

University of Swaziland
Department of Accounting
Supplementary Exam Paper

Degree/Diploma and Year of Study : B.Com IV
Title of Paper : Business Finance I.
Course Code : AC 403
Time Allowed : **3 Hours.**

- Instructions:
1. **The total number of questions on this paper are five (5).**
 2. **Section A is compulsory and answer any two questions from Section B.**
 3. **The marks awarded for a question / part are indicated at the end of each question / part of question.**
 4. **Where applicable, submit all workings and calculations on the answer sheet alongside the case.**
 5. **Calculations are to be made to two decimal places of accuracy, unless otherwise instructed.**

Note: You are reminded that in assessing your work, account will be taken of accuracy of the language and the general quality of expression, together with the layout and presentation of your final answer.

SPECIAL REQUIREMENTS : CALCULATOR AND PV TABLES

This paper is not to be opened until permission has been granted by the invigilator.

SECTION A
ANSWER BOTH THE QUESTIONS

QUESTION 1:

- a) Suppose, the risk-free rate is 8 percent . The expected return on the market is 14 percent. If a particular stock has a beta of .60. What is its expected return based on the CAPM?
(5 marks)

If another stock has an expected return of 20 percent what must its beta be?

(3marks)

- b) An investor is considering the purchase of a five year E 1,000 par value bond, bearing a coupon rate of interest of 7 percent. The investor's required rate of return is 8 percent. Should she be willing to pay now to purchase the bond if it matures at par?

(6 marks)

- c) The current price of a preference share is E60 and the annual dividend is E4. What is the yield on the preference share?
(2 marks)

- d) The last dividend paid by T R Dlamini holdings was E 2.40. Its required rate of return is 12% in view of the company's strong financial position and consequent low risk and its current stock price is E40. If dividends are expected to grow at a constant growth rate 'g', in the future, and if the required rate of return is expected to remain at 12 percent, what is the company's expected stock price five years from now? (Note: Round the value of 'g' up to two significant decimal digits)

(9 marks)

(Total 25 marks)

QUESTION 2:

- a) Identify and discuss three different ways capital is transferred between savers and borrowers in financial systems. Draw supportive diagrams.
(10 marks)
- b) Discuss in detail the role of financial intermediaries and the economic functions they perform. Also provide suitable examples from the financial system existing in Swaziland where available.
(15 marks)

(Total 25 marks)

SECTION B
ANSWER ANY TWO QUESTIONS

QUESTION 3:

The financial statements of Good Luck Corporation for the current year ended 31st March 2007 reveal the following information.

Ratio of current assets to current liabilities = 1.75

Quick ratio (receivables and bank balance to current liabilities) = 1.25

Common shares of E10 each = E120,000

Net current assets = E60,600

Fixed assets (Net Block) as a percentage of Owner's Equity as on closing date = 60%

Annual rate of turnover of stock (based on cost at March 31st) = 5.26 times

Sales = E265,630

Average age of outstanding receivables for the current year = 2 months

On March 31st, the current assets consisted of stock, receivables and bank balances.

Required:

- i) Find out various assets and liabilities based on the information provided by Good Luck Corporation for the year ended 31st Mar, 2007.
- ii) Construct the balance sheet as on March 31st, 2007 in as much detail as possible:

(Total 25 marks)

QUESTION 4:

ABC Company, Matsapha, is considering two mutually exclusive projects. Both require an initial cash outlay of E 10,000 each and have a life of five years. The company's required rate of return is 10 percent and pays tax at 50 percent rate. The projects will be depreciated on a straight line basis. The before-tax cash-flows expected to be generated by the projects are as follows:

| Year | Before-tax cash-flows (E) | | | | |
|-----------|---------------------------|-------|-------|-------|-------|
| | 1 | 2 | 3 | 4 | 5 |
| Project A | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Project B | 6,000 | 3,000 | 2,000 | 5,000 | 5,000 |

Required:

- a) The relevant cash-flows for the projects A and B. **(5 marks)**
Evaluate the Projects based on each of the following techniques and advise which project is financially viable?
- b) The Payback period for the projects **(4 marks)**
- c) The average rate of return for the projects. **(4 marks)**
- d) Net present value for the projects. **(5 marks)**
- e) Internal rate of return for the projects. **(5 marks)**
- f) Which project is more preferable? Comment. **(2 marks)**
- (Total 25 marks)**

