



**UNIVERSITI TUN HUSSEIN ONN  
MALAYSIA**

**PEPERIKSAAN AKHIR  
SEMESTER II  
SESI 2008/2009**

NAMA MATA PELAJARAN : EKONOMI KEJURUTERAAN  
KOD MATA PELAJARAN : BPC 3063  
KURSUS : 3 BPA / 3 BPB  
TARIKH PEPERIKSAAN : APRIL 2008  
JANGKA MASA : 3 JAM / 3 HOURS  
ARAHAN : **BAHAGIAN A:**  
JAWAB SEMUA SOALAN  
  
**BAHAGIAN B:**  
JAWAB HANYA EMPAT (4) SOALAN  
SAHAJA DARIPADA ENAM (6)  
SOALAN

KERTAS SOALAN INI MENGANDUNGI 13 MUKA SURAT

**BAHAGIAN A: 20 markah**  
**PART A: 20 marks**

S1 (a) Terangkan LIMA (5) jenis keputusan dalam ekonomi kejuruteraan.  
(10 markah)

Q1 (a) *Explain the FIVE (5) main types of engineering economic decisions.*  
(10 marks)

S2 Terangkan terma-terma di bawah;

(a) Kos tak nampak. (2 markah)

(b) Kos kitaran hidup. (2 markah)

(c) Kos hangus. (2 markah)

(d) Kos lepas. (2 markah)

(e) Kos sut. (2 markah)

Q2 *Explain the following terms;*

(a) *Implicit cost.* (2 marks)

(b) *Life cycle cost.* (2 marks)

(c) *Sunk cost.* (2 marks)

(d) *Opportunity cost.* (2 marks)

(e) *Marginal cost.* (2 marks)

**BAHAGIAN B: 80 markah****PART B: 80 marks**

S3 Berdasarkan maklumat yang diberi, anda dikehendaki mengira Nilai kini bersih (NPW) bagi setiap projek;

- (a) Pembukaan sebuah pasar raya mini telah melibatkan kos sebanyak RM300,000 sebagai kos permulaan. Adalah dijangkakan bahawa pasar raya mini tersebut akan mendapat aliran tunai sebanyak RM20,000 setiap tahun selama lima tahun. Di akhir tahun kelima pasar raya tersebut dapat dijual dengan harga sebanyak RM400,000.

Hitungkan nilai NPW jika MARR adalah bersamaan 10%?

(5 markah)

- (b) Anda dikehendaki menilai tiga projek yang mempunyai aliran tunai dijangka seperti yang ditunjukkan di dalam jadual S3 di bawah;

**Jadual S3 : Aliran Tunai bagi Projek A, B dan C**

Aliran Tunai (RM)			
Tahun	Projek A	Projek B	Projek C
0	-26,000	-500,000	-100,000
1	4,000	100,000	0
2	4,000	120,000	0
3	4,000	140,000	0
4	4,000	160,000	30,000
5	4,000	180,000	40,000
6	4,000	200,000	0
7	4,000	-	60,000
8	4,000	-	70,000
9	4,000	-	-
10	4,000	-	-

Diandaikan kos modal bagi semua projek tersebut adalah 10%. Dengan menggunakan teknik NPW, jelaskan sama ada anda perlu melabur dalam kesemua pelaburan.

(15 markah)

**Q3** Based on the information given, you are required to calculate the Net Present Worth (NPW) to evaluate each project:

- (a) The opening of a mini market involves the cost of RM300,000 as the initial capital. It is expected that the mini market will generate a cash flow of RM20,000 every year for a period of five years. At the end of the fifth year, the mini market can be sold to generate a cash flow of RM400,000.

Calculate the NPW if the MARR is equivalent to 10%.

(5 marks)

- (b) You are required to evaluate three projects that have a cash flow estimation as shown in the table Q3 below:

**Table Q3: Cash Flow of Project A, B and C**

<b>Cash Flow (RM)</b>			
<b>Year</b>	<b>Project A</b>	<b>Project B</b>	<b>Project C</b>
0	-26,000	-500,000	-100,000
1	4,000	100,000	0
2	4,000	120,000	0
3	4,000	140,000	0
4	4,000	160,000	30,000
5	4,000	180,000	40,000
6	4,000	200,000	0
7	4,000	-	60,000
8	4,000	-	70,000
9	4,000	-	-
10	4,000	-	-

If the cost of capital for these projects is 10%, explain whether you make investments in all these projects? Used the NPW technique.

(15 marks)

- S4 Syarikat XYZ dalam proses memilih dua jenis projek iaitu projek M dan projek N yang mempunyai risiko yang sama dan sifat saling menyingkiri. Aliran tunai yang berkaitan bagi kedua jenis projek ini ditunjukkan di jadual di bawah. Andaikan MARR adalah 10%.

**Jadual S4 : Aliran Tunai bagi Projek M dan N**

	Projek M	Projek N
Kos permulaan ( $CF_0$ )	Rm28,500	RM27,000
<b>Tahun (n)</b>	<b>Aliran tunai masuk (<math>CF_n</math>)</b>	
1	RM10,000	RM11,000
2	RM10,000	RM10,000
3	RM10,000	RM9,000
4	RM10,000	RM,8000

- (a) Hitungkan tempoh bayaran balik. (4 markah)
- (b) Hitungkan nilai kini bersih (*NPV*) setiap projek. (6 markah)
- (c) Hitungkan kadar pulangan dalaman (*IRR*) bagi setiap projek. (6 markah)
- (d) Nyatakan secara ringkas keutamaan yang ditetapkan bagi setiap pengukuran yang telah dibuat dan nyatakan projek mana yang anda cadangkan. (4 markah)
- Q4 *XYZ Company is in process of choosing the better of two equal risk, mutually exclusive capital expenditure project-M and N. The relevant cash flow for each project are shown in the following table. Assumed MARR is 14%.*

**Table Q4 : Cash Flow of Project M and N**

	Project M	Project N
Initial investment ( $CF_0$ )	Rm28,500	RM27,000
<b>Year (n)</b>	<b>Cash inflows (<math>CF_n</math>)</b>	
1	RM10,000	RM11,000
2	RM10,000	RM10,000
3	RM10,000	RM9,000
4	RM10,000	RM,8000

- (a) Calculate each project's payback period. (4 marks)
- (b) Calculate the net present worth (*NPV*) for each project. (6 marks)

(c) Calculate the internal rate of return (IRR) for each project. (6 marks)

(d) State the preferences dictated by each measure you calculated and indicate which project would you recommend. (4 marks)

S5 Berdasarkan maklumat di bawah, anda di kehendaki menilai setiap projek;

(a) Jadual S5 (1) menunjukkan hasil dan kos bagi mesin pengeluaran yang baru.

**Jadual S5 (1) : Kos, Hasil, Perbelanjaan, Nilai Sisa dan Jangka Hayat Mesin**

Item	Nilai
Kos permulaan (P), RM	-15,000
Hasil Jualan tahunan (A1), RM	7,000
Perbelanjaan tahunan (A2), RM	-3,000
Nilai sisa (F), RM	3,500
Jangka hayat (n) tahun	5

Jika kadar pulangan minimum yang diperlukan (MARR)= 10%.

(i) Hitungkan Aliran Tunai Bersih Tahunan (NAW). (2 markah)

(ii) Hitung Nilai kini bersih (NPW). (4 markah)

(iii) Nyatakan sama ada projek tersebut menguntungkan. (2 markah)

- (b) Syarikat X merancang membeli satu dari dua buah mesin pengeluaran. Jadual S5 (2) menerangkan tentang kos dan pulangan bagi setiap mesin tersebut.

**Jadual S5 (2) : Perbandingan Kos, Hasil, Nilai Sisa dan Jangka Hayat Mesin X dan Mesin Z**

Items	Machine X	Machine Z
Kos permulaan, RM	-35,000	-68,000
Pulangan bersih tahunan, RM	10,000	20,000
Nilai sisa, RM	5,000	8,000
Jangka hayat, tahun	5	5

Diandaikan MARR adalah 15%. Dengan menggunakan analisis nilai kini (NPW),

Nyatakan mesin manakah yang anda akan pilih serta berikan sebabnya.

(6 markah)

- (c) Jadual S5 (3) di bawah menunjukkan maklumat kos dan hasil mesin A dan mesin B.

