6.4951	5.9377	5.4527	5.2337	5.0286	4.6560	4.3271	3.7757	3.3351	2.9776	2.6013	
12	6.8137	6.1944	5.6603	5.4206	5.1971	4.7932	4.4392	3.8514	3.3868	3.0133	2.6013	
13	7.1034	6.4235	5.8424	5.5831	5.3423	4.9095	4.5327	3.9124	3.4272	3.0404	2.6263	
14	7.3667	6.6282	6.0021	5.7245	5.4675	5.0081	4.6106	3.9616	3.4587	3.0609	2.6409	
15	7.6061	6.8109	6.1422	5.8474	5.5755	5.0916	4.6755	4.0013	3.4834	3.0764	2.6554	
16	7.8237	6.9740	6.2651	5.9542	5.6685	5.1624	4.7296	4.0333	3.5026	3.0882	2.6699	
17	8.0216	7.1196	6.3729	6.0472	5.7487	5.2223	4.7746	4.0591	3.5177	3.0971	2.6822	
18	8.2014	7.2497	6.4674	6.1280	5.8178	5.2732	4.8122	4.0797	3.5294	3.1039	2.6935	
19	8.3649	7.3658	6.5504	6.1882	5.8775	5.3163	4.8435	4.0967	3.5386	3.1098	2.7038	
20	8.5136	7.4694	6.6221	6.2593	5.9288	5.3527						

Table A.3 Future Value of \$1 at the End of T Periods = (1 + r)<sup>T</sup>

Period	Interest Rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1236	1.1449	1.1664	1.1881	1.2100
3	1.0304	1.0612	1.0927	1.1249	1.1576	1.1916	1.2263	1.2616	1.2975	1.3340
4	1.0408	1.0824	1.1251	1.1691	1.2144	1.2610	1.3089	1.3581	1.4086	1.4604
5	1.0510	1.1031	1.1565	1.2114	1.2677	1.3254	1.3845	1.4449	1.5066	1.5696
6	1.0615	1.1242	1.1889	1.2558	1.3249	1.3963	1.4691	1.5433	1.6189	1.6959
7	1.0721	1.1457	1.2215	1.2996	1.3799	1.4625	1.5474	1.6346	1.7231	1.8129
8	1.0829	1.1674	1.2453	1.3256	1.4072	1.4911	1.5773	1.6658	1.7565	1.8494
9	1.0937	1.1862	1.2661	1.3485	1.4333	1.5205	1.6101	1.7020	1.7961	1.8924
10	1.1046	1.2071	1.2890	1.3736	1.4607	1.5503	1.6424	1.7370	1.8340	1.9333
11	1.1157	1.2284	1.3123	1.3988	1.4883	1.5807	1.6760	1.7741	1.8749	1.9783
12	1.1269	1.2500	1.3359	1.4244	1.5167	1.6119	1.7100	1.8110	1.9148	2.0213
13	1.1383	1.2719	1.3597	1.4500	1.5459	1.6441	1.7451	1.8480	1.9537	2.0625
14	1.1498	1.2941	1.3856	1.4766	1.5741	1.6753	1.7792	1.8849	1.9933	2.1075
15	1.1616	1.3166	1.4183	1.5034	1.6044	1.7096	1.8164	1.9248	2.0357	2.1572
16	1.1736	1.3394	1.4513	1.5326	1.6364	1.7456	1.8549	1.9649	2.0771	2.2116
17	1.1858	1.3625	1.4854	1.5628	1.6703	1.7787	1.8900	2.0020	2.1322	2.2707
18	1.1981	1.3860	1.5397	1.5951	1.7056	1.8061	1.9193	2.0319	2.1931	2.3345
19	1.2106	1.4098	1.5983	1.6296	1.7447	1.8353	1.9506	2.0636	2.2594	2.4030
20	1.2232	1.4339	1.6583	1.6644	1.7861	1.8777	1.9949	2.1173	2.3324	2.4763
21	1.2360	1.4584	1.7197	1.6993	1.8397	1.9270	2.0481	2.1726	2.4117	2.5545
22	1.2490	1.4832	1.7826	1.7346	1.8939	1.9651	2.1044	2.2294	2.4974	2.6377
23	1.2622	1.5083	1.8480	1.7704	1.9613	2.0000	2.1628	2.2877	2.5897	2.7259
24	1.2756	1.5337	1.9159	1.8067	2.0316	2.0326	2.2234	2.3476	2.6887	2.8191
25	1.2892	1.5594	1.9864	1.8436	2.1053	2.0611	2.2863	2.4091	2.7934	2.9174
26	1.3030	1.5854	2.0596	1.8811	2.1816	2.0964	2.3513	2.4723	2.9149	3.0208
