



**UNIVERSITI KUALA LUMPUR
BUSINESS SCHOOL**

**FINAL EXAMINATION
FEBRUARY 2025 SEMESTER**

COURSE CODE : EBP00404
COURSE NAME : INTRODUCTION TO FINANCE
PROGRAMME NAME : FOUNDATION IN BUSINESS (FIB)
DATE : 21 JUNE 2025
TIME : 9.00 AM – 12.00 PM
DURATION : 3 HOURS

INSTRUCTIONS TO CANDIDATES

1. Please **CAREFULLY** read the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **TWO (2) Sections; Section A and Section B.**
4. Answer **ALL** questions in **Section A and Section B.**
5. Please write your answers on the OMR answer sheet and answer booklet provided.
6. All questions must be answered in **English** (any other language is not allowed).
7. This question paper must not be removed from the examination hall.
8. Present and future tables and formulas have been appended for your reference.

THERE ARE ELEVEN (11) PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 Marks)**INSTRUCTION: Answer ALL questions****Please use the answer booklet provided**

1. The management of inventory is important because
 - A. Carrying excessive inventory can result in a loss of demand
 - B. Carrying too much inventory can result in a loss of efficiency and profitability
 - C. Decisions related to inventory are risky since inventory is acquired in anticipation of sales
 - D. All of the above

2. The purpose of carrying inventory is to
 - A. Make different production processes more dependent on sales.
 - B. Make sales more independent of the production process.
 - C. Have collateral for loans.
 - D. Improve the current ratio.

3. _____ is a computerized system that breaks down the bill of materials for each product in order to determine what to order, when to order and what priorities to assign to ordering.
 - A. The economic order quantity model.
 - B. The just in time system.
 - C. The ABC system.
 - D. Materials requirement planning

4. Accounts receivable and inventory
 - A. Tie up funds but earn only lower short-term rates.
 - B. Have opportunity costs.
 - C. Cannot be bought and sold.
 - D. Tie up funds, have opportunity costs, and may add to the firm's long-term value.

5. An ageing schedule of accounts receivable aids the financial manager in determining
- A. The number of receivables that is past due
 - B. The average age of the customers
 - C. The receivables turnover
 - D. The average length of the discount period
6. A trade credit discount such as 2/10 net 30 means
- A. a 2% penalty is due after 30 days
 - B. a 10% discount for cash on delivery and a 2% discount for payment within 30 days
 - C. a 2% discount for payment within 10 days and a 2% penalty if payment is made after 30 days.
 - D. a 2% discount if payment is made within 10 days, otherwise the total amount is due in 30 days.
7. Determine the effective annualized cost of foregoing the trade discount on terms 2/10 net 45
- A. 21.0%
 - B. 16.0%
 - C. 16.3%
 - D. 20.6%
8. Which of the following is **NOT** the reason for holding marketable securities?
- A. Payment of cash dividends
 - B. Expansion of inventory
 - C. Purchase of non-current assets
 - D. Recent sale of some long-term securities
9. Which of the following would be an example of the “transactions motive” for a firm holding cash balances?
- A. Investing “excess cash balances”
 - B. Purchasing inventory
 - C. Anticipating a downturn in the economy
 - D. Taking advantage of an anticipated decline in the price of raw materials.

10. A manager's main concern when managing cash and marketable securities is
- A. Liquidity and safety
 - B. Acceptable return on investment.
 - C. Maximization of profit.
 - D. Maximization of liquid assets.
11. What is the main factor in determining the cost of bank financing?
- A. Discount rate
 - B. Nominal rate
 - C. Effective rate
 - D. Prime rate
12. The advantage of using commercial paper includes
- A. It is secured by assets
 - B. It may be issued below the prime rate
 - C. It requires no compensating balance
 - D. B and C
13. Which of the following is an advantage of trade credit?
- A. The amount of credit extended expands and contracts with the needs of the firm.
 - B. Trade credit is conveniently obtained as a normal part of operations.
 - C. No formal agreements are generally involved in extending credit.
 - D. All of the above.
14. A firm is offered trade credit terms of 3/15 net 45. The firm does not take the discount and pays after 67 days. What is the annual cost of not taking the discount?
- A. 23.48%
 - B. 21.41%
 - C. 22.95%
 - D. 37.11%
15. The most important characteristic of inventory as collateral is its
- A. Security
 - B. Marketability
 - C. Perishability
 - D. Speciality