QUESTION 5:

- a) Simelane Plastics, Manzini., uses Baumol model to determine the optimal cash balance to be maintained by their firm. The interest, r , is 10 percent, the fixed cost, F , of acquiring new cash is E 30 per transaction, and the total annual cash needs are E 2 million. Construct a table showing the holding costs, the transaction costs, and the total costs for E 20,000., E 25,000., E 30,000., E 35,000., E 40,000., E 45,000.
- i) Based on these numbers, give a close estimate of the maximum cash the Simelane plastics should hold **(10 marks)**
- ii) Compare the estimate to the actual value found from the Baumol formula. **(5 marks)**

b) Shabangu Engineering Company, Piggs Peak is considering to raise E 500,000 for the construction of a new plant. The company can raise funds using common shares, bonds or preference shares or a combination of any of these three sources. The following three alternative financial plans have been approved and put before the planning committee.

- i) The company may issue 50,000 common shares at a price of E 10 per share.
- ii) The company may issue 25,000 common shares at E 10 each and 2,500 bonds of E 100 denomination bearing 8% coupon rate of interest.
- iii) The company may issue 25,000 common shares at E 10 per share and 2,500 preference shares at E 100 per share bearing 8% rate of dividend.

As there are expected to be wide fluctuations in the engineering industry, the sales of the company are likely to fluctuate widely. It is estimated that EBIT could vary between E 10,000, E 20,000, E 40,000, E 60,000, E 100,000.

- a) What is the EPS under each of these three financial plans? **(15 marks)**
(Total 25 marks)