**Jadual S5 (3) : Perbandingan Kos, Pulangan, Nilai Sisa dan Jangka Hayat Mesin A dan Mesin B**

Item	Mesin A	Mesin B
Kos permulaan, RM	-35,000	-60,000
Pulangan bersih tahunan, RM	-10,000	-12,000
Nilai sisa, RM	5,000	10,000
Jangka hayat, tahun	2	4

Seorang jurutera mekanikal ingin menilai dua jenis mesin. Jangka hayat kedua mesin tersebut berbeza.

Nyatakan mesin manakah yang patut dipilih dengan menggunakan kaedah Nilai Kini (PW) jika kadar faedah adalah 15% setahun.

(6 markah)

S5 Based on the information below, you are required to evaluate each project:

(a) The following table Q5 (1) explain about revenue and cost for new production machine.

**Jadual Q5 (1) : Cost, Revenue, Expenditure, Residual Value and Useful Life of Machine**

Items	Value
Initial cost (P), RM	-15,000
Annual sales revenue (A1), RM	7,000
Annual expenditure (A2), RM	-3,000
Residual value (F), RM	3,500
Useful life (n) year	5

If the minimum annual rate return require (MARR)= 10%, find:

- (i) Calculate Net annual worth (NAW). (2 marks)
- (ii) Calculate Net present worth (NPW). (4 marks)
- (iii) State whether the is profitable. (2 marks)

(b) Company X is planning to buy one of two machine for production. The following table Q5 (2) explain about the cost and return for each machine.

**Jadual Q5 (2) : Comparrison of Cost, Profit, Salvage Value and Useful Life of Machine X and Machine Z**

Items	Machine X	Machine Z
Initial cost, RM	-35,000	-68,000
Net annual profit, RM	10,000	20,000
Salvage value, RM	5,000	8,000
Useful life, year	5	5

Perform present worth analysis, if MARR is 15%, and determine which machine will be choosen.

State which machine will be choosen.

(6 marks)



- (c) The following table Q5 (3) explain about the cost of machine A and machine B.

**Table Q5 (3) : Comparison of Cost, Annual Cost, Salvage Value and Useful life of Mache A and machine B**

Items	Machine A	Machine B
Initial cost, RM	-35,000	-60,000
Annual cost, RM	-10,000	-12,000
Salvage value, RM	5,000	10,000
Useful life, year	2	4

The mechanical engineer would like to evaluate two machines. The useful life for the machine are different.

State which machine should be choosen using the present worth (PW) method if the interest rate is 15% per year.

(6 marks)

- S6 Berdasarkan maklumat yang diberi, anda dikehendaki menilai projek kerajaan negeri Johor.

- (a) Kerajaan negeri Johor menimbangkan untuk sebuah projek pembesaran lebuh raya dengan data yang diberi:

**Jadual S6 : Kos dan Faedah Projek Pembesaran Lebuh Raya**

Kos permulaan	\$1,500,000
Kos operasi/penyelenggaraan tahunan	65,000
Tabungan dan faedah kepada pengguna setahun.	225,000
Nilai sisa selepas jagka hanyat.	300,000
Jangka hayat pelaburan	30 years
Kadar faedah	8%

Dengan menggunakan kaedah Faedah/Kos (B/C);

- (i) Hitung Nilai kini (PW). (3 markah)
- (ii) Hitung Nilai hadapan (FW). (3 markah)
- (iii) Hitung Nilai tahunan (AW). (3 markah)

(iv) Nyatakan sama ada projek tersebut patut dilaksanakan.

(1 markah)

- (b) Kerajaan negeri Johor cuba menentukan alatan manakah yang patut dipasang bagi mengurangkan kos dalam sesuatu situasi. Kedua kos alatan tersebut berjumlah RM1000 dan mempunyai jangka hayat 5 tahun dan tidak mempunyai nilai sisa. Alatan A dijangkakan akan mengurangkan kos tahunan sebanyak RM300. Alatan B pula akan mengurangkan kos sebanyak RM400 pada tahun pertama, tetapi pengurangan kos akan turun sebanyak RM50 setahun iaitu, RM350 pada tahun kedua, RM300 pada tahun ketiga dan RM250 pada tahun keempat. Jika kadar faedah adalah 7%,

Nyatakan alatan mana yang patut dibeli oleh kerajaan negeri Johor dengan menggunakan kaedah B/C.

(10 markah)

**Q6** Based on the information given, you are required to evaluate the state government of Johor project.

- (a) The State Government of Johor is considering for a highway expansion project with data given as follows;

**Table Q6 : Cost and Benefit For Highway Expansion**

Initial costs of expansion	\$1,500,000
Annual costs for operating/maintenance	65,000
Annual savings and benefits to travelers	225,000
Scrap value after useful life	300,000
Useful life of investment	30 years
Interest rate	8%

By using Benefit/Cost (B/C) method calculate;

- (i) Calculate Present worth (PW). (3 marks)
- (ii) Calculate Future worth (FW). (3 marks)
- (iii) Calculate Annual worth (AW). (3 marks)
- (iv) State whether the project should be extended. (1 marks)

- (b) *Johor State Government is trying to decide which of two devices to install to reduce costs in a particular situation. Both devices cost \$1000 and have useful lives of 5 years and no salvage value. Device A can be expected to result in \$300 savings annually. Device B will provide cost savings of \$400 the first year, but savings will decline by \$50 annually, making the second-year savings \$350, the third-year savings \$300, and so forth. With interest at 7%,*

*Which device should the Johor Government purchase? Used B/C method; (10 marks)*

*\$ 250 Yen*

- S7 Soalan berikut adalah berkaitan dengan inflasi. Jadual S7 menunjukkan indeks harga pengguna dari tahun 1995 hingga 2001.

Jadual S7 : Indeks Harga Pengguna Dari Tahun 1994- 2001

Tahun (t)	IHP (1994 = 100)
1995	100.0
1996	102.5
1997	106.0
1998	108.5
1999	114.7
2000	117.9
2001	119.9

- (a) Hitungkan kadar inflasi dari tahun 1995 hingga 1996. (5 markah)
- (b) Jika tahun 1995 adalah tahun asas, kirakan kadar inflasi purata bagi tahun 1995 hingga tahun 2001? (15 markah)

- Q7 The following question are about the case of inflation. Table Q7 indicate the consumer price index from 1995 to 2001.

Table Q7 : Consumer Price Index From 199~~5~~<sup>5</sup> - 2001

Year (t)	CPI (1994 = 100)
1995	100.0
1996	102.5
1997	106.0
1998	108.5
1999	114.7
2000	117.9
2001	119.9

- (a) Calculate the inflation rate for the year 199~~5~~<sup>5</sup> and year 2001. (5 marks)
- (b) If year 199~~5~~<sup>5</sup> is the base year, calculate the average of inflation for the year 1995 to 200~~0~~<sup>1</sup>. (15 marks)
- S8 Syarikat X Sdn Bhd telah membeli sebuah lori dengan kos permulaan sebanyak RM120,000. Lori tersebut dijangkakan dapat digunakan dengan produktif selama 6 tahun. Selepas tempoh tersebut, nilai sisa lori tersebut adalah RM28,000;
- (a) Hitungkan susutnilai dengan menggunakan kaedah garis lurus. (4 markah)
- (b) Dengan menggunakan kaedah garis lurus sediakan jadual yang menunjukkan perbelanjaan susut nilai tahunan, susutnilai terkumpul, dan nilai buku lori tersebut sehingga akhir penggunaannya. (16 markah)

**Q8** *Company X Sdn Bhd bought truck with initial cost RM120,000. That truck is expected can be productively used for 6 years. After that period the salvage value of that truck is RM28,000.*

*(a) Calculate depreciation value of that truck if we used straight line method.  
(8 marks)*

*(b) By using straight line method develop a table that shown Annual Depreciation Expense, Accumulated Depreciation and book value of that truck until at the end of the useful life.  
(16 marks)*

**KERTAS SOALAN TAMAT**

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
 MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
 KOD MATAPELAJARAN : BPC 3063