16. A floating lien is
- A. A receipt for the deposit of goods in a public warehouse.
 - B. A claim on specifically identified personal property to back a loan.
 - C. A security device acknowledging that the borrower holds specifically identified inventory
 - D. A general or blanket lien against a group of assets, such as inventory or receivables, without the assets being specifically identified.
17. An increase in time period that a commercial bank loan is outstanding, would mean, other things being equal,
- A. An increase in the effective interest rate
 - B. An increase in the principal amount borrowed
 - C. A reduction in the effective interest rate
 - D. None of the above
18. An inventory loan arrangement in which all of the borrower's inventories are used as collateral is termed as
- A. Floating lien agreement
 - B. Field warehouse-financing agreement
 - C. Terminal warehouse agreement
 - D. Chattel mortgage agreement
19. Which of the following is **NOT** a source of unsecured short-term credit?
- A. Commercial paper
 - B. Accrued taxes
 - C. Line of credit
 - D. Pledging of accounts receivables
20. Which of the following is not true regarding the use of short-term debt?
- A. It must be rolled over more often than long-term debt
 - B. There is uncertainty connected with interest costs on short-term debt from year to year
 - C. The firm is subject to greater liquidity risk when using short-term credit
 - D. Interest rates are usually higher on short-term debt

21. As the discount rate increases without limit, the present value of the future cash flows
- A. Gets larger without limit
 - B. Stays unchanged
 - C. Approaches zero
 - D. Gets smaller without limit, that is, approaches minus infinity
22. The cash flow of an ordinary annuity occurs at
- A. The beginning of each period
 - B. The end of each period
 - C. The middle of each period
 - D. The beginning and middle of each period
23. When an ordinary annuity is identical to an annuity due, the future value is
- A. Greater
 - B. Less
 - C. Twice the amount
 - D. Half the amount
24. A perpetuity is an annuity with
- A. A life of more than 50 years
 - B. A life of less than 50 years
 - C. An infinite life
 - D. A finite life
25. Compounding continuously is
- A. Compounding every hour
 - B. Compounding every minute
 - C. Compounding every second
 - D. Compounding every microsecond
26. Assume that money has a time value. Which of the following statements is true?
- A. An annuity will always have a greater present value than the present value of a perpetuity that has periodic payments of the same amount as the annuity
 - B. The present value of a single sum will always be greater than its future value.
 - C. An annuity due will always have a greater future value than an ordinary annuity.
 - D. All of the above statements are true.

27. An annuity is best defined as
- A. A series of payments for a specified period of time
 - B. Any series of payments
 - C. A series of equal payments for a specified number of years.
 - D. A series of equal payments occurring at equal intervals for a specified number of periods.
28. Which of the following statements best describes the concept of the time value of money?
- A. Money has the same value regardless of when it is received.
 - B. Money received in the future is worth more than money received today.
 - C. Money received today is worth more than money received in the future due to its potential earning capacity.
 - D. Money loses its value over time due to inflation.
29. Which of the following statements is true about simple interest?
- A. Simple interest is calculated on the initial principal and the accumulated interest.
 - B. Simple interest results in higher returns compared to compound interest over the same period.
 - C. Simple interest is only used for short-term loans.
 - D. Simple interest is calculated on the initial principal only.
30. Which of the following best describes annual compounding?
- A. Interest is added to the principal four times a year.
 - B. Interest is added to the principal monthly.
 - C. Interest is added to the principal once a year.
 - D. Interest is added to the principal twice a year.
31. Independent projects occur when
- A. Projects with cash flows is unrelated to one another.
 - B. Projects with cash flows are related to one another.
 - C. Projects with cash flows are not impact to one another.
 - D. None of the above.