End of question paper

Present Value of an Annuity of \$1

| <i>n</i> | Interest rate (<i>r</i>) | | | | | | | | | | | |
|----------|----------------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|
| | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 11 | 10.3676 | 9.7868 | 9.2526 | 8.7605 | 8.3064 | 7.8869 | 7.4987 | 7.1390 | 6.8052 | 6.4951 | 6.2065 | 5.9377 |
| 12 | 11.2551 | 10.5753 | 9.9540 | 9.3851 | 8.8633 | 8.3838 | 7.9427 | 7.5361 | 7.1607 | 6.8137 | 6.4924 | 6.1944 |
| 13 | 12.1337 | 11.3484 | 10.6350 | 9.9856 | 9.3936 | 8.8527 | 8.3577 | 7.9038 | 7.4869 | 7.1034 | 6.7499 | 6.4235 |
| 14 | 13.0037 | 12.1062 | 11.2961 | 10.5631 | 9.8986 | 9.2950 | 8.7455 | 8.2442 | 7.7862 | 7.3667 | 6.9819 | 6.6282 |
| 15 | 13.8651 | 12.8493 | 11.9379 | 11.1184 | 10.3797 | 9.7122 | 9.1079 | 8.5595 | 8.0607 | 7.6061 | 7.1909 | 6.8109 |
| 16 | 14.7179 | 13.5777 | 12.5611 | 11.6523 | 10.8378 | 10.1059 | 9.4466 | 8.8514 | 8.3126 | 7.8237 | 7.3792 | 6.9740 |
| 17 | 15.5623 | 14.2919 | 13.1661 | 12.1657 | 11.2741 | 10.4773 | 9.7632 | 9.1216 | 8.5436 | 8.0216 | 7.5488 | 7.1196 |
| 18 | 16.3983 | 14.9920 | 13.7535 | 12.6593 | 11.6896 | 10.8276 | 10.0591 | 9.3719 | 8.7556 | 8.2014 | 7.7016 | 7.2497 |
| 19 | 17.2260 | 15.6785 | 14.3238 | 13.1339 | 12.0853 | 11.1581 | 10.3356 | 9.6036 | 8.9501 | 8.3649 | 7.8393 | 7.3658 |
| 20 | 18.0456 | 16.3514 | 14.8775 | 13.5903 | 12.4622 | 11.4699 | 10.5940 | 9.8181 | 9.1285 | 8.5136 | 7.9633 | 7.4694 |
| 21 | 18.8570 | 17.0112 | 15.4150 | 14.0292 | 12.8212 | 11.7641 | 10.8355 | 10.0168 | 9.2922 | 8.6487 | 8.0751 | 7.5620 |
| 22 | 19.6604 | 17.6580 | 15.9369 | 14.4511 | 13.1630 | 12.0416 | 11.0612 | 10.2007 | 9.4424 | 8.7715 | 8.1757 | 7.6446 |
| 23 | 20.4558 | 18.2922 | 16.4436 | 14.8568 | 13.4886 | 12.3034 | 11.2722 | 10.3711 | 9.5802 | 8.8832 | 8.2664 | 7.7184 |
| 24 | 21.2434 | 18.9139 | 16.9355 | 15.2470 | 13.7986 | 12.5504 | 11.4693 | 10.5288 | 9.7066 | 8.9847 | 8.3481 | 7.7843 |
| 25 | 22.0232 | 19.5235 | 17.4131 | 15.6221 | 14.0939 | 12.7834 | 11.6536 | 10.6748 | 9.8226 | 9.0770 | 8.4217 | 7.8431 |
| 26 | 22.7952 | 20.1210 | 17.8768 | 15.9828 | 14.3752 | 13.0032 | 11.8258 | 10.8100 | 9.9290 | 9.1609 | 8.4881 | 7.8957 |
| 27 | 23.5596 | 20.7069 | 18.3270 | 16.3296 | 14.6430 | 13.2105 | 11.9867 | 10.9352 | 10.0266 | 9.2372 | 8.5478 | 7.9426 |
| 28 | 24.3164 | 21.2813 | 18.7641 | 16.6631 | 14.8981 | 13.4062 | 12.1371 | 11.0511 | 10.1161 | 9.3066 | 8.6016 | 7.9844 |
| 29 | 25.0658 | 21.8444 | 19.1885 | 16.9837 | 15.1411 | 13.5907 | 12.2777 | 11.1584 | 10.1983 | 9.3696 | 8.6501 | 8.0218 |
| 30 | 25.8077 | 22.3965 | 19.6004 | 17.2920 | 15.3725 | 13.7648 | 12.4090 | 11.2578 | 10.2737 | 9.4269 | 8.6938 | 8.0552 |
| 31 | 26.5423 | 22.9377 | 20.0004 | 17.5885 | 15.5928 | 13.9291 | 12.5318 | 11.3498 | 10.3428 | 9.4790 | 8.7331 | 8.0850 |
| 32 | 27.2696 | 23.4683 | 20.3888 | 17.8736 | 15.8027 | 14.0840 | 12.6466 | 11.4350 | 10.4062 | 9.5264 | 8.7686 | 8.1116 |
| 33 | 27.9897 | 23.9886 | 20.7658 | 18.1476 | 16.0025 | 14.2302 | 12.7538 | 11.5139 | 10.4644 | 9.5694 | 8.8005 | 8.1354 |
| 34 | 28.7027 | 24.4986 | 21.1318 | 18.4112 | 16.1929 | 14.3681 | 12.8540 | 11.5869 | 10.5178 | 9.6086 | 8.8293 | 8.1566 |
| 35 | 29.4086 | 24.9986 | 21.4872 | 18.6646 | 16.3742 | 14.4982 | 12.9477 | 11.6546 | 10.5668 | 9.6442 | 8.8552 | 8.1755 |
| 36 | 30.1075 | 25.4888 | 21.8323 | 18.9083 | 16.5469 | 14.6210 | 13.0352 | 11.7172 | 10.6118 | 9.6765 | 8.8786 | 8.1924 |
| 37 | 30.7995 | 25.9695 | 22.1672 | 19.1426 | 16.7113 | 14.7368 | 13.1170 | 11.7752 | 10.6530 | 9.7059 | 8.8996 | 8.2075 |
| 38 | 31.4847 | 26.4406 | 22.4925 | 19.3679 | 16.8679 | 14.8460 | 13.1935 | 11.8289 | 10.6908 | 9.7327 | 8.9186 | 8.2210 |
| 39 | 32.1630 | 26.9026 | 22.8082 | 19.5845 | 17.0170 | 14.9491 | 13.2649 | 11.8786 | 10.7255 | 9.7570 | 8.9357 | 8.2330 |
| 40 | 32.8347 | 27.3555 | 23.1148 | 19.7928 | 17.1591 | 15.0463 | 13.3317 | 11.9246 | 10.7574 | 9.7791 | 8.9511 | 8.2438 |

