

SULIT



KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI

JABATAN PERDAGANGAN

PEPERIKSAAN AKHIR

SESI II : 2022/2023

DPA40103 : FINANCIAL MANAGEMENT 2

TARIKH : 19 JUN 2023

MASA : 11.15 AM – 1.15 PM (2 JAM)

Kertas ini mengandungi **SEBELAS (11)** halaman bercetak.
Bahagian A: Struktur (4 soalan)
Dokumen sokongan yang disertakan : Jadual Nilai Kini & Formula

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIARAHKAN

(CLO yang tertera hanya sebagai rujukan)

SULIT

INSTRUCTION:

This section consists of **FOUR (4)** structure questions. Answer **ALL** questions.

ARAHAN:

*Bahagian ini mengandungi **EMPAT (4)** soalan berstruktur. Jawab **SEMUA** soalan.*

QUESTION 1

- (a) Share is one of the medium that can be used as Long Term Financing for a company. There are two types of shares which are Ordinary Shares and Preference Share.

- (i) List down **FIVE (5)** types of Preference Shares.

[5 marks]

- (ii) Compare **TWO (2)** features between Ordinary Shares and Preference Shares.

[5 marks]

- (b) (i) Discuss **TWO (2)** types of Unsecured Short-Term Credit.

[5 marks]

- (ii) Mr. Zul plans to borrow RM20,000 from the bank to buy inventory. The bank offered to lend the money at an annual interest rate of 10% for six months.

- a. Calculate the annual rate of interest of the loan.

[4 marks]

- b. If the bank requires you to maintain a 15% compensating balance in the bank and the interest is discounted, calculate the cost of the loan.

[6 marks]

SOALAN 1

(a) Saham merupakan salah satu medium yang boleh digunakan sebagai Pembiayaan Jangka Panjang bagi sesebuah syarikat. Terdapat dua jenis saham iaitu Saham Biasa dan Saham Keutamaan.

(i) Senaraikan **LIMA (5)** jenis Saham Keutamaan.

[5 markah]

(ii) Bandingkan **DUA (2)** ciri antara Saham Biasa dan Saham Keutamaan.

[5 markah]

(b) (i) Bincangkan **DUA (2)** jenis Kredit Jangka Pendek Tidak Terjamin.

[5 markah]

(ii) En. Zul merancang untuk meminjam RM20,000 daripada bank untuk membeli inventori. Bank menawarkan untuk meminjamkan wang itu pada kadar faedah tahunan 10 peratus selama enam bulan.

a. Kirakan kadar faedah tahunan pinjaman.

[4 markah]

b. Jika bank memerlukan anda mengekalkan baki pampasan 15% dalam bank dan faedah didiskaunkan. kirakan kos pinjaman.

[6 markah]

QUESTION 2

- (a) Working capital management involves all aspects of the administration of current assets and current liabilities. Identify **FIVE (5)** objectives of working capital management.

[5 marks]

- (b) Ahmad is still new to working capital management. He is concerned about Accounts Receivable Control Operations on the actions that can be taken before giving credit sales to customers. Explain to Ahmad, the guide to controlling Accounts Receivable based on **FIVE (5)** Cs of credit.

[10 marks]

- (c) A company uses 20,000 kg of raw material Y per year. The carrying cost is 10% and the unit price is RM1,000. The fixed cost of each order is RM1,500. Calculate Economic Order Quantity (EOQ) and Order Cost for a year.

[10 marks]

SOALAN 2

- (a) *Pengurusan modal kerja melibatkan semua aspek pentadbiran aset semasa dan liabiliti semasa. Kenalpasti **LIMA (5)** objektif pengurusan modal kerja.*

[5 markah]

- (b) *Ahmad masih baru dalam pengurusan modal kerja. Beliau bimbang tentang Operasi Kawalan Penghutang Akaun atas tindakan yang boleh diambil sebelum memberikan jualan kredit kepada pelanggan. Terangkan kepada Ahmad, panduan mengawal Akaun Belum Terima berdasarkan **LIMA (5)** C kredit.*

[10 markah]

- (c) Sebuah syarikat menggunakan 20,000 kg bahan mentah Y setahun. Kos bawaan ialah 10% dan harga seunit ialah RM1,000. Kos tetap setiap pesanan ialah RM1,500. Kira Kuantiti Pesanan Ekonomi (EOQ) dan Kos Pesanan untuk setahun.