RADUAL 1 - Aliran Tunai Diskret: Faktor Faedah Kompaun								i=6%
n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount F/P	Present Worth P/P	Sinking Fund A/F	Compound Amount F/A	Capital Recovery A/P	Present Worth P/A	Gradient Present Worth P/G	Gradient Uniform Series A/G
1	1.0600	0.9434	1.00000	1.0000	1.06000	0.9434		
2	1.1236	0.8900	0.48544	2.0600	0.54344	1.8334	0.8900	0.4854
3	1.1910	0.8396	0.31411	3.1836	0.37411	2.6730	2.5692	0.9612
4	1.2625	0.7921	0.22859	4.3746	0.28859	3.4631	4.9455	1.4272
5	1.3382	0.7473	0.17740	5.6371	0.23740	4.2124	7.9345	1.8836
6	1.4185	0.7050	0.14336	6.9753	0.20336	4.9173	11.4594	2.3304
7	1.5036	0.6651	0.11914	8.3938	0.17914	5.5824	15.4497	2.7676
8	1.5938	0.6274	0.10104	9.8975	0.16104	6.2098	19.8416	3.1952
9	1.6895	0.5919	0.08702	11.4913	0.14702	6.8017	24.5768	3.6133
10	1.7908	0.5584	0.07587	13.1808	0.13587	7.3601	29.6023	4.0220
11	1.8983	0.5268	0.06679	14.9716	0.12679	7.8869	34.8702	4.4213
12	2.0122	0.4970	0.05928	16.8699	0.11928	8.3838	40.3369	4.8113
13	2.1329	0.4688	0.05296	18.8821	0.11296	8.8527	45.9629	5.1920
14	2.2609	0.4423	0.04758	21.0151	0.10758	9.2950	51.7128	5.5635
15	2.3966	0.4173	0.04296	23.2760	0.10296	9.7122	57.5546	5.9260
16	2.5404	0.3936	0.03895	25.6725	0.09895	10.1039	63.4592	6.2794
17	2.6928	0.3714	0.03544	28.2129	0.09544	10.4773	69.4011	6.6240
18	2.8543	0.3503	0.03236	30.9057	0.09236	10.8276	75.3369	6.9597
19	3.0256	0.3305	0.02962	33.7600	0.08962	11.1581	81.3062	7.2867
20	3.2071	0.3118	0.02718	36.7856	0.08718	11.4699	87.2304	7.6051
21	3.3996	0.2942	0.02500	39.9927	0.08500	11.7641	93.1136	7.9151
22	3.6033	0.2775	0.02305	43.3923	0.08305	12.0416	98.9412	8.2166
23	3.8197	0.2618	0.02128	46.9958	0.08128	12.3034	104.7007	8.5099
24	4.0489	0.2470	0.01968	50.8156	0.07968	12.5504	110.3812	8.7951
25	4.2919	0.2330	0.01823	54.8645	0.07823	12.7834	115.9732	9.0722
26	4.5494	0.2198	0.01690	59.1564	0.07690	13.0032	121.4684	9.3414
27	4.8223	0.2074	0.01570	63.7058	0.07570	13.2105	126.8600	9.6029
28	5.1117	0.1956	0.01459	68.5281	0.07459	13.4062	132.1420	9.8568
29	5.4184	0.1846	0.01358	73.6398	0.07358	13.5907	137.3096	10.1032
30	5.7435	0.1741	0.01265	79.0582	0.07265	13.7648	142.3588	10.3422
31	6.0881	0.1643	0.01179	84.8017	0.07179	13.9291	147.2844	10.5740
32	6.4534	0.1550	0.01100	90.8898	0.07100	14.0840	152.0901	10.7988
33	6.8406	0.1462	0.01027	97.3432	0.07027	14.2302	156.7681	11.0166
34	7.2510	0.1379	0.00960	104.1838	0.06960	14.3681	161.3192	11.2276
35	7.6861	0.1301	0.00897	111.4348	0.06897	14.4982	165.7427	11.4319
40	10.2857	0.0972	0.00646	154.7620	0.06646	13.0463	185.9568	12.3390
45	13.7646	0.0727	0.00470	212.7435	0.06470	15.4558	203.1096	13.1413
50	18.4202	0.0543	0.00344	290.3359	0.06344	15.7619	217.4374	13.7964
55	24.6503	0.0406	0.00254	394.1720	0.06254	15.9905	229.3223	14.3411
60	32.9877	0.0303	0.00188	533.1262	0.06188	16.1614	239.0628	14.7909
65	44.1450	0.0227	0.00139	719.0829	0.06139	16.2891	246.9450	15.1601
70	59.0759	0.0169	0.00103	967.9322	0.06103	16.3845	253.3271	15.4613
75	79.0569	0.0126	0.00077	1300.95	0.06077	16.4558	258.4527	15.7058
80	105.7960	0.0095	0.00057	1746.60	0.06057	16.5091	262.5493	15.9033
85	141.3789	0.0071	0.00043	2342.98	0.06043	16.5489	265.8096	16.0620
90	189.4645	0.0053	0.00032	3141.08	0.06032	16.5787	268.3946	16.1891
96	253.5463	0.0039	0.00024	4209.10	0.06024	16.6009	270.4375	16.2905
108	368.7590	0.0027	0.00017	5662.65	0.06017	16.6047	270.7909	16.3081
120	501.9776	0.0020	0.00012	7616.29	0.06012	16.6115	271.4491	16.3411
144	739.3021	0.0015	0.00008	10338.37	0.06008	16.6175	272.0471	16.3711

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JADUAL 2 - Aliran Tunai Diskret: Faktor Peadah Kompaun i=7%								
n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount P/P	Present Worth P/P	Sinking Fund A/F	Compound Amount F/A	Capital Recovery A/P	Present Worth P/A	Gradient Present Worth P/G	Gradient Uniform Series A/G
1	1.0700	0.9346	1.00000	1.0000	1.0700	0.9346		
2	1.1449	0.8734	0.48309	2.0700	0.55309	1.8080	0.8754	0.4831
3	1.2250	0.8163	0.31105	3.2149	0.38105	2.6243	2.5060	0.9549
4	1.3108	0.7629	0.22523	4.4399	0.29523	3.3872	4.7947	1.4155
5	1.4026	0.7130	0.17389	5.7507	0.24389	4.1002	7.6467	1.8650
6	1.5007	0.6663	0.13980	7.1533	0.20980	4.7665	10.9784	2.3032
7	1.6058	0.6227	0.11553	8.6340	0.18353	5.3893	14.7149	2.7304
8	1.7182	0.5820	0.09747	10.2398	0.16147	5.9713	18.7889	3.1465
9	1.8385	0.5439	0.08349	11.9780	0.15349	6.5152	23.1404	3.5517
10	1.9672	0.5083	0.07238	13.8164	0.14238	7.0236	27.7156	3.9461
11	2.1049	0.4751	0.06336	15.7836	0.13336	7.4987	32.4665	4.3296
12	2.2522	0.4440	0.05590	17.8885	0.12590	7.9427	37.3506	4.7032
13	2.4098	0.4150	0.04965	20.1406	0.11965	8.3577	42.3302	5.0648
14	2.5785	0.3878	0.04434	22.5405	0.11434	8.7455	47.3718	5.4167
15	2.7590	0.3624	0.03979	25.1290	0.10979	9.1079	52.4461	5.7583
16	2.9522	0.3387	0.03586	27.8881	0.10586	9.4466	57.5271	6.0897
17	3.1588	0.3166	0.03243	30.8402	0.10243	9.7632	62.5923	6.4110
18	3.3799	0.2959	0.02941	33.9990	0.09941	10.0591	67.6219	6.7225
19	3.6163	0.2765	0.02675	37.3790	0.09675	10.3356	72.5991	7.0242
20	3.8697	0.2584	0.02439	40.9955	0.09439	10.5940	77.5091	7.3163
21	4.1406	0.2415	0.02229	44.8632	0.09229	10.8355	82.3393	7.5990
22	4.4304	0.2257	0.02041	49.0057	0.09041	11.0612	87.0793	7.8725
23	4.7405	0.2109	0.01871	53.4361	0.08871	11.2722	91.7201	8.1369
24	5.0724	0.1973	0.01719	58.1767	0.08719	11.4693	96.2545	8.3923
25	5.4274	0.1842	0.01581	63.2490	0.08581	11.6536	100.6765	8.6391
26	5.8074	0.1722	0.01456	68.6765	0.08456	11.8258	104.9814	8.8773
27	6.2139	0.1609	0.01343	74.4838	0.08343	11.9867	109.1656	9.1072
28	6.6488	0.1504	0.01239	80.6977	0.08239	12.1371	113.2264	9.3289
29	7.1143	0.1406	0.01145	87.3465	0.08145	12.2777	117.1622	9.5427
30	7.6123	0.1314	0.01059	94.4608	0.08059	12.4090	120.9718	9.7487
31	8.1451	0.1228	0.00980	102.0730	0.07980	12.5318	124.6550	9.9471
32	8.7153	0.1147	0.00907	110.2182	0.07907	12.6466	128.2120	10.1381
33	9.3253	0.1072	0.00841	118.9334	0.07841	12.7538	131.6435	10.3219
34	9.9781	0.1002	0.00780	128.2388	0.07780	12.8540	134.9507	10.4987
35	10.6766	0.0937	0.00723	138.2369	0.07723	12.9477	138.1553	10.6687
40	14.9745	0.0668	0.00501	199.6351	0.07501	13.3317	152.2928	11.4233
45	21.0025	0.0476	0.00350	285.7493	0.07350	13.6055	163.7539	12.0360
50	29.4570	0.0339	0.00246	406.5289	0.07246	13.8007	172.9051	12.5287
55	41.3150	0.0242	0.00174	575.9286	0.07174	13.9399	180.3243	12.9215
60	57.9464	0.0173	0.00123	813.5204	0.07123	14.0392	185.7677	13.2321
65	81.2729	0.0123	0.00087	1146.76	0.07087	14.1099	190.1432	13.4760
70	113.9894	0.0088	0.00062	1614.13	0.07062	14.1604	193.5183	13.6662
75	159.8760	0.0063	0.00044	2269.66	0.07044	14.1964	196.1035	13.8136
80	224.2344	0.0045	0.00031	3189.06	0.07031	14.2220	198.0748	13.9273
85	314.5003	0.0032	0.00022	4478.58	0.07022	14.2403	199.5717	14.0146
90	441.1030	0.0023	0.00016	6287.19	0.07016	14.2533	200.7042	14.0812
95	618.6697	0.0016	0.00011	8823.85	0.07011	14.2626	201.5581	14.1319
96	661.9766	0.0015	0.00011	9442.52	0.07011	14.2641	201.7016	14.1405
98	737.8970	0.0013	0.00009	10813	0.07009	14.2669	201.9651	14.1562
100	867.7163	0.0012	0.00008	12382	0.07008	14.2693	202.2001	14.1701