Present Value of an Annuity of \$1

| Periods <i>n</i> | Interest rate (<i>r</i>) | | | | | | | | | | | |
|---------------------|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 21% | 22% | 23% | 24% |
| 1 | 0.8850 | 0.8772 | 0.8696 | 0.8621 | 0.8547 | 0.8475 | 0.8403 | 0.8333 | 0.8264 | 0.8197 | 0.8130 | 0.8065 |
| 2 | 1.6681 | 1.6467 | 1.6257 | 1.6052 | 1.5852 | 1.5656 | 1.5465 | 1.5278 | 1.5095 | 1.4915 | 1.4740 | 1.4568 |
| 3 | 2.3612 | 2.3216 | 2.2832 | 2.2459 | 2.2096 | 2.1743 | 2.1399 | 2.1065 | 2.0739 | 2.0422 | 2.0114 | 1.9813 |
| 4 | 2.9745 | 2.9137 | 2.8550 | 2.7982 | 2.7432 | 2.6901 | 2.6386 | 2.5887 | 2.5404 | 2.4936 | 2.4483 | 2.4043 |
| 5 | 3.5172 | 3.4331 | 3.3522 | 3.2743 | 3.1993 | 3.1272 | 3.0576 | 2.9906 | 2.9260 | 2.8636 | 2.8035 | 2.7454 |
| 6 | 3.9975 | 3.8887 | 3.7845 | 3.6847 | 3.5892 | 3.4976 | 3.4098 | 3.3255 | 3.2446 | 3.1669 | 3.0923 | 3.0205 |
| 7 | 4.4226 | 4.2883 | 4.1604 | 4.0386 | 3.9224 | 3.8115 | 3.7057 | 3.6046 | 3.5079 | 3.4155 | 3.3270 | 3.2423 |
| 8 | 4.7988 | 4.6389 | 4.4873 | 4.3436 | 4.2072 | 4.0776 | 3.9544 | 3.8372 | 3.7256 | 3.6193 | 3.5179 | 3.4212 |
| 9 | 5.1317 | 4.9464 | 4.7716 | 4.6065 | 4.4506 | 4.3030 | 4.1633 | 4.0310 | 3.9054 | 3.7863 | 3.6731 | 3.5655 |
| 10 | 5.4262 | 5.2161 | 5.0188 | 4.8332 | 4.6586 | 4.4941 | 4.3389 | 4.1925 | 4.0541 | 3.9232 | 3.7993 | 3.6819 |
| 11 | 5.6869 | 5.4527 | 5.2337 | 5.0286 | 4.8364 | 4.6560 | 4.4865 | 4.3271 | 4.1769 | 4.0354 | 3.9018 | 3.7757 |
| 12 | 5.9176 | 5.6603 | 5.4206 | 5.1971 | 4.9884 | 4.7932 | 4.6105 | 4.4392 | 4.2784 | 4.1274 | 3.9852 | 3.8514 |
| 13 | 6.1218 | 5.8424 | 5.5831 | 5.3423 | 5.1183 | 4.9095 | 4.7147 | 4.5327 | 4.3624 | 4.2028 | 4.0530 | 3.9124 |
| 14 | 6.3025 | 6.0021 | 5.7245 | 5.4675 | 5.2293 | 5.0081 | 4.8023 | 4.6106 | 4.4317 | 4.2646 | 4.1082 | 3.9616 |
| 15 | 6.4624 | 6.1422 | 5.8474 | 5.5755 | 5.3242 | 5.0916 | 4.8759 | 4.6755 | 4.4890 | 4.3152 | 4.1530 | 4.0013 |
| 16 | 6.6039 | 6.2651 | 5.9542 | 5.6685 | 5.4053 | 5.1624 | 4.9377 | 4.7296 | 4.5364 | 4.3567 | 4.1894 | 4.0333 |
| 17 | 6.7291 | 6.3729 | 6.0472 | 5.7487 | 5.4746 | 5.2223 | 4.9897 | 4.7746 | 4.5755 | 4.3908 | 4.2190 | 4.0591 |
| 18 | 6.8399 | 6.4674 | 6.1280 | 5.8178 | 5.5339 | 5.2732 | 5.0333 | 4.8122 | 4.6079 | 4.4187 | 4.2431 | 4.0799 |
| 19 | 6.9380 | 6.5504 | 6.1982 | 5.8775 | 5.5845 | 5.3162 | 5.0700 | 4.8435 | 4.6346 | 4.4415 | 4.2627 | 4.0967 |