[10 markah]

QUESTION 3

- (a) Indah Bhd. is considering a project using capital budgeting techniques. Compare the acceptance criteria of Accounting Rate of Return, Payback Period, Net Present Value, Internal Rate of Return and Profitability Index.

[5 marks]

- (b) The management of Best Buy Bhd. is considering an investment project for next year but does not want to make any investment that requires more than 3.5 years to recover the firm's initial investment. The cash flows for the the project are as follows:

Year	Project (RM)
0	(10,000)
1	4,300
2	3,200
3	2,200
4	1,000
5	700

The cost of capital is 10%. Calculate the project's:

- (i) Payback Period

[3 marks]

- (ii) Net Present Value (NPV)

[4 marks]

- (iii) Profitability Index (PI)

[3 marks]

- (c) Othman is the newly appointed Finance Executive at Syarikat ABC Bhd. You as the Finance Manager is helping him to understand the concept of acceptance criteria of several projects based on Payback Period, Net Present Value (NPV), Internal Rate of Return and Profitability Index (PI). Please advise Othman to analyze the results below whether to ACCEPT or REJECT Project A and Project B separately for each method, with the appropriate reason.

Method	Required	Project A	Accept/Reject - Reason
Payback Period	4.5	5	
Net Present Value		300	
Internal Rate of Return	10%	12%	
Profitability Index	1.5	2	

Method	Required	Project B	Accept/Reject - Reason
Payback Period	4.5	4	
Net Present Value		RM14,300	
Internal Rate of Return	10%	9%	
Profitability Index	1.5	1	

[10 marks]

SOALAN 3

- (a) Indah Bhd. sedang mempertimbangkan projek menggunakan teknik belanjawan modal. Bandingkan kriteria penerimaan Kadar Pulangan Perakaunan, Tempoh Bayaran Balik, Nilai Semasa Bersih, kadar pulangan dalaman dan Indeks Keberuntungan.

[5 markah]

- (b) *Pengurusan Best Buy Bhd. sedang mempertimbangkan projek pelaburan untuk tahun depan tetapi tidak mahu membuat sebarang pelaburan yang memerlukan lebih daripada 3.5 tahun untuk mendapatkan semula pelaburan awal firma itu. Aliran tunai untuk projek adalah seperti berikut:*

<i>Tahun</i>	<i>Projek (RM)</i>
0	(10,000)
1	4,300
2	3,200
3	2,200
4	1,000
5	700

Sekiranya kos modal adalah 10%. Kirakan:

- (i) *Tempoh Bayaran Balik*

[3 markah]

- (ii) *Nilai Kini Bersih (NKB)*

[4 markah]

- (iv) *Indeks Keberuntungan (IK)*

[3 markah]

- (c) *Othman merupakan Eksekutif Kewangan yang baru dilantik di Syarikat ABC Bhd. Anda sebagai Pengurus Kewangan membantu beliau memahami konsep kriteria penerimaan beberapa projek berdasarkan Tempoh Bayaran Balik, Nilai Kini Bersih (NKB), Kadar Pulangan Dalaman dan Indeks Keberuntungan (IK). Sila nasihatkan Othman untuk menganalisis keputusan di bawah sama ada untuk MENERIMA atau MENOLAK projek, dengan alasan yang sesuai.*

<i>Kaedah</i>	<i>Diperlukan</i>	<i>Projek A</i>	<i>Terima/Tolak - Alasan</i>
<i>Tempoh Bayaran Balik</i>	4.5	5	
<i>Nilai Semasa Bersih</i>		300	

<i>Kadar Pulangan Dalam</i>	<i>10%</i>	<i>12%</i>	
<i>Indeks Keuntungan</i>	<i>1.5</i>	<i>2</i>	