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
KOD MATAPELAJARAN : BPC 3063

JADUAL 3 - Aliran Tunai Diskret: Faktor Freadh Kompaun i = 8%

n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount P/P	Present Worth P/P	Sinking Fund A/F	Compound Amount F/A	Capital Recovery A/P	Present Worth P/A	Gradient Present Worth P/G	Gradient Uniform Series A/G
1	1.0800	0.9259	1.00000	1.0000	1.0800	0.9259		
2	1.1664	0.8573	0.48077	2.0800	0.56077	1.7833	0.8573	0.4808
3	1.2597	0.7938	0.30803	3.2464	0.38803	2.5771	2.4450	0.9487
4	1.3605	0.7350	0.22192	4.5061	0.30192	3.3121	4.6501	1.4040
5	1.4693	0.6806	0.17046	5.8666	0.25046	3.9927	7.3724	1.8465
6	1.5869	0.6302	0.13632	7.3359	0.21632	4.6229	10.5233	2.2763
7	1.7138	0.5835	0.11207	8.9228	0.19207	5.2064	14.0242	2.6937
8	1.8509	0.5403	0.09401	10.6366	0.17401	5.7466	17.8061	3.0985
9	1.9990	0.5002	0.08008	12.4876	0.16008	6.2469	21.8081	3.4910
10	2.1589	0.4632	0.06903	14.4866	0.14903	6.7101	25.9768	3.8713
11	2.3316	0.4289	0.06008	16.6455	0.14008	7.1390	30.2637	4.2395
12	2.5182	0.3971	0.05270	18.9771	0.13270	7.5361	34.6339	4.5957
13	2.7196	0.3677	0.04652	21.4953	0.12652	7.9038	39.0463	4.9402
14	2.9372	0.3405	0.04130	24.2149	0.12130	8.2442	43.4723	5.2731
15	3.1722	0.3152	0.03683	27.1521	0.11683	8.5595	47.8857	5.5945
16	3.4259	0.2919	0.03298	30.3243	0.11298	8.8514	52.2640	5.9046
17	3.7000	0.2703	0.02963	33.7502	0.10963	9.1216	56.5883	6.2037
18	3.9966	0.2502	0.02670	37.4502	0.10670	9.3719	60.8426	6.4920
19	4.3157	0.2317	0.02413	41.4463	0.10413	9.6036	65.0134	6.7697
20	4.6610	0.2145	0.02185	45.7620	0.10185	9.8181	69.0898	7.0369
21	5.0338	0.1987	0.01983	50.4229	0.09983	10.0168	73.0629	7.2940
22	5.4365	0.1839	0.01801	55.4568	0.09801	10.2007	76.9257	7.5412
23	5.8715	0.1703	0.01642	60.8933	0.09642	10.3711	80.6726	7.7786
24	6.3412	0.1577	0.01498	66.7648	0.09498	10.5284	84.2997	8.0066
25	6.8483	0.1460	0.01368	73.1059	0.09368	10.6748	87.8041	8.2254
26	7.3964	0.1352	0.01251	79.9544	0.09251	10.8100	91.1842	8.4352
27	7.9881	0.1252	0.01145	87.3506	0.09145	10.9352	94.4390	8.6363
28	8.6271	0.1159	0.01049	95.3386	0.09049	11.0511	97.5687	8.8289
29	9.3173	0.1073	0.00962	103.9659	0.08962	11.1584	100.5738	9.0133
30	10.0627	0.0994	0.00883	113.2832	0.08883	11.2578	103.4558	9.1897
31	10.8677	0.0920	0.00811	123.3459	0.08811	11.3498	106.2163	9.3584
32	11.7371	0.0852	0.00745	134.2135	0.08745	11.4350	108.8575	9.5197
33	12.6760	0.0789	0.00685	145.9506	0.08685	11.5139	111.3819	9.6737
34	13.6901	0.0730	0.00630	158.6267	0.08630	11.5869	113.7924	9.8208
35	14.7853	0.0676	0.00580	172.3168	0.08580	11.6546	116.0920	9.9611
40	21.7245	0.0460	0.00386	259.0563	0.08386	11.9246	126.0422	10.5699
45	31.9204	0.0313	0.00259	386.5056	0.08259	12.1084	133.7331	11.0647
50	46.9016	0.0213	0.00174	573.7302	0.08174	12.2353	139.3928	11.4107
55	68.9139	0.0145	0.00118	848.9232	0.08118	12.3186	144.0065	11.6902
60	101.2571	0.0099	0.00080	1253.21	0.08080	12.3766	147.5000	11.9015
65	148.7798	0.0067	0.00054	1847.25	0.08054	12.4160	149.7387	12.0602
70	218.6064	0.0046	0.00037	2720.08	0.08037	12.4428	151.5326	12.1783
75	321.2045	0.0031	0.00025	4002.56	0.08023	12.4611	152.8448	12.2658
80	471.9548	0.0021	0.00017	5886.94	0.08017	12.4735	153.8001	12.3301
85	693.4565	0.0014	0.00012	8655.71	0.08012	12.4820	154.4925	12.3772
90	1018.92	0.0010	0.00008	12724	0.08008	12.4877	154.9925	12.4116
95	1497.32	0.0007	0.00005	18702	0.08005	12.4917	155.3524	12.4365
96	1616.89	0.0006	0.00005	20199	0.08005	12.4923	155.4112	12.4406
98	1885.94	0.0005	0.00004	23562	0.08004	12.4934	155.5176	12.4480
100	2199.76	0.0005	0.00004	27485	0.08004	12.4943	155.6107	12.4543



## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
 MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
 KOD MATAPELAJARAN : BPC 3063

