KYPJ
KOLEJ YAYASAN
PELAJARAN JOHOR

KOLEJ YAYASAN PELAJARAN JOHOR
FINAL EXAMINATION

COURSE NAME **:** **FUNDAMENTAL OF FINANCE**

COURSE CODE **:** **DHR2113**

EXAMINATION **:** **JANUARY 2024**

DURATION   **:** **3 HOURS**

INSTRUCTION TO CANDIDATES
ARAHAN KEPADA CALON

1. This question paper consists of **TWO (2)** parts : PART A (20 Marks)

  *Kertas soalan ini mengandungi **DUA (2)** bahagian:* *BAHAGIAN A (20 Markah)*

                  PART B (80 Marks)

                  BAHAGIAN B (80 Markah)

2. Candidates are not allowed to bring any material to examination room except with the permission from the invigilator.
  Calon tidak dibenarkan untuk membawa sebarang bahan/nota ke bilik peperiksaan tanpa arahan/kebenaran daripada pengawas.

3. Please check to make sure that this examination pack consist of:
  Pastikan kertas soalan peperiksaan ini mengandungi:

  i. The Question Paper
   Kertas Soalan

  ii. An Objective Answer Paper
   Kertas Jawapan Objektif

  iii. An Answering Booklet
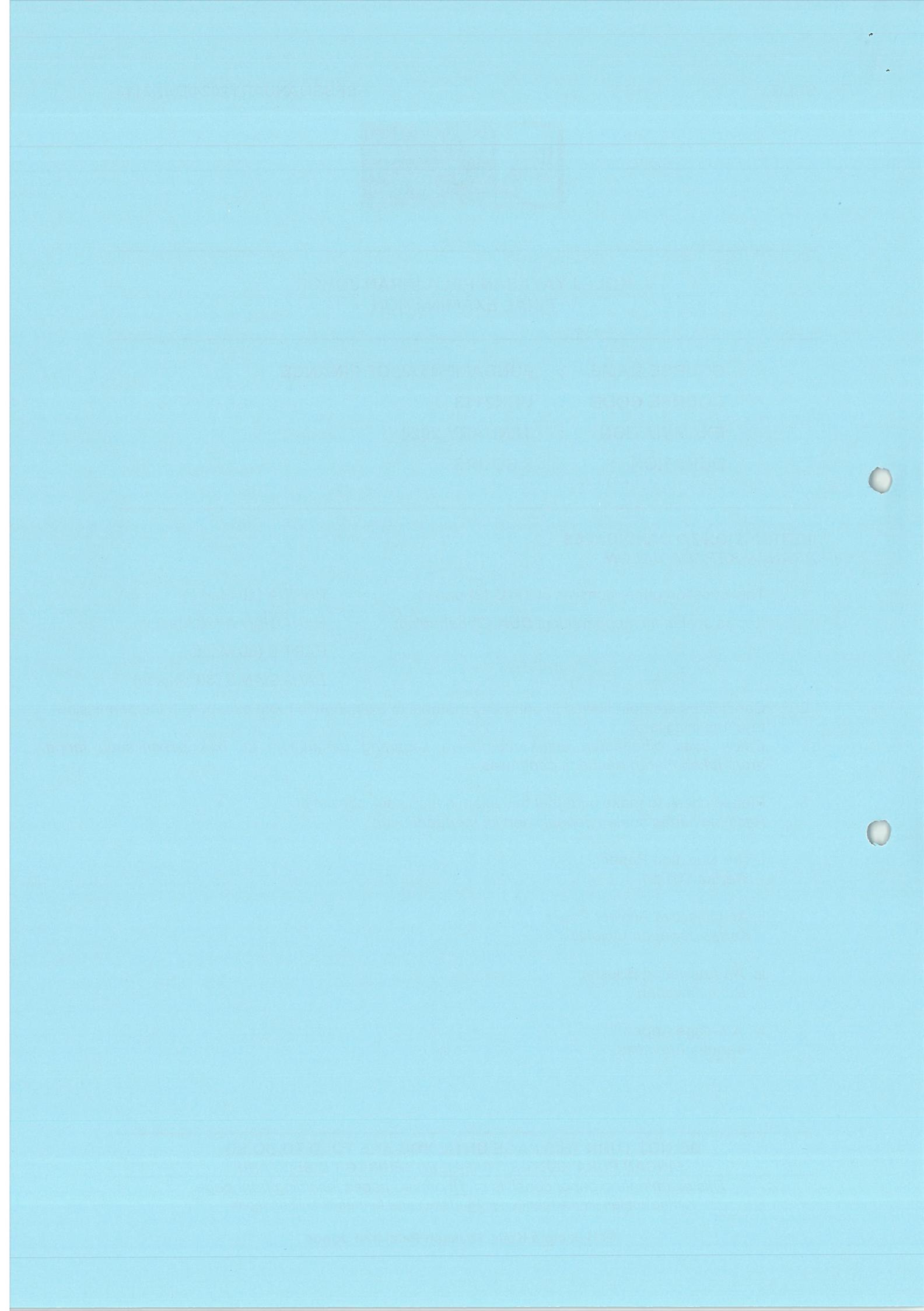   *Buku Jawapan*

  iv. A 4-page Appendix
   4-muka Apendiks

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO
JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU
This examination paper consists of **18** printed pages including front page
*Kertas soalan ini mengandungi **18** muka surat termasuk kulit hadapan*

PART A / *BAHAGIAN A*

This part consists of **TEN (10)** questions.