<i>Kaedah</i>	<i>Diperlukan</i>	<i>Projek B</i>	<i>Terima/Tolak - Alasan</i>
<i>Tempoh Bayaran Balik</i>	<i>4.5</i>	<i>4</i>	
<i>Nilai Semasa Bersih</i>		<i>RM14,300</i>	
<i>Kadar Pulangan Dalam</i>	<i>10%</i>	<i>9%</i>	
<i>Indeks Keuntungan</i>	<i>1.5</i>	<i>1</i>	

[10 markah]

QUESTION 4

- (a) Firm's business risk is attributed to a firm business and investment decisions. Define business risk and give **FOUR (4)** examples of business risk.

[5 marks]

- (b) Footwear Inc. manufactures a complete line of men's and women's shoes for independent merchants. The management is considering the best product to invest between Sports Shoes and Snickers due to capital constraints. You have developed the following data for Footwear Inc:

	Sports Shoes (RM)	Snickers (RM)
Sales Price per unit	150	200
Direct Labour per unit	20	30
Direct Expenses per unit	15	20
Fixed Production Overhead	15,000	20,000
Fixed Administration Overhead	20,000	30,000
Expected unit sold	500	400

Footwear Inc. usually evaluate the investment based on profit earn. Choose the best product using the Break-event Point method.

[10 marks]

(c) The following information has been provided to you:

	RM
Sales	150,000
(-) Variable cost	30,000
Contribution Margin	120,000
(-) Fixed cost	40,000
Earning Befor Interest & Taxes	80,000
(-) Interest	10,000
Earning Before Taxes	70,000
(-) Taxes (20%)	14,000
Net Income	56,000

You are required to calculate:

- (i) The degree of Operating Leverage (DOL)
- (ii) The degree of Financial Leverage (DFL)
- (iii) The degree of Combined Leverage (DCL)
- (iv) If the sales decreased by 40%, what is the decrease percentage of earning after taxes?

[10 marks]

SOALAN 4

- (a) *Risiko perniagaan firma adalah disebabkan oleh keputusan perniagaan dan pelaburan yang kukuh. Takrifkan risiko perniagaan dan berikan EMPAT (4) contoh risiko perniagaan.*

[5 markah]

- (b) *Footwear Inc. mengeluarkan kasut lelaki dan wanita. Pihak pengurusan sedang mempertimbangkan produk terbaik untuk melabur antara Kasut Sukan dan Snickers kerana mempunyai kekangan modal. Anda telah membangunkan data berikut untuk Footwear Inc:*

	<i>Kasut Sukan (RM)</i>	<i>Snickers (RM)</i>
<i>Harga Jualan seunit</i>	<i>150</i>	<i>200</i>
<i>Kos Buruh Langsung seunit</i>	<i>20</i>	<i>30</i>
<i>Perbelanjaan Langsung seunit</i>	<i>15</i>	<i>20</i>
<i>Overhead Pengeluaran Tetap</i>	<i>15,000</i>	<i>20,000</i>
<i>Overhead Pentadbiran Tetap</i>	<i>20,000</i>	<i>30,000</i>
<i>Unit Jualan yang dianggarkan</i>	<i>500</i>	<i>400</i>

Footwear Inc. biasanya menilai pelaburan berdasarkan keuntungan yang diperolehi. Pilih produk terbaik menggunakan kaedah Titik Pulang Modal.

[10 markah]

(c) Maklumat berikut telah diberikan kepada anda:

	RM
Jualan	150,000
(-) Kos Berubah	30,000
Margin Sumbangan	120,000
(-) Kos Tetap	40,000
Pendapatan sebelum faedah dan cukai	80,000
(-) Belanja Faedah	10,000
Pendapatan sebelum cukai	70,000
(-) Cukai (20%)	14,000
Untung Bersih	56,000

Anda dikehendaki mengira:

- (i) Tahap Leverage Operasi
- (ii) Tahap Leverage Kewangan
- (iii) Tahap Leverage Gabungan
- (iv) Sekiranya jualan menurun sebanyak 40%, apakah peratusan penurunan pendapatan selepas cukai?