**JADUAL 4 - Aliran Tunai Diskret: Faktor Faedah Kompaun** i = 9%

n	Single Payments		Uniform Series Payments			Arithmetic Gradients	
	Compound Amount P/F	Present Worth P/F	Sinking Fund A/F	Compound Amount F/A	Capital Recovery AP	Gradient Present Worth FIG	Gradient Uniform Series A/G
1	1.0900	0.9174	1.00000	1.0000	1.09000	0.9174	
2	1.1881	0.8417	0.47847	2.0900	0.56847	1.7591	0.8417
3	1.2950	0.7722	0.30905	3.2781	0.39905	2.5313	2.3860
4	1.4116	0.7084	0.21867	4.5731	0.30867	3.2397	4.5113
5	1.5386	0.6499	0.16709	5.9847	0.25709	3.8897	7.1110
6	1.6771	0.5962	0.13292	7.5233	0.22292	4.4859	10.0924
7	1.8280	0.5470	0.10869	9.2004	0.19869	5.0330	13.3746
8	1.9926	0.5019	0.09067	11.0283	0.18067	5.5348	16.8877
9	2.1719	0.4604	0.07680	13.0210	0.16680	5.9952	20.5711
10	2.3674	0.4224	0.06582	15.1929	0.15582	6.4177	24.3728
11	2.5804	0.3875	0.05695	17.5603	0.14695	6.8052	28.2481
12	2.8127	0.3555	0.04965	20.1407	0.13965	7.1607	32.1590
13	3.0658	0.3262	0.04357	22.9334	0.13357	7.4869	36.0731
14	3.3417	0.2992	0.03843	26.0192	0.12843	7.7862	39.9633
15	3.6425	0.2745	0.03406	29.3609	0.12406	8.0607	43.8069
16	3.9703	0.2519	0.03030	33.0004	0.12030	8.3126	47.5849
17	4.3276	0.2311	0.02705	36.9737	0.11705	8.5436	51.2821
18	4.7171	0.2120	0.02421	41.3013	0.11421	8.7536	54.8860
19	5.1417	0.1945	0.02173	46.0183	0.11173	8.9401	58.3868
20	5.6044	0.1784	0.01953	51.1601	0.10953	9.1283	61.7770
21	6.1089	0.1637	0.01762	56.7645	0.10762	9.2922	65.0509
22	6.6586	0.1502	0.01590	62.8733	0.10590	9.4424	68.2048
23	7.2579	0.1378	0.01438	69.5319	0.10438	9.5802	71.2359
24	7.9111	0.1264	0.01302	76.7898	0.10302	9.7066	74.1433
25	8.6231	0.1160	0.01181	84.7009	0.10181	9.8226	76.9285
26	9.3992	0.1064	0.01072	93.3240	0.10072	9.9290	79.5863
27	10.2451	0.0976	0.00973	102.7231	0.09973	10.0266	82.1241
28	11.1671	0.0895	0.00883	112.9682	0.09883	10.1161	84.5419
29	12.1722	0.0822	0.00806	124.1334	0.09806	10.1983	86.8422
30	13.2677	0.0754	0.00734	136.3075	0.09734	10.2737	89.0280
31	14.4618	0.0691	0.00669	149.5752	0.09669	10.3428	91.1024
32	15.7633	0.0634	0.00610	164.0370	0.09610	10.4062	93.0690
33	17.1820	0.0582	0.00556	179.8003	0.09556	10.4644	94.9314
34	18.7284	0.0534	0.00508	196.9823	0.09508	10.5178	96.6935
35	20.4140	0.0490	0.00464	215.7108	0.09464	10.5668	98.3590
40	31.4094	0.0318	0.00296	337.8824	0.09296	10.7574	105.3762
45	48.3273	0.0207	0.00190	525.8587	0.09190	10.8812	110.5561
50	74.3573	0.0134	0.00123	818.0836	0.09123	10.9617	114.3251
55	114.8083	0.0087	0.00079	1280.09	0.09079	11.0140	117.0362
60	176.0313	0.0057	0.00051	1944.79	0.09051	11.0480	118.9683
65	270.8460	0.0037	0.00033	2998.29	0.09033	11.0701	120.3344
70	416.7301	0.0024	0.00022	4619.22	0.09022	11.0844	121.2942
75	641.1909	0.0016	0.00014	7113.23	0.09014	11.0938	121.9646
80	966.5317	0.0010	0.00009	10951	0.09009	11.0998	122.4306
85	1517.93	0.0007	0.00006	16853	0.09006	11.1038	122.7533
90	2335.53	0.0004	0.00004	25939	0.09004	11.1064	122.9758
95	3593.30	0.0003	0.00003	39917	0.09003	11.1080	123.1287
96	3916.91	0.0003	0.00002	43910	0.09002	11.1083	123.1529
98	4633.68	0.0002	0.00002	51696	0.09002	11.1087	123.1963
100	5329.04	0.0002	0.00002	61423	0.09002	11.1091	123.2335

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
 MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
 KOD MATAPELAJARAN : BPC 3063

**JADUAL 5- Aliran Tunai Diskret: Faktor Faedah Kompaun** **i=10%**

n	Single Payments		Uniform Series Payments			Arithmetic Gradients		
	Compound Amount P.P	Present Worth P.F	Sinking Fund A.F	Compound Amount F.A	Capital Recovery A.P	Present Worth P.A	Gradient Present Worth P.G	Gradient Uniform Series A/G
1	1.1000	0.9091	1.00000	1.0000	1.10000	0.9091		
2	1.2100	0.8264	0.47619	2.1000	0.37619	1.7355	0.8264	0.4762
3	1.3310	0.7513	0.30211	3.3100	0.40211	2.4869	2.3293	0.9366
4	1.4641	0.6830	0.21547	4.6410	0.31547	3.1699	4.3781	1.3812
5	1.6105	0.6209	0.16380	6.1051	0.26380	3.7908	6.8618	1.8101
6	1.7716	0.5645	0.12961	7.7136	0.22961	4.3553	9.6842	2.2236
7	1.9487	0.5132	0.10541	9.4872	0.20541	4.8684	12.7631	2.6216
8	2.1436	0.4665	0.08744	11.4359	0.18744	5.3349	16.0287	3.0043
9	2.3579	0.4241	0.07364	13.5793	0.17364	5.7590	19.4215	3.3724
10	2.5937	0.3855	0.06375	15.9374	0.16275	6.1446	22.8913	3.7253
11	2.8531	0.3505	0.05696	18.5312	0.15396	6.4951	26.3963	4.0641
12	3.1384	0.3186	0.04676	21.3843	0.14676	6.8137	29.9012	4.3884
13	3.4523	0.2897	0.04078	24.5227	0.14078	7.1034	33.3772	4.6988
14	3.7973	0.2633	0.03575	27.9790	0.13575	7.3667	36.8005	4.9955
15	4.1772	0.2394	0.03147	31.7725	0.13147	7.6061	40.1520	5.2789
16	4.5950	0.2176	0.02782	35.9497	0.12782	7.8237	43.4164	5.5493
17	5.0545	0.1978	0.02466	40.5447	0.12466	8.0216	46.5819	5.8071
18	5.5599	0.1799	0.02193	45.5992	0.12193	8.2014	49.6395	6.0526
19	6.1159	0.1635	0.01955	51.1591	0.11955	8.3649	52.5827	6.2861
20	6.7275	0.1486	0.01746	57.2750	0.11746	8.5136	55.4069	6.5081
21	7.4002	0.1351	0.01562	64.0025	0.11562	8.6487	58.1095	6.7189
22	8.1403	0.1228	0.01401	71.4027	0.11401	8.7715	60.6893	6.9189
23	8.9543	0.1117	0.01257	79.5430	0.11257	8.8832	63.1462	7.1083
24	9.8497	0.1015	0.01130	88.4973	0.11130	8.9847	65.4813	7.2881
25	10.8347	0.0923	0.01017	98.3471	0.11017	9.0770	67.6964	7.4580
26	11.9182	0.0839	0.00916	109.1818	0.10916	9.1609	69.7940	7.6186
27	13.1100	0.0763	0.00826	121.0999	0.10826	9.2372	71.7773	7.7704
28	14.4210	0.0693	0.00745	134.2099	0.10745	9.3066	73.6495	7.9137
29	15.8631	0.0630	0.00673	148.6309	0.10673	9.3696	75.4146	8.0489
30	17.4494	0.0573	0.00608	164.4940	0.10608	9.4269	77.0766	8.1762
31	19.1943	0.0521	0.00550	181.9434	0.10550	9.4790	78.6395	8.2962
32	21.1138	0.0474	0.00497	201.1378	0.10497	9.5264	80.1078	8.4091
33	23.2252	0.0431	0.00450	222.2515	0.10450	9.5694	81.4856	8.5152
34	25.5477	0.0391	0.00407	245.4767	0.10407	9.6086	82.7773	8.6149
35	28.1024	0.0356	0.00369	271.0244	0.10369	9.6442	83.9872	8.7086
40	45.2593	0.0221	0.00226	442.5926	0.10226	9.7791	88.9525	9.0962
45	72.8905	0.0157	0.00139	718.9048	0.10139	9.8628	92.4544	9.3740
50	117.3909	0.0085	0.00086	1163.91	0.10086	9.9148	94.8889	9.5704
55	189.0591	0.0053	0.00053	1880.59	0.10053	9.9471	96.5619	9.7075
60	304.4816	0.0033	0.00033	3034.82	0.10033	9.9672	97.7010	9.8023
65	490.3787	0.0020	0.00020	4893.71	0.10020	9.9796	98.4705	9.8672
70	789.7470	0.0013	0.00013	7887.47	0.10013	9.9873	98.9870	9.9113
75	1271.90	0.0008	0.00008	12709	0.10008	9.9921	99.3317	9.9410
80	2048.40	0.0005	0.00005	20474	0.10005	9.9951	99.5606	9.9609
85	3298.97	0.0003	0.00003	32980	0.10003	9.9970	99.7120	9.9742
90	5313.02	0.0002	0.00002	53120	0.10002	9.9981	99.8118	9.9831
95	8556.68	0.0001	0.00001	85557	0.10001	9.9988	99.8773	9.9889
96	9412.34	0.0001	0.00001	94113	0.10001	9.9989	99.8874	9.9898
98	11389	0.0001	0.00001		0.10001	9.9991	99.9052	9.9914
100	13781	0.0001	0.00001		0.10001	9.9993	99.9202	9.9927

PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009

KURSUS : 3 BPA / BPB

MATA PELAJARAN : EKONOMI KEJURUTERAAN

KOD MATAPELAJARAN : BPC 3063

JADUAL 6 - Aliran Tunai Dibayar: Faktor Faedah Kompaun  $i=11\%$

n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount $F P$	Present Worth $P F$	Sinking Fund $A F$	Compound Amount $F A$	Capital Recovery $A P$	Present Worth $P A$	Gradient Present Worth $P G$	Gradient Uniform Seri. $A/G$
1	1.1100	0.9009	1.0000	1.0000	1.11000	0.9009		
2	1.2321	0.8116	0.47390	2.1100	0.58393	1.7125	0.8116	0.4739
3	1.3676	0.7312	0.29921	3.3421	0.40921	2.4437	2.2740	0.9506
4	1.5181	0.6587	0.21233	4.7097	0.32233	3.1824	4.2502	1.3700
5	1.6851	0.5935	0.16057	6.2278	0.27037	3.9959	6.6240	1.7923
6	1.8704	0.5346	0.12638	7.9129	0.23638	4.2305	9.2972	2.1976
7	2.0762	0.4817	0.10222	9.7833	0.21222	4.7122	12.1872	2.5863
8	2.3043	0.4339	0.08432	11.8594	0.19432	5.1461	15.2246	2.9585
9	2.5580	0.3909	0.07060	14.1640	0.18060	5.5370	18.3520	3.3144
10	2.8394	0.3522	0.05980	16.7220	0.16980	5.8892	21.5217	3.6544
11	3.1518	0.3173	0.05112	19.5614	0.16112	6.2065	24.6945	3.9788
12	3.4985	0.2858	0.04403	22.7132	0.15403	6.4924	27.8388	4.2879
13	3.8833	0.2575	0.03815	26.2116	0.14815	6.7499	30.9290	4.5822
14	4.3104	0.2320	0.03323	30.0949	0.14323	6.9819	33.9449	4.8619
15	4.7846	0.2090	0.02907	34.4054	0.13907	7.1909	36.8709	5.1275
16	5.3109	0.1883	0.02552	39.1899	0.13552	7.3792	39.6953	5.3794
17	5.8951	0.1696	0.02247	44.5008	0.13247	7.5488	42.4095	5.6180
18	6.5436	0.1528	0.01984	50.3959	0.12984	7.7016	45.0074	5.8439
19	7.2633	0.1377	0.01756	56.8995	0.12756	7.8393	47.4856	6.0574
20	8.0623	0.1240	0.01558	64.0828	0.12558	7.9633	49.8423	6.2590
21	8.9492	0.1117	0.01384	72.0641	0.12384	8.0731	52.0771	6.4491
22	9.9336	0.1007	0.01231	81.2143	0.12231	8.1757	54.1912	6.6283
23	11.0263	0.0907	0.01097	91.1479	0.12097	8.2664	56.1864	6.7969
24	12.2392	0.0817	0.00979	102.1742	0.11979	8.3481	58.0656	6.9555
25	13.5855	0.0736	0.00874	114.4133	0.11874	8.4217	59.8322	7.1045
26	15.0799	0.0663	0.00781	127.9988	0.11781	8.4881	61.4900	7.2443
27	16.7386	0.0597	0.00699	143.0786	0.11699	8.5478	63.0433	7.3754
28	18.5799	0.0538	0.00626	159.8173	0.11626	8.6016	64.4965	7.4982
29	20.6237	0.0483	0.00561	178.3972	0.11561	8.6501	65.8542	7.6131
30	22.8923	0.0437	0.00502	199.0209	0.11502	8.6938	67.1210	7.7206
31	25.4104	0.0394	0.00451	221.9132	0.11451	8.7331	68.3016	7.8210
32	28.2056	0.0355	0.00404	247.3236	0.11404	8.7686	69.4007	7.9147
33	31.3082	0.0319	0.00363	275.5292	0.11363	8.8005	70.4228	8.0021
34	34.7521	0.0288	0.00326	306.8174	0.11326	8.8293	71.3724	8.0836
35	38.5749	0.0259	0.00293	341.5896	0.11293	8.8552	72.2538	8.1594
40	65.0009	0.0154	0.00172	581.5261	0.11172	8.9511	75.7789	8.4659
45	109.5302	0.0091	0.00101	986.6386	0.11101	9.0079	78.1551	8.6763
50	184.5648	0.0054	0.00060	1668.77	0.11060	9.0417	79.7341	8.8185
55	311.0025	0.0032	0.00033	2818.20	0.11035	9.0617	80.7712	8.9135
60	524.0572	0.0019	0.00021	4755.07	0.11021	9.0736	81.4461	8.9762
65	883.0669	0.0011	0.00012	8018.79	0.11012	9.0806	81.8819	9.0172
70	1488.02	0.0007	0.00007	13518	0.11007	9.0848	82.1614	9.0438
75	2507.40	0.0004	0.00004	22785	0.11004	9.0873	82.3397	9.0610
80	4225.11	0.0002	0.00002	38401	0.11002	9.0888	82.4529	9.0720
85	7119.56	0.0001	0.00002	64714	0.11002	9.0896	82.5245	9.0790

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
KOD MATAPELAJARAN : BPC 3063