Answer ALL in an Objective Answer Sheet.

*Bahagian ini mempunyai **SEPULUH (10)** soalan.*

Jawab SEMUA soalan di dalam Kertas Jawapan Objektif.

1. Which of the following are the stakeholders of a company?
   I. Creditors.
   II. Employees.
   III. Competitor.
   IV. Shareholders.

   A. I, II, III
   B. I, II, IV
   C. II, III, IV
   D. None of the above

   Manakah antara berikut merupakan pemegang taruh sesebuah syarikat?
   I. Pemiutang.
   II. Pekerja.
   III. Pesaing.
   IV. Pemegang saham.

   A. *I, II, III*
   B. *I, II, IV*
   C. *II, III, IV*
   D. *Tiada jawapan di atas*

2. Why the objective of "maximazition of shareholders' wealth" is said to be superior than "maximization of profits"?

I.   It is a long term objective.

II. It takes into account risk factor.

III. It will consequently lead to survival of a firm.

IV. Company's yearly profit is guaranteed to be increased.

A   I, II, III

B   I, II, IV

C   II, III, IV

D   None of the above

Mengapakah objektif "memaksimumkan kekayaan pemegang saham" dikatakan lebih unggul berbanding objektif "memaksimumkan keuntungan syarikat"?

I.   Bersifat jangka panjang.

II. Mengambil kira faktor risiko.

III. Ia akan mengarah kepada kelangsungan syarikat.

IV. Keuntungan tahunan syarikat di jamin meningkat.

A   I, II, III

B   I, II, IV

C   II, III, IV

D   Tiada jawapan di atas

3. Which of the following working capital strategy involve highest risk?

A   Moderate.

B   Aggressive.

C   Conservative.

D   None of the above.

Strategi modal kerja manakah yang paling berisiko?

A   Sederhana.

B   Agresif.

C   Konservatif.

D   Tiada jawapan di atas.

You are provided with the following information:

Cash RM12,000

Inventory RM57,000

Accruals RM5,500

Account payable RM27,900

Account receivable RM23,000

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4. Based on the information above, how much is the net working capital?

   A   RM28,500.

   B   RM58,600.

   C   RM92,000

   D   RM125,400.

Anda diberikan maklumat yang berikut:

Tunai RM12,000

Inventori RM57,000

Akruan RM5,500

Akaun belum bayar RM27,900

Akaun belum terima RM23,000

Berdasarkan maklumat di atas, berapakah modal kerja bersih?

A   RM28,500.

B   RM58,600.

C   RM92,000.

D   RM125,400.

5. Treasury bills and commercial paper are examples of which of the following?

    A Types of inventory.

    B Marketable securities.

    C Current assets of a company.

    D None of the above.

    Bil perbendaharaan dan kertas komersial merupakan contoh _____

    A *Jenis inventori.*

    B *Sekuriti mudah pasar.*

    C *Aset semasa syarikat.*

    D *Tiada jawapan di atas.*

6. Why a company decides to invest in marketable securities?

    A To earn rental income.

    B As a substitute for cash.

    C To hedge against inflation.

    D To enhance image of a company.

    Mengapakah sesebuah syarikat melabur dalam sekuriti mudah pasar?

    A *Untuk memperoleh pendapatan berbentuk sewa.*

    B *Sebagai pengganti tunai.*

    C *Untuk melindungi kesan inflasi.*

    D *Untuk meningkatkan imej syarikat.*

7. Anaa Bhd. involved in producing fruit juice. The company needs 8,500 bottles per year for production purposes. The selling price of the bottle is RM25. The carrying cost is 6% of the selling price while the estimated ordering cost is RM120. The company also decide to keep 1,500 bottles as its safety stock. Order will be delivered within 12 days. (assume 360 days per year).

    Calculate economic order quantity (EOQ).

    A 908 units.

    B 1037 units.

    C 1116 units.

    D 2013 units.

Anna Bhd. adalah pengeluar jus buah-buahan. Kebiasaannya syarikat memerlukan 8,500 unit botol setahun untuk tujuan pengeluaran. Harga seunit botol adalah RM25. Kos memegang stok adalah 6% dari harga seunit botol manakala kos pesanan adalah RM120/pesanan. Syarikat juga telah menetapkan untuk menyimpan sebanyak 1,500 unit botol sebagai stok keselamatan. Penghantaran stok kebiasaanya mengambil masa selama 12 hari. (andaian: terdapat 360 hari dalam setahun).

Kira kuantiti pesanan ekonomi (EOQ).

A   908 unit.

B   1037 unit.