[10 markah]

SOALAN TAMAT

Present Value and Future Value Tables

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	1.0100	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.2000	1.2400	1.2500	1.3000
2	1.0201	1.0404	1.0609	1.0816	1.1025	1.1238	1.1449	1.1664	1.1881	1.2100	1.2321	1.2544	1.2769	1.2996	1.3225	1.3456	1.4400	1.5376	1.5625	1.6900
3	1.0303	1.0612	1.0927	1.1248	1.1576	1.1910	1.2250	1.2597	1.2950	1.3310	1.3676	1.4049	1.4429	1.4815	1.5209	1.5609	1.7280	1.9066	1.9531	2.1970
4	1.0406	1.0824	1.1255	1.1699	1.2155	1.2625	1.3108	1.3605	1.4116	1.4641	1.5181	1.5735	1.6305	1.6890	1.7490	1.8106	2.0736	2.3642	2.4414	2.8561
5	1.0510	1.1041	1.1593	1.2167	1.2763	1.3382	1.4026	1.4693	1.5386	1.6105	1.6851	1.7623	1.8424	1.9254	2.0114	2.1003	2.4683	2.9316	3.0518	3.7129
6	1.0615	1.1262	1.1931	1.2623	1.3340	1.4083	1.4852	1.5648	1.6471	1.7321	1.8198	1.9103	2.0036	2.1000	2.1994	2.3019	2.8000	3.3882	3.5417	4.3268
7	1.0721	1.1487	1.2279	1.3100	1.3950	1.4829	1.5738	1.6678	1.7649	1.8651	1.9684	2.0750	2.1848	2.2979	2.4144	2.5346	3.1000	3.7932	3.9677	4.8749
8	1.0829	1.1717	1.2638	1.3599	1.4599	1.5639	1.6718	1.7838	1.8998	2.0199	2.1441	2.2724	2.4050	2.5429	2.6861	2.8348	3.4500	4.2532	4.4414	5.4749
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6898	1.8389	1.9987	2.1694	2.3519	2.5464	2.7539	2.9744	3.2089	3.4574	3.7209	4.4500	5.3632	5.5614	6.7129
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1599	2.3697	2.5977	2.8441	3.1099	3.3964	3.7039	4.0344	4.3899	5.2000	6.2132	6.4214	7.6749
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4765	3.8289	4.2104	4.6224	5.0659	6.0000	7.1232	7.3314	8.6749
12	1.1268	1.2692	1.4255	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1364	3.4905	3.8761	4.2944	4.7474	5.2374	5.7659	6.8000	8.0332	8.2514	9.6749
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4088	2.7196	3.0658	3.4483	3.8683	4.3274	4.8269	5.3684	5.9539	6.5864	7.7000	9.0332	9.2614	10.7749
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7935	4.2944	4.8461	5.4499	6.1074	6.8214	7.5939	8.8000	10.2332	10.4714	12.0749
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	4.7846	5.4781	6.2694	7.1709	8.1844	9.3199	10.6000	12.1332	12.3814	14.0749
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9622	3.4299	3.9703	4.5950	5.3109	6.1304	7.0673	8.1372	9.3576	10.748	12.188	13.743	14.0000	15.7749
17	1.1843	1.4002	1.6320	1.9479	2.2920	2.6926	3.1888	3.7000	4.3278	5.0545	5.8951	6.8600	7.9611	9.2765	10.761	12.468	14.066	15.741	15.9000	17.7749
18	1.1961	1.4282	1.7024	2.0258	2.4666	2.9543	3.4999	4.1711	4.9599	5.8538	6.8648	7.9900	9.3433	10.875	12.595	14.463	16.163	17.881	17.9000	19.7749
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6185	4.3157	5.1417	6.1159	7.2633	8.6128	10.197	12.056	14.232	16.777	18.585	20.393	20.3000	22.1749
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	8.0623	9.6493	11.523	13.743	16.367	19.461	21.338	23.146	22.9000	24.7749
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0336	6.1088	7.4002	8.9492	10.804	13.021	15.668	18.822	22.574	24.605	26.312	25.8000	27.6749
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4305	6.6566	8.1403	9.9336	12.109	14.714	17.861	21.645	25.186	26.906	28.513	27.5000	29.5749
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8187	4.7405	5.8715	7.2579	8.9543	11.026	13.552	16.627	20.362	24.891	30.376	32.247	34.031	29.2000	31.4749
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	12.239	15.178	18.788	23.212	28.625	35.236	37.197	38.931	30.9000	33.3749
25	1.2824	1.6406	2.0938	2.6658	3.3864	4.2919	5.4274	6.8485	8.6231	10.835	13.585	17.000	21.231	26.462	32.919	40.674	42.596	44.468	32.6000	35.2749
30	1.3478	1.8114	2.4273	3.2434	4.3219	5.7435	7.8123	10.063	13.268	17.449	22.892	29.960	39.116	50.950	66.212	85.560	103.376	120.820	127.794	*
35	1.4166	1.9999	2.8139	3.9461	5.5160	7.6861	10.677	14.785	20.414	28.102	38.675	52.800	72.069	98.100	133.176	180.314	230.668	281.114	301.114	*
40	1.4308	2.0399	2.8983	4.1039	5.7918	8.1473	11.424	15.966	22.251	30.913	42.818	59.136	81.437	111.834	153.152	209.164	278.802	341.114	361.114	*
45	1.4889	2.2080	3.2620	4.8010	7.0400	10.286	14.974	21.725	31.409	45.259	65.001	93.051	132.762	188.884	267.884	378.721	500.114	621.114	641.114	*
50	1.6446	2.8916	4.3839	7.1067	11.467	18.420	29.457	46.902	74.358	117.391	184.565	289.002	450.736	700.233	*	*	*	*	*	*