27	1.3170	1.6117	2.1355	1.9192	2.2606	2.1296	2.4186	2.5374	3.0424	3.1294
28	1.3312	1.6383	2.2142	1.9579	2.3428	2.1708	2.4882	2.6054	3.1761	3.2432
29	1.3456	1.6653	2.2957	1.9973	2.4281	2.2150	2.5602	2.6763	3.3161	3.3623
30	1.3602	1.6926	2.3799	2.0374	2.5166	2.2623	2.6343	2.7501	3.4624	3.4867
31	1.3750	1.7202	2.4669	2.0783	2.6084	2.3127	2.7107	2.8268	3.6147	3.6164
32	1.3900	1.7481	2.5567	2.1199	2.7064	2.3662	2.7788	2.9064	3.7732	3.7514
33	1.4052	1.7763	2.6493	2.1623	2.8076	2.4228	2.8494	2.9889	3.9350	3.8917
34	1.4206	1.8048	2.7447	2.2054	2.9121	2.4825	2.9226	3.0743	4.1012	4.0373
35	1.4362	1.8336	2.8429	2.2493	3.0199	2.5394	2.9981	3.1626	4.2716	4.1884
36	1.4520	1.8627	2.9440	2.2939	3.1311	2.6004	3.0760	3.2539	4.4468	4.3451
37	1.4680	1.8921	3.0481	2.3393	3.2467	2.6654	3.1573	3.3482	4.6254	4.5074
38	1.4842	1.9218	3.1553	2.3864	3.3659	2.7344	3.2420	3.4456	4.8083	4.6754
39	1.5006	1.9518	3.2666	2.4343	3.4887	2.8056	3.3293	3.5460	5.0000	4.8491
40	1.5172	1.9821	3.3819	2.4830	3.6152	2.8808	3.4192	3.6495	5.1999	5.0284
41	1.5340	2.0127	3.5013	2.5324	3.7455	2.9599	3.5117	3.7561	5.4056	5.2134
42	1.5510	2.0436	3.6248	2.5826	3.8796	3.0431	3.6168	3.8658	5.6176	5.4044
43	1.5682	2.0748	3.7524	2.6335	4.0176	3.1284	3.7247	3.9786	5.8354	5.6011
44	1.5856	2.1063	3.8842	2.6852	4.1595	3.2176	3.8354	4.0935	6.0594	5.8037
45	1.6032	2.1381	4.0202	2.7377	4.3054	3.3106	3.9490	4.2115	6.2899	6.0124
46	1.6210	2.1702	4.1606	2.7910	4.4553	3.4075	4.0673	4.3326	6.5263	6.2271
47	1.6390	2.2026	4.3056	2.8451	4.6093	3.5093	4.1894	4.4568	6.7689	6.4479
48	1.6572	2.2353	4.4553	2.9000	4.7674	3.6151	4.3144	4.5838	7.0179	6.6754
49	1.6756	2.2683	4.6097	2.9557	4.9296	3.7249	4.4423	4.7133	7.2726	6.9089
50	1.6942	2.3016	4.7689	3.0123	5.0959	3.8388	4.5732	4.8442	7.5342	7.1484
51	1.7130	2.3352	4.9329	3.0697	5.2664	3.9568	4.7071	4.9781	7.8019	7.3939
52	1.7320	2.3691	5.1017	3.1279	5.4411	4.0790	4.8440	5.1150	8.0758	7.6454
53	1.7512	2.4033	5.2754	3.1869	5.6199	4.2049	4.9839	5.2550	8.3541	7.9029
54	1.7706	2.4378	5.4552	3.2467	5.8029	4.3348	5.1268	5.3981	8.6379	8.1664
55	1.7902	2.4726	5.6406	3.3074	5.9901	4.4688	5.2726	5.5442	8.9274	8.4359
56	1.8100	2.5077	5.8308	3.3689	6.1816	4.6069	5.4124	5.6934	9.2228	8.7104
57	1.8300	2.5431	6.0260	3.4313	6.3774	4.7491	5.5640	5.8457	9.5242	8.9900
58	1.8502	2.5788	6.2263	3.4946	6.5775	4.8954	5.7181	6.0011	9.8317	9.2757
59	1.8706	2.6148	6.4317	3.5588	6.7819	5.0454	5.8936	6.1605	10.1454	9.5674
60	1.8912	2.6511	6.6422	3.6239	6.9906	5.2000	6.0817	6.3230	10.4654	9.8641

Table A.4 Future Value of an Annuity of \$1 per Period for T Periods = [(1 + r)<sup>T</sup> - 1] / r

Number of Periods	Interest Rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	2.0100	2.0404	2.0609	2.0816	2.1025	2.1236	2.1449	2.1664	2.1881	2.2100