C   1116 unit.

D   2013 unit.

8. Which of the following factors should be considered by a firm while offering credit facility to its customer?

   I. Character

   II. Capacity

   III. Competition

   IV. Economic condition

   A. I, II, III

   B. I, II, IV

   C. II, III, IV

   D. None of the above

Manakah antara berikut merupakan faktor yang perlu diambil kira oleh sesebuah syarikat ketika menawarkan kemudahan kredit kepada pelanggannya?

   I. *Karakter*

   II. *Kemampuan*

   III. *Persaingan*

   IV. *Keadaan ekonomi*

A. I, II, III

B. I, II, IV

C. II, III, IV

D. None of the above

9. Which of the following action is appropriate if a company decides to shorten its cash conversion cycle (CCC)?

A   Reducing average age of inventory.

B   Reducing average collection period.

C   Increasing the average payment period.

D   All the above.

Manakah antara berikut merupakan tindakan yang boleh diambil sesebuah syarikat jika ia bercadang untuk memendekkan kitaran penukaran tunainya?

A   Memendekkan hayat purata inventori.

B   Memendekkan tempoh kutipan hutang.

C   Memanjangkan tempoh purata pembayaran.

D   Semua jawapan di atas.

10. Syahdu Bhd. has average age of inventory of 120 days and an average collection period of 60 days. The company purchases raw materials on credit and is normally given 80 days to make payment to its supplier.

Calculate the cash conversion cycle.

A   60 days.

B   100 days.

C   140 days.

D   180 days.

Hayat purata inventori (tempoh penukaran inventori) Syahdu Bhd. adalah selama 120 hari manakala tempoh purata kutipan adalah selama 60 hari. Syarikat juga kebiasaannya membeli bahan mentah secara kredit dan mengambil masa selama 80 hari untuk membuat pembayaran kepada pembekal.

Kira kitaran penukaran tunai syarikat.

A   *60 hari.*

B   *100 hari.*

C   *140 hari.*

D   *180 hari.*

[20 MARKS / *MARKAH*]

PART B / *BAHAGIAN B*

This part consists of **FOUR (4)** questions.

Answer ALL questions in an Answering Booklet.

Bahagian ini mempunyai EMPAT (4) soalan.

Jawab SEMUA soalan di dalam Buku Jawapan.

QUESTION 1 / *SOALAN 1*

You are required to prepare a cash budget for Kajul Berhad for the second quarter of 2019 base on the following information:

Kajul Berhad is trying to estimate its need of funds for the second quarter of year 2019.

a. Sales forecast are as in table 1:

MONTH	RM	MONTH	RM
January	160,000	May	260,000
February	190,000	June	220,000
March	140,000	July	280,000
April	180,000		

Table 1

b. The collection of sales is as follows:

- 30% is for cash.
- 70% is collected one month after sales.

c. Purchase forecast are as in table 2:

MONTH	RM	MONTH	RM
January	96,000	May	156,000
February	114,000	June	132,000
March	84,000	July	168,000
April	108,000		

Table 2

All purchases are made on cash basis.

d. Rent expenses is RM3,000 per month.

e. 6% of interest payment on RM150,000 loan is to be paid in May.

f. Wages and salaries in April, May and June are estimated to be RM10,000, RM12,000 and RM14,000 respectively.

g. Other fixed monthly expenses:
   - Depreciation RM15,000
   - Takaful RM3,000

h. The company plans to pay RM10,000 in cash for a new sophisticated printing machine in June and its monthly despreciation is expected to be RM500.

i. RM25,000 for monthly renovation cost is payable in May and June.

j. A quarterly dividend of RM5,000 will be received in June.

k. Company's ending cash balance for March is RM30,000 and the company decided to maintain a minimum balance of RM50,000 per month.

(20 marks)

Anda dikehendaki menyediakan belanjawan tunai bagi Kajul Berhad untuk tempoh suku kedua tahun 2019 berdasarkan maklumat di bawah.

Kajul Berhad sedang membuat anggaran keperluan dana untuk suku kedua tahun 2019.

a. *Jadual 1 menunjukkan anggaran jualan syarikat.*

BULAN	RM	BULAN	RM
Januari	160,000	Mei	260,000
Februari	190,000	Jun	220,000
Mac	140,000	Julai	280,000
April	180,000		

Jadual 1

b. *Kutipan jualan kredit adalah seperti berikut:*
   - *30% jualan adalah secara tunai.*
   - *70% jualan akan dikutip sebulan selepas transaksi berlaku.*

c. Jadual 2 menunjukkan anggaran belian syarikat:

BULAN	RM	BULAN	RM
Januari	96,000	Mei	156,000
Februari	114,000	Jun	132,000
Mac	84,000	Julai	168,000
April	108,000		

Jadual 2

Semua transaksi belian dilakukan secara tunai.

d. Belanja sewa berjumlah RM3,000/bulan.

e. 6% bunga dikenakan atas pinjaman jangka panjang berjumlah RM150,000 dan dijangka di bayar pada bulan Mei

f. Gaji dan upah pada April, Mei dan Jun masing-masing dianggarkan berjumlah RM10,000, RM12,000 dan RM14,000.