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	1.0000	1.0200	1.0300	1.0400	1.0500	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500	1.1600	1.2000	1.2400	1.2500	1.3000
2	2.0100	2.0200	2.0300	2.0400	2.0500	2.0600	2.0700	2.0800	2.0900	2.1000	2.1100	2.1200	2.1300	2.1400	2.1500	2.1600	2.2000	2.2400	2.2500	2.3000
3	3.0301	3.0604	3.0909	3.1216	3.1525	3.1836	3.2149	3.2464	3.2781	3.3100	3.3421	3.3744	3.4069	3.4396	3.4725	3.5056	3.6400	3.7776	3.8125	3.9900
4	4.0604	4.1216	4.1836	4.2465	4.3101	4.3746	4.4399	4.5061	4.5731	4.6410	4.7097	4.7793	4.8498	4.9211	4.9934	5.0665	5.3000	5.6842	5.7556	6.1870
5	5.1010	5.2040	5.3091	5.4163	5.5256	5.6371	5.7507	5.8666	5.9847	6.1051	6.2278	6.3528	6.4803	6.6101	6.7424	6.8771	7.1416	7.6204	7.6938	8.2431
6	6.1520	6.3081	6.4664	6.6269	6.7906	6.9575	7.1273	7.2999	7.4753	7.6536	7.8348	8.0189	8.2060	8.3961	8.5892	8.7853	9.1416	9.7204	9.7938	10.4231
7	7.2135	7.4343	7.6625	7.8983	8.1420	8.3938	8.6540	8.9228	9.2004	9.4872	9.7833	10.089	10.405	10.730	11.067	11.414	11.881	12.480	12.553	13.243
8	8.2857	8.5830	8.8923	9.2142	9.5491	9.8975	10.260	10.637	11.028	11.433	11.853	12.289	12.741	13.209	13.692	14.181	14.686	15.316	15.389	16.129
9	9.3685	9.7546	10.159	10.583	11.027	11.491	11.975	12.488	13.021	13.575	14.150	14.746	15.364	16.005	16.668	17.353	17.858	18.598	18.671	19.471
10	10.462	10.950	11.464	12.006	12.578	13.181	13.816	14.487	15.193	15.937	16.722	17.549	18.420	19.337	20.304	21.321	22.395	23.536	23.609	24.471
11	11.567	12.169	12.808	13.486	14.207	14.972	15.784	16.645	17.560	18.531	19.561	20.655	21.814	23.045	24.349	25.733	27.186	28.400	28.473	29.373
12	12.683	13.412	14.192	15.028	15.917	16.870	17.888	18.977	20.141	21.384	22.713	24.133	25.650	27.271	28.990	30.805	32.619	34.114	34.187	35.127
13	13.808	14.680	15.618	16.627	17.713	18.882	20.141	21.495	22.953	24.523	26.212	28.029	29.985	32.089	34.352	36.786	38.911	40.516	40.589	41.529
14	14.947	15.974	17.086	18.282	19.569	21.015	22.550	24.215	26.019	27.975	30.095	32.383	34.861	37.541	40.505	43.672	46.936	48.141	48.214	49.154
15	16.097	17.293	18.589	20.024	21.579	23.276	25.129	27.152	29.361	31.772	34.408	37.280	40.417	43.842	47.580	51.660	55.000	56.205	56.278	57.118
16	17.258	18.639	20.157	21.825	23.667	25.673	27.888	30.324	33.003	35.950	39.190	42.753	46.672	50.980	55.717	60.825	65.242	66.447	66.520	67.360
17	18.430	20.012	21.782	23.698	25.840	28.213	30.840	33.760	36.974	40.545	44.601	49.188	54.269	59.909	66.075	71.713	76.130	77.335	77.408	78.248
18	19.615	21.412	23.414	25.645	28.132	30.906	33.999	37.450	41.301	45.599	50.396	55.750	61.725	68.394	75.836	83.141	88.558	89.763	89.836	90.676
19	20.811	22.841	25.117	27.671	30.539	33.760	37.379	41.446	46.018	51.159	56.939	63.440	70.749	79.069	88.212	98.003	104.420	105.625	105.698	106.538
20	22.019	24.297	26.870	29.778	33.066	36.786	40.995	45.762	51.160	57.275	64.203	72.052	80.947	91.025	102.444	115.380	124.898	126.103	126.176	126.916
21	23.239	25.783	28.676	31.969	35.719	39.993	44.866	50.423	56.765	64.002	72.265	81.699	92.470	104.768	118.810	134.841	144.919	146.124	146.197	1