32. Capital budgeting involves several processes, **except**
- A. Generating long-term investment proposals, which are consistent with firm's long- term objectives.
 - B. Estimating the relevant after-tax incremental cash flows for these projects proposals.
 - C. Evaluating these cash flows.
 - D. Reevaluating cash budgets
33. The cash flows resulting from the termination of a project at the end of its life is called
- A. Initial Outlay
 - B. The salvage value
 - C. Recovered net working capital
 - D. The terminal value
34. Capital rationing is commonly
- A. Will maintain the performance of firm's value
 - B. Will increase the performance of firm's value
 - C. Will decrease the performance of firm's value
 - D. No impact on the performance of firm's value
35. What Capital budgeting consists of, except
- A. Index
 - B. Initial outlay
 - C. Differential cash flow
 - D. Terminal cash flow
36. The following are discounted cash flow methods, except:
- A. Internal rate of return
 - B. Discounted payback period
 - C. Loss index
 - D. Modified internal rate of return

37. By accepting a project that gives a positive net present value, it represents
- A. Firm's value and shareholders' wealth are increasing.
 - B. Firm's value and shareholders' wealth are decreasing.
 - C. Firm's value and shareholders' wealth are consistent.
 - D. None of the above.
38. If a proposed project utilizes the building currently owned by the firm, it should be conducted with
- A. Depreciation post.
 - B. An opportunity cost.
 - C. Sunk cost.
 - D. All of the above. [OBJ]
39. Which of the following is a disadvantage of internal rate of return?
- A. It applies the time value concept of money.
 - B. This method is tedious and time-consuming, as it normally requires a trial-and-error basis to determine the internal rate of return.
 - C. It uses cash flows.
 - D. Reflected the true timing of the benefits and costs involved with a project.
40. The net investment of a replacement project excluded
- A. Import duties of the new assets
 - B. Purchase price of new assets
 - C. Interest expenses arising from the funds used.
 - D. Sales proceeds from the sale of the old asset.

SECTION B (Total: 60 Marks)**INSTRUCTION: Answer ALL questions using the answer booklet provided****Question 1**

Labubu Softies is a company selling soft toys in Malaysia. In 2024, the company earning sales on credit of RM400,000,000 per year. The average collection period is 50 days whereas the selling price of the products is RM65 per unit and the variable cost is RM60 per unit.

Labubu Softies is considering to change its accounts receivable policy that will result in a 25% increase in sales. The ACP is expected to increase by 15%. However, it is expected that no changes in bad debts. Required rate of return on investment is 12%

Required:

- a. Calculate profit from the proposed change.
(12 marks)
- b. What would you recommend the management to consider from your findings?
(2 marks)
- c. If the company implement the proposed change, what would be helpful in the analysis?
(1 mark)

Question 2

UBIS Education Berhad needs immediate additional working capital of RM750,000 to fund their new expansion of education programmes. As the Corporate Finance Manager handling the new project, you have four possible solutions to fund the required amount.

1. A loan from OCBC Bank at 13% discounted interest. The bank requires 10% compensating balance.
2. A loan from HSBC Bank at a simple interest rate of 11% and a compensating balance of 15%. A deposit of RM50,000 with the bank exists.
3. Commercial paper issued at every six months at an interest rate of 10%. A floatation cost of RM15,000 will be incurred for each issuance.
4. A line of credit of RM1,000,000 from Asian Finance Bank at an interest rate of 12% and a commitment fee of 5% on the unused balance.