g. Lain-lain belanja tetap bulanan syarikat termasuklah:
   - Susutnilai RM15,000
   - Takaful RM3,000

h. Syarikat bercadang untuk membayar RM10,000 untuk pembelian mesin pencetak canggih pada bulan Jun dan susutnilai bulanan mesin ini dijangka berjumlah RM500.

i. RM25,000 kos pembaikan dijangka dibayar pada bulan May dan Jun.

j. Dividen untuk suku tahun dijangka diterima pada bulan Jun berjumlah RM5,000.

k. Baki tunai pada akhir bulan Mac berjumlah RM30,000. Syarikat juga membuat dasar baki minimum tunai dipegang, berjumlah RM50,000 pada setiap bulan.

(20 markah)

QUESTION 2 / *SOALAN 2*

a. (i) You are a financial manager of Coffee Station Bhd. The company wants to forecast its financial needs if sales is increased in year 2022. You have to prepare the pro-forma balance sheet (statement of financial position) to determine the amount of additional financing to support higher sales. All relevant information is provided as follows:

COFFEE STATION BERHAD
BALANCE SHEET AS AT 31 DECEMBER 2021

	RM		RM
Cash	400,000	Account payable	95,000
Marketable securities	90,000	Accrued expenses	75,000
Account receivable	180,000	Notes payable	185,000
Inventory	240,000	Long term debt	255,000
		Common shares	280,000
Non Current Assets (net)	370,000	Retained earnings	390,000
TOTAL ASSETS	**1,280,000**	**TOTAL LIABILITIES & EQUITY**	**1,280,000**

Other relevant information is provided as follows:

1. Sales is expected to increase by 20% to RM5,800,000 in year 2022.

2. The company is operating at full capacity.

3. The net profit margin is 6% while the dividend payout ratio is 75%.

(10 marks)

(ii) If the company decided to raise the additional funds through long term loan, explain how this is recorded in the pro-forma balance sheet.

(2 marks)

Anda adalah pengurus kewangan Coffee Station Bhd. Syarikat bercadang membuat unjuran keperluan dana jika jualan meningkat pada tahun 2022. Anda perlu menyediakan kunci kira-kira proforma (penyata kedudukan kewangan) untuk menentukan dana tambahan yang diperlukan untuk menampung peningkatan dalam jualan pada tahun 2022.

COFFEE STATION BERHAD
KUNCI KIRA-KIRA PADA 31 DECEMBER 2021

	RM		RM
Tunai	400,000	Akaun belum bayar	95,000
Sekuriti mudah pasar	90,000	Belanja terakru	75,000
Akaun belum terima	180,000	Nota belum bayar	185,000
Inventori	240,000	Pinjaman jangka panjang	255,000
		Saham biasa	280,000
Bukan aset semasa (bersih)	370,000	Perolehan tertahan	390,000
JUMLAH ASET	**1,280,000**	**JUMLAH LIABILITI & EKUITI**	**1,280,000**

Lain-lain maklumat tambahan adalah seperti berikut:

1. *Jualan dijangka meningkat sebanyak 20% kepada RM5,800,000 pada tahun 2022.*
2. *Syarikat beroperasi pada kapasiti penuh.*
3. *Margin untung bersih syarikat adalah 6% manakala nisbah pembayaran dividen adalah 75%.*

(10 markah)

(ii) *Jika syarikat bercadang untuk memperoleh dana tambahan diperlukan melalui kemudahan pembiayaan jangka panjang, terangkan bagaimana catatan dibuat dalam kunci kira-kira pro-forma.*

(2 markah)

b. Your father is going to retire soon. The company plans to pay him token as a means of appreciation for being a loyal staff. The interest rate is 6%. He is offered with these **two (2)** alternatives:

   i)   **Alternative 1;**

      Receive RM200 in year 1, RM250 in year 2 and RM300 in year 3.

   ii)   **Alternative 2;**

      Receive RM500 today and dan RM200 in year 2.

   iii)   Which alternative is attractive? Why?

(8 marks)

*Ayah anda akan bersara tidak lama lagi. Majikan ayah anda menawarkan **dua (2)** pilihan cara pembayaran saguhati sebagai tanda penghargaan kerana menjadi pekerja yang setia sepanjang tempoh perkhidmatan beliau. Majikan menawarkan dua (2) pilihan berikut:*

   i)   ***Pilihan 1;***

      Menerima RM200 pada tahun 1, RM250 pada tahun 2 dan RM300 pada tahun 3.

   ii)   ***Pilihan 2;***

      Menerima RM500 hari ini dan RM200 pada tahun 2.

   iii)   *Manakah pilihan yang menarik? Mengapa?*

(8 *markah*)

QUESTION 3 / *SOALAN 3*

a. Kasawari Bhd. needs to raise RM300,000 to support its working capital requirement for six (6) months. The company has identified some options as a source of its short-term financing. Calculate the effective cost for each financing option.

   i)   Borrow a discounted loan from Standard Bank with 7% annual interest rate. The bank also requires a compensating balance of 20% of the loan amount.