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%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	28%	30%
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	0.8621	0.8333	0.8065	0.8000	0.7692
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	0.6504	0.6400	0.5917
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7936	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575	0.6407	0.5787	0.5245	0.5120	0.4552
4	0.9610	0.9239	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718	0.5523	0.4923	0.4230	0.4096	0.3501
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972	0.4761	0.4019	0.3241	0.3277	0.2693
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5068	0.4803	0.4556	0.4323	0.4104	0.3349	0.2751	0.2621	0.2072
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	0.2097	0.1694
8	0.9235	0.8555	0.7984	0.7397	0.6879	0.6423	0.5989	0.5580	0.5199	0.4865	0.4539	0.4230	0.3962	0.3726	0.3506	0.3299	0.2526	0.1979	0.1878	0.1226
9	0.9143	0.8388	0.7804	0.7206	0.6645	0.6159	0.5739	0.5340	0.5002	0.4680	0.4361	0.3999	0.3696	0.3462	0.3250	0.3046	0.2243	0.1743	0.1642	0.0943
10	0.9053	0.8203	0.7611	0.7006	0.6489	0.5983	0.5563	0.5163	0.4824	0.4505	0.4192	0.3889	0.3586	0.3352	0.3146	0.2946	0.2115	0.1664	0.1563	0.0725
11	0.8963	0.8043	0.7441	0.6826	0.6289	0.5783	0.5353	0.4943	0.4605	0.4286	0.3973	0.3669	0.3366	0.3132	0.2926	0.2726	0.1885	0.1484	0.1383	0.0588
12	0.8874	0.7895	0.7281	0.6656	0.6119	0.5603	0.5173	0.4763	0.4425	0.4106	0.3793	0.3489	0.3186	0.2952	0.2746	0.2546	0.1705	0.1344	0.1243	0.0448
13	0.8787	0.7730	0.7106	0.6471	0.5924	0.5408	0.4978	0.4568	0.4230	0.3911	0.3607	0.3303	0.2999	0.2765	0.2559	0.2359	0.1518	0.1197	0.1096	0.0299
14	0.8700	0.7579	0.6945	0.6300	0.5753	0.5227	0.4807	0.4397	0.4059	0.3740	0.3436	0.3132	0.2828	0.2594	0.2388	0.2188	0.1347	0.1066	0.0965	0.0168
15	0.8613	0.7430	0.6786	0.6131	0.5584	0.5058	0.4638	0.4228	0.3890	0.3571	0.3267	0.2963	0.2659	0.2425	0.2219	0.2019	0.1178	0.0937	0.0836	0.0039
16	0.8528	0.7284	0.6630	0.5965	0.5418	0.4892	0.4472	0.4062	0.3724	0.3405	0.3101	0.2807	0.2503	0.2269	0.2063	0.1863	0.1022	0.0781	0.0680	0.0022
17	0.8444	0.7142	0.6477	0.5802	0.5255	0.4729	0.4309	0.3899	0.3561	0.3257	0.2953	0.2649	0.2345	0.2111	0.1905	0.1705	0.0864	0.0643	0.0542	0.0014
18	0.8360	0.7002	0.6327	0.5642	0.5095	0.4569	0.4149	0.3739	0.3391	0.3087	0.2783	0.2479	0.2175	0.1941	0.1735	0.1535	0.0694	0.0473	0.0372	0.0006
19	0.8277	0.6864	0.6179	0.5484	0.4937	0.4411	0.3991	0.3581	0.3233	0.2929	0.2625	0.2321	0.2017	0.1783	0.1577	0.1377	0.0536	0.0315	0.0214	0.0000
20	0.8195	0.6730	0.6035	0.5340	0.4793	0.4267	0.3847	0.3437	0.3089	0.2785	0.2481	0.2177	0.1873	0.1639	0.1433	0.1233	0.0392	0.0171	0.0070	0.0000
21	0.8114	0.6598	0.5893	0.5198	0.4651	0.4125	0.3705	0.3295	0.2947	0.2643	0.2339	0.2035	0.1731	0.1497	0.1291	0.1091	0.0250	0.0029	0.0028	0.0000
22	0.8034	0.6468	0.5753	0.5058	0.4511	0.3985	0.3565	0.3155	0.2807	0.2503	0.2200	0.1896	0.1592	0.1358	0.1152	0.0952	0.0111	0.0010	0.0009	0.0000
23	0.7954	0.6342	0.5617	0.4922	0.4375	0.3849	0.3429	0.3019	0.2671	0.2367	0.2063	0.1759	0.1455	0.1221	0.1015	0.0815	0.0074	0.0007	0.0006	0.0000