3	3.0301	3.0604	3.0907	3.1211	3.1516	3.1821	3.2126	3.2431	3.2736	3.3041
4	4.0604	4.1216	4.1828	4.2441	4.3054	4.3667	4.4280	4.4893	4.5506	4.6119
5	5.1010	5.2040	5.3069	5.4100	5.5131	5.6162	5.7193	5.8224	5.9255	6.0286
6	6.1520	6.3081	6.4641	6.6202	6.7763	6.9324	7.0885	7.2446	7.4007	7.5568
7	7.2135	7.4343	7.6551	7.8759	8.0967	8.3175	8.5383	8.7591	8.9799	9.2007
8	8.2857	8.5630	8.8403	9.1176	9.3949	9.6722	9.9495	10.2268	10.5041	10.7814
9	9.3685	9.7546	10.1407	10.5268	10.9129	11.2990	11.6851	12.0712	12.4573	12.8434
10	10.4621	10.9504	11.4387	11.9270	12.4153	12.9036	13.3919	13.8802	14.3685	14.8568
11	11.5673	12.1688	12.7703	13.3718	13.9733	14.5748	15.1763	15.7778	16.3793	16.9808
12	12.6843	13.3992	14.1141	14.8290	15.5439	16.2588	16.9737	17.6886	18.4035	19.1184
13	13.8130	14.6420	15.4710	16.2999	17.1289	17.9578	18.7867	19.6156	20.4445	21.2734
14	14.9544	15.8854	16.8264	17.7674	18.7084	19.6494	20.5904	21.5314	22.4724	23.4134
15	16.1087	17.1599	18.2110	19.2620	20.3131	21.3642	22.4153	23.4664	24.5174	25.5685
16	17.2759	18.4377	19.5888	20.7429	21.8940	23.0351	24.1062	25.1573	26.2684	27.3195
17	18.4561	19.7443	20.9954	22.1530	23.3051	24.6162	25.6773	26.7384	27.8195	28.8706
18	19.6493	21.1116	22.4627	23.5631	24.6152	26.1163	27.2184	28.2795	29.3806	30.4317
19	20.8555	22.5407	23.9318	25.0732	26.1143	27.6154	28.7195	29.7806	30.9417	31.9928
20	22.0747	24.0326	25.4615	26.5833	27.6134	29.1145	30.2206	31.2817	32.5028	33.5539
21	23.3069	25.5883	27.0522	28.0934	29.1125	30.6136	31.7217	32.7828	34.0639	35.1150
22	24.5521	27.2088	28.7029	29.7035	30.7116	32.1127	33.2228	34.2839	35.6260	36.6761
23	25.8103	28.8951	30.4234	31.4136	32.3107	33.6118	34.7239	35.8040	37.1871	38.2372
24	27.0815	30.6482	32.2049	33.2175	34.0098	35.1109	36.2250	37.3051	38.7482	39.7983
25	28.3657	32.4691	34.0584	35.1244	35.8079	36.6090	37.7261	38.8262	40.3093	41.3594
26	29.6629	34.3578	35.9863	37.1353	37.6950	38.0981	39.1472	40.3473	41.8704	42.9205
27	30.9731	36.3153	38.0338	39.2512	39.6831	39.5872	40.6683	41.8684	43.4215	44.4816
28	32.2963	38.3426	40.2000	41.4731	41.7742	41.0763	42.1895	43.3895	44.9826	46.0427
29	33.6325	40.4407	42.3871	43.8120	43.8693	42.5754	43.7106	45.0106	46.5437	47.6038
30	34.9817	42.6106	44.6946	46.2689	45.9684	44.0645	45.2317	46.6317	48.1048	49.1649
31	36.3439	44.8533	47.1175	48.8438	48.0715	45.5636	46.7528	48.1528	49.6659	50.7260
32	37.7191	47.1698	49.6094	51.5680	50.1786	47.1527	48.2739	50.2739	51.2271	52.2871
33	39.1073	49.5609	52.0785	54.4421	52.2897	48.7418	50.7950	52.3950	52.7882	53.8482
34	40.5085	52.0274	54.6216	57.4662	54.4058	50.3309	53.3161	54.9161	55.3493	55.4093
35	41.9227	54.5703	57.2							