   (5.5 marks)

   ii)   Obtain a RM500,000 line of credit facility from Ocean Bank. The annual interest charged is 8% besides the imposition of 4% commitment fee for the unused credit.

   (5 marks)

   iii) Issue commercial paper with a face value of RM100,000 per paper at an annual interest of 8%. In addition, the company has to incur a total floatation cost of RM15,000. Tha maturity of the paper is 180 days.

   (5.5 marks)

   iv)   Forgo a trade credit with a credit term of 5/60 net 180.

   (2 marks)

b. Which is the best option? Justify you answer.

   (2 marks)

a. *Kasawari Bhd. memerlukan RM300,000 untuk membiayai keperluan modal kerja syarikat selama enam (6) bulan. Syarikat telah mengenal pasti beberapa pilihan untuk mendapatkan pembiayaan jangka pendek. Kirakan kadar bunga efektif untuk setiap pilihan pembiayaan.*

i) *Meminjam dari Bank Standard dengan kadar bunga terdiskaun sebanyak 7% setahun. Bank juga menetapkan kadar baki pampasan sebanyak 20% daripada amaun pinjaman.*

(5.5 markah)

ii) *Mendapatkan kemudahan pembiayaan garisan kredit berjumlah RM500,000 dari Ocean Bank. Kadar bunga tahunan adalah 8% disamping 4% fi komitmen untuk sebarang jumlah kredit yang tidak digunakan.*

(5 markah)

iii) *Menerbitkan kertas komersial dengan nilai muka RM100,000 setiap kertas. Kadar bunga tahunan adalah 8% dan kos apungan yang perlu dibayar berjumlah RM15,000. Tempoh matang kertas adalah selama 180 hari.*

(5.5 markah)

iv) *Melepaskan kredit dagangan yang ditawarkan pembekal dengan terma kredit 5/60 net 180.*

(2 markah)

b. *Manakah pilihan pembiayaan yang anda pilih? Berikan justifikasi anda.*

(2 markah)

QUESTION 4 / *SOALAN 4*

GalaTrading is considering two mutually exclusive projects. The firm's cost of capital is 12%. The expected cash flow generated from both projects are as follows:

Year	Green Project (RM)	Yellow Project (RM)
0	(100,000)	(85,000)
1	30,000	40,000
2	30,000	35,000
3	30,000	30,000
4	30,000	10,000
5	30,000	(5,000)

a. Calculate:

    i)   Pay-back period for each project.   (4 marks)

    ii)   Net present value for each project.   (7 marks)

    iii)   Internal rate of return (*IRR*) for Green project.   (5 marks)

    iv)   What is meant by "mutually exclusive projects"?   (2 marks)

b. Based on the answers derived in (i) and (ii) above, which project should be selected? State your reason.

                                                                             (2 marks)

GalaTrading sedang menilai dua (2) projek yang saling menyingkir. Kos modal syarikat adalah 12% dan aliran tunai bakal dijana oleh kedua-dua projek adalah seperti berikut:

Tahun	Projek Green (RM)	Projek Yellow (RM)
0	(100,000)	(85,000)
1	30,000	40,000
2	30,000	35,000
3	30,000	30,000
4	30,000	10,000
5	30,000	(5,000)

a. Kirakan:

    i.   Tempoh bayar balik untuk setiap projek.   (4 markah)

    ii. Nilai kini bersih untuk setiap projek.   (7 markah)

    iii. Kadar pulangan dalaman (IRR) untuk projek Green   (5 markah)

    iv. Apakah maksud "projek yang saling menyingkir"?   (2 markah)

b. Berdasarkan jawapan diperoleh untuk (i) dan (ii) di atas, projek manakah yang wajar dipilih? Mengapa?

                                                                (2 markah)

[80 MARKS / MARKAH]