24	0.7876	0.6217	0.5482	0.4787	0.4240	0.3714	0.3294	0.2884	0.2536	0.2232	0.1928	0.1624	0.1320	0.1086	0.0880	0.0680	0.0032	0.0004	0.0003	0.0000
25	0.7798	0.6095	0.5350	0.4655	0.4108	0.3582	0.3162	0.2752	0.2404	0.2100	0.1796	0.1492	0.1188	0.0954	0.0748	0.0548	0.0024	0.0002	0.0001	0.0000
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	*	*
40	0.6717	0.4529	0.3066	0.2063	0.1420	0.0972	0.0689	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%	28%	30%
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	0.8621	0.8333	0.8065	0.8000	0.7692
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	1.3809
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	1.9813	1.9520	1.8161
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	2.3616	2.1662
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	2.6893	2.4356
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	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5635	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
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	4.6399	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1822	7.7861	7.4353	7.1076	6.8017	6.5162	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
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	5.0168	4.8332	4.1025	3.6819	3.5705	3.0915
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	3.6664	3.1473
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	4.4302	3.8514	3.7251	3.1903
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	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.9866	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5995	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5785	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.836	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2681	5.9642	5.6885	4.7296	4.0333	3.8874	3.2832
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	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.099	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3858	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2822	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913	4.1212	3.9631	3.3198
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	3.3230
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3986	6.0442	4.9245	4.1371	3.9764	3.3254
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	3.9811	3.3272
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	4.9476	4.1474	3.9849	3.3286
30	25.808	22.396	19.800	17.292	15.372	13.765	12.409	11.258	10.274	9.4289	8.6938	8.0552	7.4957	7.0027	6.5660	6.1772	4.9789	4.1601	3.9950	3.3321
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.6442	8.8552	8.1755	7.5856	7.0790	6.6166	6.2153	4.9919	4.1644	3.9984	3.3330
36	30.108	25.689	21.832	18.908	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	3.3331
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.767	9.7791	8.9511	8.2436	7.6344	7.1050	6.6416	6.2355	4.9985	4.1669	3.9995	3.3332
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.9148	9.0417	8.3045	7.6752	7.1327	6.6605	6.2483	4.9986	4.1666	3.9999	3.3333