Required:

Calculate the effective annual cost of each source of fund and advise the company on which source of financing to choose. Explain the reason(s) of your choice

(15 marks)

Question 3

- a. Amir recently graduated from UniKL Business School and started working as a Marketing Executive in a company that requires him to travel often. He decided to buy a brand-new Axia at the price of RM45,000.00. he paid RM5,000 as the downpayment. He is planning to pay the balance over the next 5 years in 5 equal annual end-of-the year payments. The interest charges is 7%. Calculate the equal annual end-of-year payment necessary to amortize fully the loan over five years.

(10 marks)

- b. Calculate the present value of the cash flows shown in the following table for Aspen Bhd. Assume that the opportunity cost is 8%.

Year	1	2	3	4	5	6
Cash Flow	400	400	400	300	500	200

(5 marks)

Question 4

CACTUS is utilizing a moulding machine that was acquired five years ago. The remaining useful life of the machine is five years. The production department recommended replacing the current machine to improve the production efficiency.

The new machine costs RM600,000, and it has a useful life of five years. Modification of the machine is required for its specialized functions. The cost of modification is RM15,000.

Upon reaching the conclusion of its operational lifespan, the old machine may be disposed of for a value of RM60,000. The machine was acquired for RM400,000. The salvage value of the machine is RM20,000. The current selling price of the machine is RM150,000.

The new machine demonstrates high efficiency of the production. Consequently, the supplementary information is as follows:

- i. Additional raw materials required for the production is RM20,000.
- ii. Accruals increased by RM25,000.
- iii. Sales increased by RM180,000
- iv. Production costs have risen by RM70,000.
- v. The reduction in defects incurred a cost of RM18,000.
- vi. Reduction in labour costs by RM68,000

The company adopts the straight-line method for the depreciation of all non-current assets. The corporate tax rate is 10 percent.

Calculate:

- i. Initial outlay
- ii. Differential cash flow
- iii. Terminal cash flow

(15 marks)

END OF EXAMINATION PAPER

Appendix 1: List of Formulas

Current Assets Management

1. Total Inventory Cost = Total Ordering Cost + Total Holding Costs
2. $EOQ = \sqrt{2 \times S \times O/H}$
3. Order Cost = $O \times \left(\frac{S}{Q}\right)$
4. Holding Cost = $H \times \left(\frac{Q}{2}\right)$
5. Total Cost = $(O \times S/Q) + (H \times Q/2)$
6. Reorder Point = No of days lead time $\times$ Amount used daily
7. Annualized opportunity cost of foregoing the discount = $[a/(1-a)] \times [360/(c-b)]$

Management of Current Liabilities

1. $i = \frac{a}{(1-a)} \times \frac{360}{(c-b)}$
2. $EAR = \frac{\text{Interest}}{\text{Amount Received}}$

Time Value of Money

1. $FV_n = PV (1 + i)^n$
2. $PV_n = \frac{FV_n}{(1+r)^n}$
3. $FV_n = CF_1 \times \left\{ \frac{(1+r)^n - 1}{(r)} \right\}$
4. $FV_n = PMT \times FVIFA_{i,n}$
5. $PV_0 = \left(\frac{CF_1}{r} \right) \times \left\{ 1 - \frac{1}{(1+r)^n} \right\}$
6. $PV_n = PMT \times PVIFA_{i,n}$
7. $FVA_n = CF_0 \times \left\{ \frac{(1+r)^n - 1}{(r)} \right\} \times (1 + r)$
8. $FVA_n = PMT (FVIFA_{i,n}) (1 + r)$
9. $PV_0 = \left(\frac{CF_0}{r} \right) \times \left\{ 1 - \frac{1}{(1+r)^n} \right\} \times (1 + r)$
10. $PVA_n = PMT \times (PVIFA_{i,n}) (1 + r)$
11. $CF_1 = (PV_0 \times r) \div \left\{ 1 - \frac{1}{(1+r)^n} \right\}$
12. $PVIFA_{i,\infty} = PMT \times \frac{1}{i}$

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-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	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	5.0188	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