END OF QUESTION PAPER
KERTAS 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	1.1236	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	1.1249	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	2.4883	2.9316	3.0518	3.7129
6	1.0615	1.1262	1.1941	1.2653	1.3401	1.4185	1.5007	1.5869	1.6771	1.7716	1.8704	1.9738	2.0820	2.1950	2.3131	2.4364	2.9860	3.6352	3.8147	4.8268
7	1.0721	1.1487	1.2299	1.3159	1.4071	1.5036	1.6058	1.7138	1.8280	1.9487	2.0762	2.2107	2.3526	2.5023	2.6600	2.8262	3.5832	4.5077	4.7684	6.2749
8	1.0829	1.1717	1.2668	1.3686	1.4775	1.5938	1.7182	1.8509	1.9926	2.1436	2.3045	2.4760	2.6584	2.8526	3.0590	3.2784	4.2998	5.5895	5.9605	8.1573
9	1.0937	1.1951	1.3048	1.4233	1.5513	1.6895	1.8385	1.9990	2.1719	2.3579	2.5580	2.7731	3.0040	3.2519	3.5179	3.8030	5.1598	6.9310	7.4506	10.604
10	1.1046	1.2190	1.3439	1.4802	1.6289	1.7908	1.9672	2.1589	2.3674	2.5937	2.8394	3.1058	3.3946	3.7072	4.0456	4.4114	6.1917	8.5944	9.3132	13.786
11	1.1157	1.2434	1.3842	1.5395	1.7103	1.8983	2.1049	2.3316	2.5804	2.8531	3.1518	3.4785	3.8359	4.2262	4.6524	5.1173	7.4301	10.657	11.642	17.922
12	1.1268	1.2682	1.4258	1.6010	1.7959	2.0122	2.2522	2.5182	2.8127	3.1384	3.4985	3.8960	4.3345	4.8179	5.3503	5.9360	8.9161	13.215	14.552	23.298
13	1.1381	1.2936	1.4685	1.6651	1.8856	2.1329	2.4098	2.7196	3.0658	3.4523	3.8833	4.3635	4.8980	5.4924	6.1528	6.8858	10.699	16.386	18.190	30.288
14	1.1495	1.3195	1.5126	1.7317	1.9799	2.2609	2.5785	2.9372	3.3417	3.7975	4.3104	4.8871	5.5348	6.2613	7.0757	7.9875	12.839	20.319	22.737	39.374
15	1.1610	1.3459	1.5580	1.8009	2.0789	2.3966	2.7590	3.1722	3.6425	4.1772	4.7846	5.4736	6.2543	7.1379	8.1371	9.2655	15.407	25.196	28.422	51.186
16	1.1726	1.3728	1.6047	1.8730	2.1829	2.5404	2.9522	3.4259	3.9703	4.5950	5.3109	6.1304	7.0673	8.1372	9.3576	10.748	18.488	31.243	35.527	66.542
17	1.1843	1.4002	1.6528	1.9479	2.2920	2.6928	3.1588	3.7000	4.3276	5.0545	5.8951	6.8660	7.9861	9.2765	10.761	12.468	22.186	38.741	44.409	86.504
18	1.1961	1.4282	1.7024	2.0258	2.4066	2.8543	3.3799	3.9960	4.7171	5.5599	6.5436	7.6900	9.0243	10.575	12.375	14.463	26.623	48.039	55.511	112.455
19	1.2081	1.4568	1.7535	2.1068	2.5270	3.0256	3.6165	4.3157	5.1417	6.1159	7.2633	8.6128	10.197	12.056	14.232	16.777	31.948	59.568	69.389	146.192
20	1.2202	1.4859	1.8061	2.1911	2.6533	3.2071	3.8697	4.6610	5.6044	6.7275	8.0623	9.6463	11.523	13.743	16.367	19.461	38.338	73.864	86.736	190.050
21	1.2324	1.5157	1.8603	2.2788	2.7860	3.3996	4.1406	5.0338	6.1088	7.4002	8.9492	10.804	13.021	15.668	18.822	22.574	46.005	91.592	108.420	247.065
22	1.2447	1.5460	1.9161	2.3699	2.9253	3.6035	4.4304	5.4365	6.6586	8.1403	9.9336	12.100	14.714	17.861	21.645	26.186	55.206	113.574	135.525	321.184
23	1.2572	1.5769	1.9736	2.4647	3.0715	3.8197	4.7405	5.8715	7.2579	8.9543	11.026	13.552	16.627	20.362	24.891	30.376	66.247	140.831	169.407	417.539
24	1.2697	1.6084	2.0328	2.5633	3.2251	4.0489	5.0724	6.3412	7.9111	9.8497	12.239	15.179	18.788	23.212	28.625	35.236	79.497	174.631	211.758	542.801
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	40.874	95.396	216.542	264.698	705.641
30	1.3478	1.8114	2.4273	3.2434	4.3219	5.7435	7.6123	10.063	13.268	17.449	22.892	29.960	39.116	50.950	66.212	85.850	237.376	634.820	807.794	*
35	1.4166	1.9999	2.8139	3.9461	5.5160	7.6861	10.677	14.785	20.414	28.102	38.575	52.800	72.069	98.100	133.176	180.314	590.668	*	*	*
36	1.4308	2.0399	2.8983	4.1039	5.7918	8.1473	11.424	15.968	22.251	30.913	42.818	59.136	81.437	111.834	153.152	209.164	708.802	*	*	*
40	1.4889	2.2080	3.2620	4.8010	7.0400	10.286	14.974	21.725	31.409	45.259	65.001	93.051	132.782	188.884	267.864	378.721	*	*	*	*
50	1.6446	2.6916	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	5.3680	5.6842	5.7656	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	7.4416	8.0484	8.2070	9.0431
6	6.1520	6.3081	6.4684	6.6330	6.8019	6.9753	7.1533	7.3359	7.5233	7.7156	7.9129	8.1152	8.3227	8.5355	8.7537	8.9775	9.9299	10.980	11.259	12.756
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	12.916	14.615	15.073	17.583
8	8.2857	8.5830	8.8923	9.2142	9.5491	9.8975	10.260	10.637	11.028	11.436	11.859	12.300	12.757	13.233	13.727	14.240	16.499	19.123	19.842	23.858
9	9.3685	9.7546	10.159	10.583	11.027	11.491	11.978	12.488	13.021	13.579	14.164	14.776	15.416	16.085	16.786	17.519	20.799	24.712	25.802	32.015
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	25.959	31.643	33.253	42.619
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	32.150	40.238	42.566	56.405
12	12.683	13.412	14.192	15.026	15.917	16.870	17.888	18.977	20.141	21.384	22.713	24.133	25.650	27.271	29.002	30.850	39.581	50.895	54.208	74.327
13	13.809	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	48.497	64.110	68.760	97.625
14	14.947	15.974	17.086	18.292	19.599	21.015	22.550	24.215	26.019	27.975	30.095	32.393	34.883	37.581	40.505	43.672	59.196	80.496	86.949	127.913
15	16.097	17.293	18.599	20.024	21.579	23.276	25.129	27.152	29.361	31.772	34.405	37.280	40.417	43.842	47.580	51.660	72.035	100.815	109.687	167.286
16	17.258	18.639	20.157	21.825	23.657	25.673	27.888	30.324	33.003	35.950	39.190	42.753	46.672	50.980	55.717	60.925	87.442	126.011	138.109	218.472
17	18.430	20.012	21.762	23.698	25.840	28.213	30.840	33.750	36.974	40.545	44.501	48.884	53.739	59.118	65.075	71.673	105.931	157.253	173.636	285.014
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	84.141	128.117	195.994	218.045	371.518
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	78.969	88.212	98.603	154.740	244.033	273.556	483.973
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	186.688	303.601	342.945	630.165
21	23.239	25.783	28.676	31.969	35.719	39.993	44.865	50.423	56.765	64.002	72.265	81.699	92.470	104.768	118.810	134.841	225.026	377.465	429.681	820.215
22	24.472	27.299	30.537	34.248	38.505	43.392	49.006	55.457	62.873	71.403	81.214	92.503	105.491	120.436	137.632	157.415	271.031	469.056	538.101	*
23	25.716	28.845	32.453	36.618	41.430	46.996	53.436	60.893	69.532	79.543	91.148	104.603	120.205	138.297	159.276	183.601	326.237	582.630	673.626	*
24	26.973	30.422	34.426	39.083	44.502	50.816	58.177	66.765	76.790	88.497	102.174	118.155	136.831	158.659	184.168	213.978	392.484	723.461	843.033	*
25	28.243	32.030	36.459	41.646	47.727	54.865	63.249	73.106	84.701	98.347	114.413	133.334	155.620	181.871	212.793	249.214	471.981	898.092	*	*
30	34.785	40.568	47.575	56.085	66.439	79.058	94.461	113.283	136.308	164.494	199.021	241.333	293.199	356.787	434.745	530.312	*	*	*	*
35	41.660	49.994	60.462	73.652	90.320	111.435	138.237	172.317	215.711	271.024	341.590	431.663	546.681	693.573	881.170	*	*	*	*	*
36	43.077	51.994	63.276	77.598	95.836	119.121	148.913	187.102	236.125	299.127	380.164	484.463	618.749	791.673	*	*	*	*	*	*
40	48.886	60.402	75.401	95.026	120.800	154.762	199.635	259.057	337.882	442.593	581.826	767.091	*	*	*	*	*	*	*	*
50	64.463	84.579	112.797	152.667	209.348	290.336	406.529	573.770	815.084	*	*	*	*	*	*	*	*	*	*	*