FORMULA

Operating Cycle = Average age of inventory (AAI) + Average collection period (ACP)

Total carrying cost (TCC) = (inventory average) (carrying cost per unit)
 $= (Q/2) C$

Total ordering cost (TOC) = (times order is made) (each order cost)
 $= (S/Q) O$

Total inventory cost (TIC) = TCC + TOC
 $= (Q/2) C + (S/Q) O$

$$EOQ = \sqrt{\frac{2(S)(O)}{C}}$$

Inventory average = $(EOQ/2) + \text{safety stock}$

Number of annual order = annual requirement / each order quantity (EOQ)

Total inventory cost = Total Carrying Cost (TCC) + Total Ordering Cost (TOC)
 $= [(Q/2) + \text{safety stock}] C + (S/Q) O$

Surrendered discount annual cost =
 (Credit effective cost) $\frac{a}{1-a} \times \frac{360}{c-b}$

Interest = Principal (P) X Rate (R) X Time (T)

Annual effective rate = $\frac{\text{Interest}}{\text{Principal}} \times \frac{1}{\text{Time}}$

Annual effective rate (Discounted) = $\frac{\text{Interest}}{\text{Principal} - \text{Interest}} \times \frac{1}{\text{Time}}$

Effective cost of Interest = $\frac{(\text{Interest} + \text{Fees})}{(\text{Principal} - \text{Interest} - \text{Fees})} \times \frac{1}{\text{Time}}$

$V_b = 1 (PVIFA i, n) + M (PVIF i, n)$

$V_b = 1 (PVIFA i/m, mn) + M (PVIF i/m, mn)$

$V_{ps} = \frac{D}{R_{ps}}, R_{ps} = \frac{D}{V_{ps}}, V_{cs} = \frac{D1}{1 + R_{cs}} + \frac{P1}{1 + R_{cs}}, V_{cs} = \frac{D}{R_{cs}}, V_{cs} = \frac{D1}{R_{cs} - g}, D1 = D_0(1+g)$

Annual Depreciation = $\frac{\text{Cost of depreciable assets} - \text{Scrap Value}}{\text{Asset life}}$

PP = Initial outlay / ACF average

NPV = $(ACF_t \times PVIFA_{i, n}) - IO$

$$IRR = \boxed{IO = \frac{ACF_t}{\sum (1 + IRR)^t}} \quad \boxed{PI = \frac{ACF_t}{\sum \frac{(1+k)^t}{IO}}}$$

$(P \times Q) - [(V \times Q) + F] = EBIT = 0$

BEP (unit), $Q = \frac{F}{P - V}, \text{BEP } (\$) = \text{BEP (unit)} \times \text{sales price}$

BEP (\$), $*S = \frac{F}{1 - \frac{V}{S}}, \text{BEP (unit)} = \text{BEP } (\$) / \text{Sales price per unit}$

DOL (\$) = $(S - VQ) / (S - VQ - F)$

DFL (\$) = $(S - VQ - FC) / (S - VQ - FC - I - [PD \times 1 / (1 - T)])$

DCL = DOL x DFL

DCL (\$) = $(S - VQ) / (S - VQ - FC - I - [PD / (1 - T)])$