| 20 | 7.0248 | 6.6231 | 6.2593 | 5.9288 | 5.6278 | 5.3527 | 5.1009 | 4.8696 | 4.6567 | 4.4603 | 4.2786 | 4.1103 |
| 21 | 7.1016 | 6.6870 | 6.3125 | 5.9731 | 5.6648 | 5.3837 | 5.1268 | 4.8913 | 4.6750 | 4.4756 | 4.2916 | 4.1212 |
| 22 | 7.1695 | 6.7429 | 6.3587 | 6.0113 | 5.6964 | 5.4099 | 5.1486 | 4.9094 | 4.6900 | 4.4882 | 4.3021 | 4.1300 |
| 23 | 7.2297 | 6.7921 | 6.3988 | 6.0442 | 5.7234 | 5.4321 | 5.1668 | 4.9245 | 4.7025 | 4.4985 | 4.3106 | 4.1371 |
| 24 | 7.2829 | 6.8351 | 6.4338 | 6.0726 | 5.7465 | 5.4509 | 5.1822 | 4.9371 | 4.7128 | 4.5070 | 4.3176 | 4.1428 |
| 25 | 7.3300 | 6.8729 | 6.4641 | 6.0971 | 5.7662 | 5.4669 | 5.1951 | 4.9476 | 4.7213 | 4.5139 | 4.3232 | 4.1474 |
| 26 | 7.3717 | 6.9061 | 6.4906 | 6.1182 | 5.7831 | 5.4804 | 5.2060 | 4.9563 | 4.7284 | 4.5196 | 4.3278 | 4.1511 |
| 27 | 7.4086 | 6.9352 | 6.5135 | 6.1364 | 5.7975 | 5.4919 | 5.2151 | 4.9636 | 4.7342 | 4.5243 | 4.3316 | 4.1542 |
| 28 | 7.4412 | 6.9607 | 6.5335 | 6.1520 | 5.8099 | 5.5016 | 5.2228 | 4.9697 | 4.7390 | 4.5281 | 4.3346 | 4.1566 |
| 29 | 7.4701 | 6.9830 | 6.5509 | 6.1656 | 5.8204 | 5.5098 | 5.2292 | 4.9747 | 4.7430 | 4.5312 | 4.3371 | 4.1585 |
| 30 | 7.4957 | 7.0027 | 6.5660 | 6.1772 | 5.8294 | 5.5168 | 5.2347 | 4.9789 | 4.7463 | 4.5338 | 4.3391 | 4.1601 |
| 31 | 7.5183 | 7.0199 | 6.5791 | 6.1872 | 5.8371 | 5.5227 | 5.2392 | 4.9824 | 4.7490 | 4.5359 | 4.3407 | 4.1614 |
| 32 | 7.5383 | 7.0350 | 6.5905 | 6.1959 | 5.8437 | 5.5277 | 5.2430 | 4.9854 | 4.7512 | 4.5376 | 4.3421 | 4.1624 |
| 33 | 7.5560 | 7.0482 | 6.6005 | 6.2034 | 5.8493 | 5.5320 | 5.2462 | 4.9878 | 4.7531 | 4.5390 | 4.3431 | 4.1632 |
| 34 | 7.5717 | 7.0599 | 6.6091 | 6.2098 | 5.8541 | 5.5356 | 5.2489 | 4.9898 | 4.7546 | 4.5402 | 4.3440 | 4.1639 |
| 35 | 7.5856 | 7.0700 | 6.6166 | 6.2153 | 5.8582 | 5.5386 | 5.2512 | 4.9915 | 4.7559 | 4.5411 | 4.3447 | 4.1644 |
| 36 | 7.5979 | 7.0790 | 6.6231 | 6.2201 | 5.8617 | 5.5412 | 5.2531 | 4.9929 | 4.7569 | 4.5419 | 4.3453 | 4.1649 |
| 37 | 7.6087 | 7.0868 | 6.6288 | 6.2242 | 5.8647 | 5.5434 | 5.2547 | 4.9941 | 4.7578 | 4.5426 | 4.3458 | 4.1652 |
| 38 | 7.6183 | 7.0937 | 6.6338 | 6.2278 | 5.8673 | 5.5452 | 5.2561 | 4.9951 | 4.7585 | 4.5431 | 4.3462 | 4.1655 |
| 39 | 7.6268 | 7.0997 | 6.6380 | 6.2309 | 5.8695 | 5.5468 | 5.2572 | 4.9959 | 4.7591 | 4.5435 | 4.3465 | 4.1657 |
| 40 | 7.6344 | 7.1050 | 6.6418 | 6.2335 | 5.8713 | 5.5482 | 5.2582 | 4.9966 | 4.7596 | 4.5439 | 4.3467 | 4.1659 |

