Chapter 03 Testbank

Student: _____

1.

A financial contract is:

A. a piece of advice provided by financial planners.
B. an agreement that involves only book entries and does not result in any cash flows.
C. an arrangement, agreement or investment that produces cash flows.
D. an agreement that results in a profit for the businesses concerned.

2.

The calculation that expresses the ratio of net cash inflows to net cash outflows produced by a financial contract is known as:

A. net present value.
B. net profit.
C. internal rate of return.
D. rate of return.

3.

The rate of return can be shown as:

A.

B.

C.

D.

4.

A principle that a dollar is worth more the sooner it is to be received, all other things equal, is:

A. the time value of money.
B. the value of money.
C. Fisher's effect.
D. net present value.

5.

A method of calculating interest in which, during the entire term of the loan, interest is computed on the original sum borrowed is the:

A. present value method.
B. simple interest method.
C. compound interest method.
D. interest rate method.

6.

The amount that corresponds to today's value of a promised future sum can be shown as:

A.

B.

C.

D.

7.

A process by which, through the operation of interest, a present sum becomes a greater sum in the future is:

A. the additive principle.
B. the accumulation principle.
C. the compounding principle.
D. the discounting principle.

8.

The interest rate where interest is charged at the same frequency as the quoted interest rate is the:

A. nominal interest rate.
B. real interest rate.
C. compound interest rate.
D. effective interest rate.

9.

The value, as at the date of the final cash flow promised in a financial contract, that is equivalent to the stream of promised cash flows is the:

A. present value of a contract.
B. future value of a contract.
C. terminal value of a contract.
D. discounted value of a contract.

10.

An annuity in which the first cash flow is to occur immediately is known as a/an:

A. ordinary annuity.
B. ordinary perpetuity.
C. annuity due.
D. growth annuity.

11.

An annuity in which the first cash flow is to occur after a time period that exceeds the time period between each subsequent cash flow is known as a/an:

A. deferred annuity.
B. growth annuity.
C. ordinary annuity.
D. annuity due.

12.

You have $10 000 to invest. If you invest it at 11.2% p.a. for six months, then invest the initial $10 000 together with any interest for a further 12 months at 12.7% p.a., what will be the value of your investment at the end of the 18-month period?

A.

$11 901.12

B.

$12 532.24

C.

$11 830.00

D.

$12 241.36

13.

You have borrowed $1000 from a friend to pay for unforeseen car repairs, with an agreement to pay interest at an annual rate of 18%, compounding daily. If you repaid your friend after 90 days, how much would you need to repay?

A. $1044.38
B. $1045.00
C. $1045.37
D. $1043.56

14.

If you invest $47 000 for five years at 9.7% p.a. (interest paid annually and then reinvested), what is the value of your investment at the end of the five-year period?

A. $81 910.13
B. $74 667.39
C. $56 560.22
D. $62 046.56

15.

What will your investment be worth in 10 years if you invest $15 000 at 12.5% p.a., payable at maturity, and your tax rate (paid annually) is 30 cents in the dollar?

A. $34 097
B. $48 710
C. $32 473
D. $34 704

16.

Calculate the average annual rate of return on an investment of $1000 that accumulates to $2005 in five years' time.

A. 14.93%
B. 8.8%
C. 100.5%
D. 17.63%

17.

If a term deposit paid an interest rate of 24% p.a. over the past six months, and the current balance is $1008, what was the amount initially invested?

A. $812.90
B. $681.08
C. $900.00
D. $975.00

18.

Assume that on 1 January 2011 you deposit $1000 into a savings account that pays 8% p.a. If the bank compounds interest annually, how much will you have in your account on 1 January 2014?

A. $1292.43
B. $1357.61
C. $1259.71
D. $1439.16

19.

Assume that on 1 January 2011 you deposit $1000 into a savings account that pays 8% p.a. If the bank compounds interest quarterly, how much will you have in your account on 1 January 2014?

A. $1268.24
B. $1349.13
C. $1301.15
D. $1483.09

20.

Suppose you deposited $250 at the end of 2011, 2012, 2013 and 2014. How much would you have in your account on 1 January 2015, based on annual compounding of 8% by your bank?