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%	25%	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	0.7938	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	0.9238	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	0.4823	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	0.3411	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	0.5066	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	0.1594
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269	0.3050	0.2326	0.1789	0.1678	0.1226
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2843	0.2630	0.1938	0.1443	0.1342	0.0943
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472	0.2267	0.1615	0.1164	0.1074	0.0725
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.3173	0.2875	0.2607	0.2366	0.2149	0.1954	0.1346	0.0938	0.0859	0.0558
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2858	0.2567	0.2307	0.2076	0.1869	0.1685	0.1122	0.0757	0.0687	0.0429
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2575	0.2292	0.2042	0.1821	0.1625	0.1452	0.0935	0.0610	0.0550	0.0330
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2320	0.2046	0.1807	0.1597	0.1413	0.1252	0.0779	0.0492	0.0440	0.0254
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.2090	0.1827	0.1599	0.1401	0.1229	0.1079	0.0649	0.0397	0.0352	0.0195
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1883	0.1631	0.1415	0.1229	0.1069	0.0930	0.0541	0.0320	0.0281	0.0150
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1696	0.1456	0.1252	0.1078	0.0929	0.0802	0.0451	0.0258	0.0225	0.0116
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1528	0.1300	0.1108	0.0946	0.0808	0.0691	0.0376	0.0208	0.0180	0.0089
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1377	0.1161	0.0981	0.0829	0.0703	0.0596	0.0313	0.0168	0.0144	0.0068
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1240	0.1037	0.0868	0.0728	0.0611	0.0514	0.0261	0.0135	0.0115	0.0053
21	0.8114	0.6598	0.5375	0.4388	0.3589	0.2942	0.2415	0.1987	0.1637	0.1351	0.1117	0.0926	0.0768	0.0638	0.0531	0.0443	0.0217	0.0109	0.0092	0.0040
22	0.8034	0.6468	0.5219	0.4220	0.3418	0.2775	0.2257	0.1839	0.1502	0.1228	0.1007	0.0826	0.0680	0.0560	0.0462	0.0382	0.0181	0.0088	0.0074	0.0031
23	0.7954	0.6342	0.5067	0.4057	0.3256	0.2618	0.2109	0.1703	0.1378	0.1117	0.0907	0.0738	0.0601	0.0491	0.0402	0.0329	0.0151	0.0071	0.0059	0.0024
24	0.7876	0.6217	0.4919	0.3901	0.3101	0.2470	0.1971	0.1577	0.1264	0.1015	0.0817	0.0659	0.0532	0.0431	0.0349	0.0284	0.0126	0.0057	0.0047	0.0018
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0736	0.0588	0.0471	0.0378	0.0304	0.0245	0.0105	0.0046	0.0038	0.0014
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0437	0.0334	0.0256	0.0196	0.0151	0.0116	0.0042	0.0016	0.0012	*
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0259	0.0189	0.0139	0.0102	0.0075	0.0055	0.0017	0.0005	*	*
36	0.6989	0.4902	0.3450	0.2437	0.1727	0.1227	0.0875	0.0626	0.0449	0.0323	0.0234	0.0169	0.0123	0.0089	0.0065	0.0048	0.0014	*	*	*
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0154	0.0107	0.0075	0.0053	0.0037	0.0026	0.0007	*	*	*
50	0.6080	0.3715	0.2281	0.1407	0.0872	0.0543	0.0339	0.0213	0.0134	0.0085	0.0054	0.0035	0.0022	0.0014	0.0009	0.0006	*	*	*	*