Present Value of \$1

| Periods (n) | Interest rate (r) | | | | | | | | | | | |
|----------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 1% | 2% | 3% | 4% | 5% | 6% | 7% | 8% | 9% | 10% | 11% | 12% |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 26 | 0.7720 | 0.5976 | 0.4637 | 0.3607 | 0.2812 | 0.2198 | 0.1722 | 0.1352 | 0.1064 | 0.0839 | 0.0663 | 0.0525 |
| 27 | 0.7644 | 0.5859 | 0.4502 | 0.3468 | 0.2678 | 0.2074 | 0.1609 | 0.1252 | 0.0976 | 0.0763 | 0.0597 | 0.0469 |
| 28 | 0.7568 | 0.5744 | 0.4371 | 0.3335 | 0.2551 | 0.1956 | 0.1504 | 0.1159 | 0.0895 | 0.0693 | 0.0538 | 0.0419 |
| 29 | 0.7493 | 0.5631 | 0.4243 | 0.3207 | 0.2429 | 0.1846 | 0.1406 | 0.1073 | 0.0822 | 0.0630 | 0.0485 | 0.0374 |
| 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 |
| 31 | 0.7346 | 0.5412 | 0.4000 | 0.2965 | 0.2204 | 0.1643 | 0.1228 | 0.0920 | 0.0691 | 0.0521 | 0.0394 | 0.0298 |
| 32 | 0.7273 | 0.5306 | 0.3883 | 0.2851 | 0.2099 | 0.1550 | 0.1147 | 0.0852 | 0.0634 | 0.0474 | 0.0355 | 0.0266 |
| 33 | 0.7201 | 0.5202 | 0.3770 | 0.2741 | 0.1999 | 0.1462 | 0.1072 | 0.0789 | 0.0582 | 0.0431 | 0.0319 | 0.0238 |
| 34 | 0.7130 | 0.5100 | 0.3660 | 0.2636 | 0.1904 | 0.1379 | 0.1002 | 0.0730 | 0.0534 | 0.0391 | 0.0288 | 0.0212 |
| 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 |
| 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 |
| 37 | 0.6920 | 0.4806 | 0.3350 | 0.2343 | 0.1644 | 0.1158 | 0.0818 | 0.0580 | 0.0412 | 0.0294 | 0.0210 | 0.0151 |
| 38 | 0.6852 | 0.4712 | 0.3252 | 0.2253 | 0.1566 | 0.1092 | 0.0765 | 0.0537 | 0.0378 | 0.0267 | 0.0190 | 0.0135 |
| 39 | 0.6784 | 0.4619 | 0.3158 | 0.2166 | 0.1491 | 0.1031 | 0.0715 | 0.0497 | 0.0347 | 0.0243 | 0.0171 | 0.0120 |
| 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 |