A. $1025.25
B. $1235.53
C. $1183.53
D. $1126.53

21.

You want to deposit amounts in the bank at the end of 2011, 2012, 2013 and 2014, so that you have $1259.71 in your account on 1 January 2015. Calculate how large each of your payments would need to be if the bank compounds quarterly at 8% p.a.

A. $279.56
B. $259.83
C. $284.19
D. $314.93

22.

Assume that you will require $1000 in four years' time. Suppose that you can afford to deposit only $186.29 at the end of each year, the first deposit to be made in one year's time. What interest rate would you require to reach your target if the bank compounds annually?

A. 15% p.a.
B. 18.5% p.a.
C. 20% p.a.
D. 22.5% p.a.

23.

You have a goal to raise $1000 in four years' time. If your mother gives you $400 at the end of the first year, you make six deposits of equal amounts every six months thereafter, and all the money is deposited in a bank, which pays 8% p.a., compounded semi-annually, how large must each of the six payments be for you to reach your target?

A. $74.46
B. $65.55
C. $82.74
D. $77.26

24.

Calculate the effective annual interest rate corresponding to 12% p.a., compounded quarterly.

A. 11.9%
B. 12.55%
C. 12.45%
D. 12.71%

25.

What is the present value of $500 payable in 10 years' time if the interest rate is 6% p.a.?

A. $290.50
B. $335.60
C. $895.40
D. $279.20

26.

What is the present value of the following cash flow stream, discounted at 7% p.a.: Year 1, $100; Year 2, $400; Years 3 through 20, $300?

A. $2859.20
B. $3563.40
C. $3078.63
D. $2782.40

27.

What is the implied interest rate if you borrow $85 000 and promise to pay back $201 229 at the end of 10 years?

A. 9% p.a.
B. 18% p.a.
C. 11% p.a.
D. 13% p.a.

28.

Karen has borrowed $12 000 in student loans at an annual interest rate of 9%. If she repays $1500 per annum, how long (to the nearest year) will it take to repay the loan?

A. 10 years
B. 15 years
C. 12 years
D. 17 years

29.

If the nominal interest rate is 12% p.a. and the inflation rate is expected to be 5% p.a., what is the real rate of interest?

A. 106.7%
B. 6.7%
C. 7%
D. 8.2%

30.

If a term deposit offers an interest rate of 10% p.a., compounding continuously, how much will an initial investment of $50 000 be worth after one year?

A. $55 258
B. $135 914
C. $62 519
D. $98 352

31.

What is the effective annual interest rate corresponding to a nominal interest rate of 10% p.a., compounding continuously?

A. 10.5%
B. 10.9%
C. 12.5%
D. 13%

32.

Calculate the value of an investment at the end of its fourth year if the initial investment is $10 000 and it produces the following annual rates of return: Year 1, gain 15%; Year 2, gain 17%; Year 3, loss 5%; Year 4, gain 4%.

A. $14 295
B. $13 100
C. $13 293
D. $11 957

33.

Calculate the present value of the following cash flows assuming they occur at the end of each year and the interest rate is 12% p.a.: Year 0, ($12 000); Year 1, $5670; Year 2, $11 250.

A. $2030.93
B. $26 030.93
C. $28 920
D. ($1163.19)

34.

Calculate the present value of a government security that promises to pay $100 p.a. forever, assuming an interest rate of 11% per annum.

A. $90
B. $1100
C. $909
D. Infinity.

35.

Debt Ltd borrowed $100 000 from its local bank to finance the purchase of new equipment. Annual payments are required over five years at a fixed interest rate of 10% p.a. How much is each annual payment?

A. $27 398.18
B. $20 000.00
C. $26 379.75
D. $24 444.12

36.

Debt Ltd borrowed $100 000 from its local bank to finance the purchase of new equipment. Annual payments are required over five years at a fixed interest rate of 10% p.a. How much is each annual payment?

A. $27 398.18
B. $20 000.00
C. $26 379.75
D. $24 444.12

37.