RADIAL 7 - Aliran Tunai Diskret: Faktor Freedah Kumpulan								i = 12%	
n	Single Payments		Uniform Series Payments				Arithmetic Gradients		
	Compound Amount <i>F/P</i>	Present Worth <i>P/P</i>	Sinking Fund <i>A/F</i>	Compound Amount <i>F/A</i>	Capital Recovery <i>AP</i>	Present Worth <i>P/A</i>	Gradient Present Worth <i>PG</i>	Gradient Uniform Series <i>AG</i>	
1	1.1200	0.8929	1.0000	1.0000	1.12000	0.8929			
2	1.2544	0.7972	0.47170	2.1200	0.59170	1.6901	0.7972	0.4717	
3	1.4049	0.7118	0.29635	3.3744	0.41635	2.4018	2.2208	0.9246	
4	1.5735	0.6355	0.20923	4.7793	0.32923	3.0373	4.1273	1.3389	
5	1.7623	0.5674	0.15741	6.3528	0.27741	3.6048	6.3970	1.7746	
6	1.9738	0.5066	0.12323	8.1152	0.24323	4.1114	8.9302	2.1720	
7	2.2107	0.4523	0.09912	10.0890	0.21912	4.5638	11.6443	2.5512	
8	2.4760	0.4039	0.08130	12.2997	0.20130	4.9676	14.4714	2.9131	
9	2.7731	0.3606	0.06768	14.7757	0.18768	5.3282	17.3563	3.2574	
10	3.1038	0.3220	0.05698	17.5487	0.17698	5.6502	20.2541	3.5847	
11	3.4785	0.2875	0.04842	20.6546	0.16842	5.9377	23.1288	3.8953	
12	3.8960	0.2567	0.04144	24.1331	0.16144	6.1944	25.9523	4.1897	
13	4.3635	0.2292	0.03568	28.0291	0.15568	6.4235	28.7024	4.4683	
14	4.8871	0.2046	0.03087	32.3926	0.15087	6.6282	31.3624	4.7317	
15	5.4736	0.1827	0.02682	37.2797	0.14682	6.8109	33.9202	4.9803	
16	6.1304	0.1631	0.02339	42.7533	0.14339	6.9740	36.3670	5.2147	
17	6.8660	0.1456	0.02046	48.8837	0.14046	7.1196	38.6973	5.4353	
18	7.6900	0.1300	0.01794	55.7497	0.13794	7.2497	40.9080	5.6427	
19	8.6128	0.1161	0.01576	63.4397	0.13576	7.3658	42.9979	5.8375	
20	9.6463	0.1037	0.01388	72.0524	0.13388	7.4694	44.9676	6.0202	
21	10.8038	0.0926	0.01224	81.6987	0.13224	7.5620	46.8188	6.1913	
22	12.1003	0.0826	0.01081	92.5026	0.13081	7.6446	48.5543	6.3514	
23	13.5523	0.0738	0.00956	104.6029	0.12956	7.7184	50.1776	6.5010	
24	15.1786	0.0659	0.00846	118.1552	0.12846	7.7843	51.6929	6.6406	
25	17.0001	0.0588	0.00750	133.3339	0.12750	7.8431	53.1046	6.7708	
26	19.0401	0.0525	0.00665	150.3339	0.12665	7.8957	54.4177	6.8921	
27	21.3249	0.0469	0.00590	169.3740	0.12590	7.9426	55.6369	7.0049	
28	23.8839	0.0419	0.00524	190.6989	0.12524	7.9844	56.7674	7.1098	
29	26.7499	0.0374	0.00466	214.5428	0.12466	8.0218	57.8141	7.2071	
30	29.9599	0.0334	0.00414	241.3327	0.12414	8.0552	58.7821	7.2974	
31	33.5551	0.0298	0.00369	271.2926	0.12369	8.0850	59.6761	7.3811	
32	37.5817	0.0266	0.00328	304.8477	0.12328	8.1116	60.5010	7.4586	
33	42.0915	0.0238	0.00292	342.4294	0.12292	8.1354	61.2612	7.5302	
34	47.1425	0.0212	0.00260	384.5210	0.12260	8.1566	61.9612	7.5965	
35	52.7996	0.0189	0.00232	431.6635	0.12232	8.1753	62.6052	7.6577	
40	93.0510	0.0107	0.00130	767.0914	0.12130	8.2438	65.1159	7.8988	
45	163.9876	0.0061	0.00074	1338.23	0.12074	8.2823	66.7342	8.0572	
50	289.0022	0.0035	0.00042	2400.02	0.12042	8.3043	67.7624	8.1597	
55	509.3206	0.0020	0.00024	4236.01	0.12024	8.3.70	68.4082	8.2251	
60	897.3969	0.0011	0.00013	7471.64	0.12013	8.3240	68.8100	8.2664	
65	1581.87	0.0006	0.00008	13174	0.12008	8.3281	69.0581	8.2922	
70	2787.80	0.0004	0.00004	23223	0.12004	8.3303	69.2103	8.3082	
75	4913.06	0.0002	0.00002	40934	0.12002	8.3316	69.3031	8.3181	
80	8638.48	0.0001	0.00001	72146	0.12001	8.3324	69.3594	8.3241	
85	15259	0.0001	0.00001		0.12001	8.3328	69.3935	8.3276	

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
KOD MATAPELAJARAN : BPC 3063

JADUAL 8 - Aliran Tunai Diskret Faktor Faedah Kompaun								i=14%
n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount $F/P$	Present Worth $P/P$	Sinking Fund $A/F$	Compound Amount $F/A$	Capital Recovery $A/P$	Present Worth $P/A$	Gradient Present Worth $PG$	Gradient Uniform Series $AIG$
1	1.1400	0.8772	1.0000	1.0000	1.0400	0.8772		
2	1.2996	0.7695	0.46729	2.1400	0.60729	1.6467	0.7695	0.4673
3	1.4815	0.6750	0.29073	3.4396	0.43073	2.3216	2.1194	0.9129
4	1.6890	0.5921	0.20320	4.9211	0.34320	2.9137	3.8957	1.3370
5	1.9254	0.5194	0.15128	6.6101	0.29128	3.4331	5.9731	1.7399
6	2.1950	0.4556	0.11716	8.5355	0.25716	3.8887	8.2511	2.1218
7	2.5023	0.3996	0.09119	10.7305	0.23319	4.2883	10.6489	2.4832
8	2.8526	0.3506	0.07557	13.2328	0.21557	4.6389	13.1028	2.8246
9	3.2519	0.3075	0.06217	16.0853	0.20217	4.9464	15.5629	3.1463
10	3.7072	0.2697	0.05171	19.3373	0.19171	5.2161	17.9906	3.4490
11	4.2262	0.2366	0.04339	23.0445	0.18339	5.4527	20.3567	3.7333
12	4.8179	0.2076	0.03667	27.2707	0.17667	5.6603	22.6399	3.9998
13	5.4924	0.1821	0.03116	32.0887	0.17116	5.8424	24.8247	4.2491
14	6.2613	0.1597	0.02661	37.5811	0.16661	6.0021	26.9009	4.4819
15	7.1379	0.1401	0.02281	43.8424	0.16281	6.1422	28.8623	4.6990
16	8.1372	0.1229	0.01962	50.9804	0.15962	6.2651	30.7057	4.9011
17	9.2765	0.1078	0.01692	59.1176	0.15692	6.3729	32.4305	5.0888
18	10.5752	0.0946	0.01462	68.3941	0.15462	6.4674	34.0380	5.2630
19	12.0557	0.0829	0.01266	78.9692	0.15266	6.5504	35.5311	5.4243
20	13.7435	0.0728	0.01099	91.0249	0.15099	6.6231	36.9135	5.5734
21	15.6676	0.0638	0.00954	104.7684	0.14954	6.6870	38.1901	5.7111
22	17.8610	0.0560	0.00830	120.4360	0.14830	6.7429	39.3658	5.8381
23	20.3616	0.0491	0.00723	138.2970	0.14723	6.7921	40.4460	5.9549
24	23.2122	0.0431	0.00630	158.6386	0.14630	6.8351	41.4371	6.0624
25	26.4619	0.0378	0.00550	181.8708	0.14550	6.8729	42.3441	6.1610
26	30.1666	0.0331	0.00480	208.3327	0.14480	6.9061	43.1728	6.2514
27	34.3899	0.0291	0.00419	238.4993	0.14419	6.9352	43.9289	6.3342
28	39.2045	0.0255	0.00366	272.8892	0.14366	6.9607	44.6176	6.4100
29	44.6931	0.0224	0.00320	312.0937	0.14320	6.9830	45.2441	6.4791
30	50.9502	0.0196	0.00280	356.7868	0.14280	7.0027	45.8132	6.5423
31	58.0832	0.0172	0.00245	407.7370	0.14245	7.0199	46.3297	6.5998
32	66.2148	0.0151	0.00215	465.8202	0.14215	7.0350	46.7979	6.6522
33	75.4849	0.0132	0.00188	532.0350	0.14188	7.0482	47.2218	6.6998
34	86.0528	0.0116	0.00165	607.5199	0.14165	7.0599	47.6055	6.7431
35	98.1002	0.0102	0.00144	693.5727	0.14144	7.0700	47.9519	6.7824
40	188.8835	0.0053	0.00075	1362.03	0.14075	7.1050	49.2376	6.9300
45	363.6791	0.0027	0.00039	2990.56	0.14039	7.1232	49.9963	7.0188
50	700.2330	0.0014	0.00020	4994.52	0.14020	7.1327	50.4375	7.0714
55	1348.24	0.0007	0.00010	9623.13	0.14010	7.1376	50.6912	7.1020
60	2593.92	0.0004	0.00005	18535	0.14005	7.1401	50.8257	7.1197
65	4998.22	0.0002	0.00000	35694	0.14000	7.1414	50.9173	7.1298
70	9623.64	0.0001	0.00000	68733	0.14000	7.1421	50.9632	7.1356
75	18530	0.0001	0.00000		0.14000	7.1425	50.9887	7.1388
80	35677				0.14000	7.1427	51.0030	7.1406
85	68693				0.14000	7.1428	51.0108	7.1416