Present Value of \$1

| Periods (n) | Interest rate (r) | | | | | | | | | | | |
|----------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 13% | 14% | 15% | 16% | 17% | 18% | 19% | 20% | 21% | 22% | 23% | 24% |
| 1 | 0.8850 | 0.8772 | 0.8696 | 0.8621 | 0.8547 | 0.8475 | 0.8403 | 0.8333 | 0.8264 | 0.8197 | 0.8130 | 0.8065 |
| 2 | 0.7831 | 0.7695 | 0.7561 | 0.7432 | 0.7305 | 0.7182 | 0.7062 | 0.6944 | 0.6830 | 0.6719 | 0.6610 | 0.6504 |
| 3 | 0.6931 | 0.6750 | 0.6575 | 0.6407 | 0.6244 | 0.6086 | 0.5934 | 0.5787 | 0.5645 | 0.5507 | 0.5374 | 0.5245 |
| 4 | 0.6133 | 0.5921 | 0.5718 | 0.5523 | 0.5337 | 0.5158 | 0.4987 | 0.4823 | 0.4665 | 0.4514 | 0.4369 | 0.4230 |
| 5 | 0.5428 | 0.5194 | 0.4972 | 0.4761 | 0.4561 | 0.4371 | 0.4190 | 0.4019 | 0.3855 | 0.3700 | 0.3552 | 0.3411 |
| 6 | 0.4803 | 0.4556 | 0.4323 | 0.4104 | 0.3898 | 0.3704 | 0.3521 | 0.3349 | 0.3186 | 0.3033 | 0.2888 | 0.2751 |
| 7 | 0.4251 | 0.3996 | 0.3759 | 0.3538 | 0.3332 | 0.3139 | 0.2959 | 0.2791 | 0.2633 | 0.2486 | 0.2348 | 0.2218 |
| 8 | 0.3762 | 0.3506 | 0.3269 | 0.3050 | 0.2848 | 0.2660 | 0.2487 | 0.2326 | 0.2176 | 0.2038 | 0.1909 | 0.1789 |
| 9 | 0.3329 | 0.3075 | 0.2843 | 0.2630 | 0.2434 | 0.2255 | 0.2090 | 0.1938 | 0.1799 | 0.1670 | 0.1552 | 0.1443 |
| 10 | 0.2946 | 0.2697 | 0.2472 | 0.2267 | 0.2080 | 0.1911 | 0.1756 | 0.1615 | 0.1486 | 0.1369 | 0.1262 | 0.1164 |
| 11 | 0.2607 | 0.2366 | 0.2149 | 0.1954 | 0.1778 | 0.1619 | 0.1476 | 0.1346 | 0.1228 | 0.1122 | 0.1026 | 0.0938 |
| 12 | 0.2307 | 0.2076 | 0.1869 | 0.1685 | 0.1520 | 0.1372 | 0.1240 | 0.1122 | 0.1015 | 0.0920 | 0.0834 | 0.0757 |
| 13 | 0.2042 | 0.1821 | 0.1625 | 0.1452 | 0.1299 | 0.1163 | 0.1042 | 0.0935 | 0.0839 | 0.0754 | 0.0678 | 0.0610 |
| 14 | 0.1807 | 0.1597 | 0.1413 | 0.1252 | 0.1110 | 0.0985 | 0.0876 | 0.0779 | 0.0693 | 0.0618 | 0.0551 | 0.0492 |
| 15 | 0.1599 | 0.1401 | 0.1229 | 0.1079 | 0.0949 | 0.0835 | 0.0736 | 0.0649 | 0.0573 | 0.0507 | 0.0448 | 0.0397 |
| 16 | 0.1415 | 0.1229 | 0.1069 | 0.0930 | 0.0811 | 0.0708 | 0.0618 | 0.0541 | 0.0474 | 0.0415 | 0.0364 | 0.0320 |
| 17 | 0.1252 | 0.1078 | 0.0929 | 0.0802 | 0.0693 | 0.0600 | 0.0520 | 0.0451 | 0.0391 | 0.0340 | 0.0296 | 0.0258 |
| 18 | 0.1108 | 0.0946 | 0.0808 | 0.0691 | 0.0592 | 0.0508 | 0.0437 | 0.0376 | 0.0323 | 0.0279 | 0.0241 | 0.0208 |
| 19 | 0.0981 | 0.0829 | 0.0703 | 0.0596 | 0.0506 | 0.0431 | 0.0367 | 0.0313 | 0.0267 | 0.0229 | 0.0196 | 0.0168 |