Five years ago, you entered into a loan agreement to borrow $100 000. The loan was to be paid off over 20 years through equal monthly instalments. If the interest rate was fixed at 12% p.a. for the entire loan term, how much do you pay per month?

A. $949
B. $1066
C. $1101
D. $1223

38.

John has just been employed by a prestigious firm, drawing an annual salary of $300 000, paid at the end of each year. He plans to work for five years before retiring. He buys a new luxury home with mortgage repayments of $5000 per month for the next 20 years (payable at the end of each month), and donates $10 000 per annum forever to his favourite charity. What annual amount, in present value terms, can John withdraw for the first five years of his retirement from the remainder of his savings? Assume an annual interest rate of 6% p.a.

A. $93 926
B. $246 819
C. $94 754
D. $112 754

39.

Kristy has to make rental payments of $1000 at the start of every month, throughout the four-year duration of her university course. Her university fees are $4000 to be paid at the start of each year. She earns $1500 per month (paid at the end of each month) from a part-time job. Assume an interest rate of 8% p.a. and that she keeps the part-time job for the next four years. How much money, in present value terms, can she withdraw each month for the next four years?

A. $144
B. $126
C. $55
D. $177

40.

Matthew earns $10 000 per month for the next 25 years, after which he retires. During the first five years of retirement, he withdraws $6000 at the start of each month, after which he dies. His son, Sean, inherits the remainder of Matthew's savings. It is further stipulated in Matthew's will that Sean will be paid the money in equal payments at the start of every month, for the next 20 years. Given a fixed interest rate of 9% p.a., calculate the amount of the monthly payments that Sean receives.

A. $98 250
B. $97 340
C. $98 270
D. $97 519

41.

Joe has to pay $50 000 in 1.5 years' time. If the interest rate is 15% p.a., compounded continuously, how much does she owe in present value terms?

A. $46 387
B. $49 077
C. $39 926
D. $37 041

42.

If you have a choice to earn simple interest on $20 000 for three years at 9% or annually compounding interest at 8.5% for three years which one will pay more interest and by how much?

A. Simple interest by $50.00
B. Compound interest by $122.97
C. Compound interest by $145.78
D. Simple interest by $150.00

43.

Your parents give you $120 per week for living expenses while you are doing a three-year degree in finance. If the interest rate is 6.5% per annum, what is this cash flow worth when you start your degree?

A. $15 125
B. $16 998
C. $26 026
D. $27 330

44.

What is the difference between daily and monthly compounding for a nominal interest rate of 7% per annum?

A. 0.06%
B. 0.04%
C. 0.02%
D. 0.01%

45.

The term _____ is used to describe the ‘rate of return' when the financial contract is in the form of debt.

_____

46.

An _____ interest rate is one where the frequency of payment does not match the time period specified by the interest rate.

_____

47.

Continuous interest rates are an example of where the future sum grows _____.

_____

48.

A principle-and-interest loan is a common example of an _____ annuity.

_____

49.

The _____ interest rate is an interest rate calculated after taking out the effects of inflation.

_____

50.

The annuity where the cash flows continue forever is called a _____.

_____

51.

An individual is offered the sum of $100 000 to be received after 5 years. If the relevant interest rate is 8% p.a., compounding annually, then the present value of this promised sum is $68 058.32.

True False

52.

The distinguishing feature of an annuity due is that the time period between the payment of each successive cash flow differs to the frequency with which the interest compounds.

True False

53.

In an interest-only loan, the principle reduces by a small amount at first, and more rapidly towards the end of the loan.

True False

54.

An individual borrowed $100 000 at a fixed interest rate of 12% p.a. for the entire loan term of 20 years. If the loan is to be repaid through equal monthly instalments, then the regular repayment to the nearest dollar is $1101.

True False

55.

A lender offers a nominal interest rate on a loan of 6% p.a. compounding quarterly. This corresponds to an effective interest rate of 6.136%.

True False

56.

The nominal interest rate is difference between the inflation rate and the real rate of interest.

True False

Chapter 03 Testbank Key

1.

A financial contract is:

A. a piece of advice provided by financial planners.
B. an agreement that involves only book entries and does not result in any cash flows.
C. an arrangement, agreement or investment that produces cash flows.
D. an agreement that results in a profit for the businesses concerned.