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

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	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	1.3609
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	4.5638	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	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	5.9952	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	5.0188	4.8332	4.1925	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	3.6564	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	4.4392	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	9.8986	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	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	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	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	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	7.3658	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	9.2922	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	6.3988	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	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.4269	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	7.0700	6.6166	6.2153	4.9915	4.1644	3.9984	3.3330
36	30.108	25.489	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	10.757	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	4.9966	4.1659	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	6.2463	4.9995	4.1666	3.9999	3.3333

APPENDIX

LIST OF FORMULA

1. OC = ICP + RCP

2. CCC = ICP + RCP – PDP

3. CTO = 360 / CCC

4. MOC = Total cash annually / CTO

5. EOQ = $\sqrt{2DO/C}$

6. ROP = (Usage rate **x** Delivery time) **+** SS

7. FO = $\dfrac{360}{(D/EOQ)}$

8. TIC = Carrying cost **+** Ordering cost

9. TCC = $\dfrac{C (EOQ + SS)}{2}$

10. TOC = O x $\dfrac{D}{EOQ}$

11. Number of orders = $\dfrac{D}{EOQ}$

12. Average inventory = $\dfrac{EOQ + SS}{2}$

13. Maximum inventory = EOQ + SS

14. EIR = $\dfrac{\text{interest amount received}}{} \times \dfrac{12}{\text{maturity}}$

15. EIR (Credit Line) $= \dfrac{\text{Interest+comitment fee}}{\text{Amount borrowed$-$Compensating Balance}} \times \dfrac{12}{\text{maturity}}$

16. EIR (Commercial Paper) $= \dfrac{\text{Interest +Floatation cost}}{\text{Face value $-$Interest $-$Cost}} \times \dfrac{12}{\text{Maturity}}$

17. $Cps = \dfrac{D}{Po - Fc}$

18. $Cee = \dfrac{D1}{Po - Fc} + g$

19. $Cie = \dfrac{D1}{Po} + g$

20. Cb before tax $= Cbbt = \dfrac{[\frac{I}{m} + \frac{Pv-(Po-Fc)}{n \times m}]}{\frac{Pv+(Po-Fc)}{2}} \times 100$

21. Cb after tax $= Cbat = Cbbt(1 - t)$

22. Ordinary Annuity, Present Value $= PV = FV$ (PVIF nxm, i/m)

23. Present Value of Annuity, PVA $= A$ (PVIFA nxm, i/m)

24. Non-annuity, Future Value $= FV = PV$ (FVIF nxm, i/m)

25. Future Value of Annuity, FVA $= A$ (FVIFA nxm, i/m)

26. Payback period for non-annuity cashflow, Ppb $= (Ry - 1) + \dfrac{(IO - Tcfb4Ry)}{Cf\ Ry}$

27. Internal Rate of Return, IRR $= ACF$(PVIFA IRR,n) $= IO$

28. Net Present Value, NPV $= \Sigma ATTP / (1+i) - IO$