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009

KURSUS : 3 BPA / BPB

MATA PELAJARAN : EKONOMI KEJURUTERAAN

KOD MATAPELAJARAN : BPC 3063

**JADUAL 9 - Aliran Tunai Diskret: Faktor Faedah Kompaun  $i=15\%$**

n	Single Payments		Uniform Series Payments			Arithmetic Gradient		
	Compound Amount F/P	Present Worth P/F	Sinking Fund A/F	Compound Amount F/A	Capital Recovery A/P	Present Worth P/A	Gradient Present Worth P/G	Gradient Uniform Series A/G
1	1.1500	0.8696	1.00000	1.0000	1.15000	0.8696		
2	1.3225	0.7561	0.46512	2.1500	0.61512	1.6257	0.7561	0.4651
3	1.5209	0.6575	0.28798	3.475	0.43798	2.2832	2.0712	0.9071
4	1.7490	0.5718	0.20027	4.9934	0.35027	2.8590	3.7864	1.3263
5	2.0114	0.4972	0.14832	6.7424	0.29832	3.3522	5.7751	1.7228
6	2.3131	0.4323	0.11424	8.7537	0.26424	3.7845	7.9368	2.0972
7	2.6600	0.3759	0.09036	11.0668	0.24036	4.1604	10.1924	2.4498
8	3.0590	0.3269	0.07285	13.7268	0.22285	4.4873	12.4807	2.7813
9	3.5179	0.2843	0.05957	16.7858	0.20957	4.7716	14.7548	3.0922
10	4.0456	0.2472	0.04925	20.3037	0.19925	5.0188	16.9795	3.3832
11	4.6524	0.2149	0.04107	24.3493	0.19107	5.2337	19.1289	3.6549
12	5.3503	0.1869	0.03448	29.0017	0.18448	5.4206	21.1849	3.9082
13	6.1528	0.1625	0.02911	34.3519	0.17911	5.5831	23.1352	4.1438
14	7.0757	0.1413	0.02469	40.5047	0.17469	5.7245	24.9725	4.3624
15	8.1371	0.1229	0.02102	47.5804	0.17102	5.8474	26.6930	4.5650
16	9.3578	0.1069	0.01795	55.7175	0.16795	5.9542	28.2960	4.7522
17	10.7613	0.0929	0.01537	65.0731	0.16537	6.0472	29.7828	4.9251
18	12.3755	0.0808	0.01319	75.8364	0.16319	6.1280	31.1565	5.0843
19	14.2318	0.0703	0.01134	88.2118	0.16134	6.1982	32.4213	5.2307
20	16.3665	0.0611	0.00976	102.4436	0.15976	6.2593	33.5822	5.3651
21	18.8213	0.0531	0.00842	118.8101	0.15842	6.3125	34.6448	5.4883
22	21.6447	0.0462	0.00727	137.6316	0.15727	6.3587	35.6150	5.6010
23	24.8915	0.0402	0.00628	159.2764	0.15628	6.3988	36.4988	5.7040
24	28.6252	0.0349	0.00543	184.1678	0.15543	6.4338	37.3023	5.7979
25	32.9190	0.0304	0.00470	212.7930	0.15470	6.4641	38.0314	5.8824
26	37.8568	0.0264	0.00407	245.7120	0.15407	6.4906	38.6918	5.9572
27	43.5353	0.0230	0.00353	283.3668	0.15353	6.5135	39.2890	6.0219
28	50.0656	0.0200	0.00306	327.1041	0.15306	6.5335	39.8283	6.0760
29	57.5755	0.0174	0.00265	377.1697	0.15265	6.5509	40.3146	6.1211
30	66.2118	0.0151	0.00230	434.7451	0.15230	6.5660	40.7526	6.1666
31	76.1433	0.0131	0.00200	500.9569	0.15200	6.5791	41.1466	6.2141
32	87.5651	0.0114	0.00173	577.1005	0.15173	6.5903	41.5006	6.2570
33	100.6998	0.0099	0.00150	664.6655	0.15150	6.6003	41.8184	6.2937
34	115.8048	0.0086	0.00131	765.3654	0.15131	6.6091	42.1033	6.3270
35	133.1733	0.0075	0.00113	881.1702	0.15113	6.6166	42.3586	6.3579
40	267.8635	0.0037	0.00056	1779.09	0.15056	6.6418	43.2830	6.3168
45	538.7693	0.0019	0.00028	3583.13	0.15028	6.6543	43.8051	6.3830
50	1063.66	0.0009	0.00014	7217.72	0.15014	6.6605	44.0958	6.4203
55	2179.62	0.0005	0.00007	14524	0.15007	6.6636	44.2558	6.4414
60	4384.00	0.0002	0.00003	29220	0.15003	6.6631	44.3431	6.4530
65	8817.79	0.0001	0.00002	58779	0.15002	6.6639	44.3903	6.4593
70	17736	0.0001	0.00001		0.15001	6.6663	44.4156	6.4627
75	35673				0.15000	6.6665	44.4292	6.4646
80	71751				0.15000	6.6666	44.4364	6.4656
85					0.15000	6.6666	44.4402	6.4661

## PEPERIKSAAN AKHIR

SEMESTER / SESI : SEM II / 2008/2009  
MATA PELAJARAN : EKONOMI KEJURUTERAAN

KURSUS : 3 BPA / BPB  
KOD MATAPELAJARAN : BPC 3063

JADUAL 10 - Aliran Tunai Diskret: Faktor Faedah Kompaun $i=16\%$								
n	Single Payments		Uniform Series Payments				Arithmetic Gradients	
	Compound Amount F/P	Present Worth P/F	Sinking Fund A/F	Compound Amount F/A	Capital Recovery A/P	Present Worth P/A	Gradient Present Worth P/G	Gradient Uniform Series A/G
1	1.1600	0.8621	1.00000	1.0000	1.16000	0.8621		
2	1.3456	0.7432	0.46296	2.1600	0.62296	1.6052	0.7432	0.4630
3	1.5609	0.6407	0.28326	3.3056	0.44526	2.2459	2.0245	0.9014
4	1.8106	0.5523	0.19738	4.5065	0.35738	2.9982	3.6814	1.3158
5	2.1003	0.4761	0.14541	5.7731	0.30541	3.2743	5.5858	1.7060
6	2.4364	0.4104	0.11139	7.1139	0.27139	3.6847	7.6380	2.0729
7	2.8262	0.3538	0.08761	8.5439	0.24761	4.0386	9.7610	2.4169
8	3.2784	0.3050	0.07022	10.0622	0.23022	4.3436	11.8962	2.7388
9	3.8030	0.2630	0.05708	11.7185	0.21708	4.6065	13.9998	3.0391
10	4.4114	0.2267	0.04690	13.5215	0.20690	4.8332	16.0399	3.3187
11	5.1173	0.1954	0.03886	15.4739	0.19886	5.0286	17.9941	3.5783
12	5.9360	0.1685	0.3241	17.5802	0.19241	5.1971	19.8472	3.8189
13	6.8858	0.1452	0.02718	19.8462	0.18718	5.3423	21.5899	4.0413
14	7.9875	0.1252	0.02290	23.2720	0.18290	5.4675	23.2175	4.2464
15	9.2655	0.1079	0.01936	26.8695	0.17936	5.5755	24.7284	4.4352
16	10.7480	0.0930	0.01641	30.6290	0.17641	5.6685	26.1241	4.6086
17	12.4677	0.0802	0.01395	34.5530	0.17395	5.7487	27.4074	4.7676
18	14.4625	0.0691	0.01188	38.6440	0.17188	5.8178	28.5828	4.9130
19	16.7765	0.0596	0.01014	42.9032	0.17014	5.8775	29.6557	5.0457
20	19.4608	0.0514	0.00867	47.3397	0.16867	5.9288	30.6321	5.1666
22	26.1864	0.0382	0.00635	57.4150	0.16635	6.0113	32.3200	5.3765
24	35.2364	0.0284	0.00467	69.9776	0.16467	6.0726	33.6970	5.5490
26	47.4141	0.0211	0.00345	84.0883	0.16345	6.1182	34.8114	5.6898
28	63.8004	0.0157	0.00255	99.9028	0.16255	6.1520	35.7073	5.8041
30	85.8499	0.0116	0.00189	117.3117	0.16189	6.1772	36.4234	5.8964
32	115.5196	0.0087	0.00140	136.5745	0.16140	6.1959	36.9930	5.9706
34	155.4432	0.0064	0.00104	157.8698	0.16104	6.2098	37.4441	6.0299
35	180.3141	0.0055	0.00089	180.271	0.16089	6.2153	37.6327	6.0548
36	209.1643	0.0048	0.00077	203.803	0.16077	6.2201	37.8000	6.0771
38	281.4515	0.0036	0.00057	252.82	0.16057	6.2278	38.0799	6.1145
40	378.7212	0.0028	0.00042	306.76	0.16042	6.2335	38.2992	6.1441
45	795.4438	0.0013	0.00020	495.27	0.16020	6.2421	38.6598	6.1934
50	1670.70	0.0006	0.00010	10436	0.16010	6.2463	38.8521	6.2201
55	3509.05	0.0003	0.00005	21925	0.16005	6.2482	38.9534	6.2347
60	7370.20	0.0001	0.00002	46058	0.16002	6.2492	39.0063	6.2419