| 20 | 0.0868 | 0.0728 | 0.0611 | 0.0514 | 0.0433 | 0.0365 | 0.0308 | 0.0261 | 0.0221 | 0.0187 | 0.0159 | 0.0135 |
| 21 | 0.0768 | 0.0638 | 0.0531 | 0.0443 | 0.0370 | 0.0309 | 0.0259 | 0.0217 | 0.0183 | 0.0154 | 0.0129 | 0.0109 |
| 22 | 0.0680 | 0.0560 | 0.0462 | 0.0382 | 0.0316 | 0.0262 | 0.0218 | 0.0181 | 0.0151 | 0.0126 | 0.0105 | 0.0088 |
| 23 | 0.0601 | 0.0491 | 0.0402 | 0.0329 | 0.0270 | 0.0222 | 0.0183 | 0.0151 | 0.0125 | 0.0103 | 0.0086 | 0.0071 |
| 24 | 0.0532 | 0.0431 | 0.0349 | 0.0284 | 0.0231 | 0.0188 | 0.0154 | 0.0126 | 0.0103 | 0.0085 | 0.0070 | 0.0057 |
| 25 | 0.0471 | 0.0378 | 0.0304 | 0.0245 | 0.0197 | 0.0160 | 0.0129 | 0.0105 | 0.0085 | 0.0069 | 0.0057 | 0.0046 |
| 26 | 0.0417 | 0.0331 | 0.0264 | 0.0211 | 0.0169 | 0.0135 | 0.0109 | 0.0087 | 0.0070 | 0.0057 | 0.0046 | 0.0037 |
| 27 | 0.0369 | 0.0291 | 0.0230 | 0.0182 | 0.0144 | 0.0115 | 0.0091 | 0.0073 | 0.0058 | 0.0047 | 0.0037 | 0.0030 |
| 28 | 0.0326 | 0.0255 | 0.0200 | 0.0157 | 0.0123 | 0.0097 | 0.0077 | 0.0061 | 0.0048 | 0.0038 | 0.0030 | 0.0024 |
| 29 | 0.0289 | 0.0224 | 0.0174 | 0.0135 | 0.0105 | 0.0082 | 0.0064 | 0.0051 | 0.0040 | 0.0031 | 0.0025 | 0.0020 |
| 30 | 0.0256 | 0.0196 | 0.0151 | 0.0116 | 0.0090 | 0.0070 | 0.0054 | 0.0042 | 0.0033 | 0.0026 | 0.0020 | 0.0016 |
| 31 | 0.0226 | 0.0172 | 0.0131 | 0.0100 | 0.0070 | 0.0059 | 0.0046 | 0.0035 | 0.0027 | 0.0021 | 0.0016 | 0.0013 |
| 32 | 0.0200 | 0.0151 | 0.0114 | 0.0087 | 0.0066 | 0.0050 | 0.0038 | 0.0029 | 0.0022 | 0.0017 | 0.0013 | 0.0010 |
| 33 | 0.0177 | 0.0132 | 0.0099 | 0.0075 | 0.0056 | 0.0042 | 0.0032 | 0.0024 | 0.0019 | 0.0014 | 0.0011 | 0.0008 |
| 34 | 0.0157 | 0.0116 | 0.0086 | 0.0064 | 0.0048 | 0.0036 | 0.0027 | 0.0020 | 0.0015 | 0.0012 | 0.0009 | 0.0007 |
| 35 | 0.0139 | 0.0102 | 0.0075 | 0.0055 | 0.0041 | 0.0030 | 0.0023 | 0.0017 | 0.0013 | 0.0009 | 0.0007 | 0.0005 |
| 36 | 0.0123 | 0.0089 | 0.0065 | 0.0048 | 0.0035 | 0.0026 | 0.0019 | 0.0014 | 0.0010 | 0.0008 | 0.0006 | 0.0004 |
| 37 | 0.0109 | 0.0078 | 0.0057 | 0.0041 | 0.0030 | 0.0022 | 0.0016 | 0.0012 | 0.0009 | 0.0006 | 0.0005 | 0.0003 |
| 38 | 0.0096 | 0.0069 | 0.0049 | 0.0036 | 0.0026 | 0.0019 | 0.0013 | 0.0010 | 0.0007 | 0.0005 | 0.0004 | 0.0003 |
| 39 | 0.0085 | 0.0060 | 0.0043 | 0.0031 | 0.0022 | 0.0016 | 0.0011 | 0.0008 | 0.0006 | 0.0004 | 0.0003 | 0.0002 |
| 40 | 0.0075 | 0.0053 | 0.0037 | 0.0026 | 0.0019 | 0.0013 | 0.0010 | 0.0007 | 0.0005 | 0.0004 | 0.0003 | 0.0002 |