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.02 Fundamental concepts of financial mathematics

2.

The calculation that expresses the ratio of net cash inflows to net cash outflows produced by a financial contract is known as:

A. net present value.
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C. internal rate of return.
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3.

The rate of return can be shown as:

A.

B.

C.

D.

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5.

A method of calculating interest in which, during the entire term of the loan, interest is computed on the original sum borrowed is the:

A. present value method.
B. simple interest method.
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Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.03 Simple interest

6.

The amount that corresponds to today's value of a promised future sum can be shown as:

A.

B.

C.

D.

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A process by which, through the operation of interest, a present sum becomes a greater sum in the future is:

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Section: 3.04 Compound interest

8.

The interest rate where interest is charged at the same frequency as the quoted interest rate is the:

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B. real interest rate.
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D. effective interest rate.

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Est Time: < 1 minute
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Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

9.

The value, as at the date of the final cash flow promised in a financial contract, that is equivalent to the stream of promised cash flows is the:

A. present value of a contract.
B. future value of a contract.
C. terminal value of a contract.
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AACSB: Analytic
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Difficulty: Easy
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Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.02 Value, as at any date, contracts involving multiple cash flows
Section: 3.05 Valuation of contracts with multiple cash flows

10.

An annuity in which the first cash flow is to occur immediately is known as a/an:

A. ordinary annuity.
B. ordinary perpetuity.
C. annuity due.
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Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

11.

An annuity in which the first cash flow is to occur after a time period that exceeds the time period between each subsequent cash flow is known as a/an:

A. deferred annuity.
B. growth annuity.
C. ordinary annuity.
D. annuity due.

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Difficulty: Easy
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Est Time: < 1 minute
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You have $10 000 to invest. If you invest it at 11.2% p.a. for six months, then invest the initial $10 000 together with any interest for a further 12 months at 12.7% p.a., what will be the value of your investment at the end of the 18-month period?

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$11 901.12

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Section: 3.04 Compound interest

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Section: 3.04 Compound interest

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What will your investment be worth in 10 years if you invest $15 000 at 12.5% p.a., payable at maturity, and your tax rate (paid annually) is 30 cents in the dollar?

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B. $48 710
C. $32 473
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Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

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Section: 3.04 Compound interest

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C. $1259.71
D. $1439.16

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Section: 3.04 Compound interest

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C. $1301.15
D. $1483.09

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Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

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B. $1235.53
C. $1183.53
D. $1126.53

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Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.06 Annuities

21.

You want to deposit amounts in the bank at the end of 2011, 2012, 2013 and 2014, so that you have $1259.71 in your account on 1 January 2015. Calculate how large each of your payments would need to be if the bank compounds quarterly at 8% p.a.

A. $279.56
B. $259.83
C. $284.19
D. $314.93

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.06 Annuities

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Assume that you will require $1000 in four years' time. Suppose that you can afford to deposit only $186.29 at the end of each year, the first deposit to be made in one year's time. What interest rate would you require to reach your target if the bank compounds annually?

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B. 18.5% p.a.
C. 20% p.a.
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Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
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Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
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You have a goal to raise $1000 in four years' time. If your mother gives you $400 at the end of the first year, you make six deposits of equal amounts every six months thereafter, and all the money is deposited in a bank, which pays 8% p.a., compounded semi-annually, how large must each of the six payments be for you to reach your target?

A. $74.46
B. $65.55
C. $82.74
D. $77.26

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Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.06 Annuities

24.

Calculate the effective annual interest rate corresponding to 12% p.a., compounded quarterly.

A. 11.9%
B. 12.55%
C. 12.45%
D. 12.71%

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

25.

What is the present value of $500 payable in 10 years' time if the interest rate is 6% p.a.?

A. $290.50
B. $335.60
C. $895.40
D. $279.20

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

26.

What is the present value of the following cash flow stream, discounted at 7% p.a.: Year 1, $100; Year 2, $400; Years 3 through 20, $300?

A. $2859.20
B. $3563.40
C. $3078.63
D. $2782.40

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.02 Value, as at any date, contracts involving multiple cash flows
Section: 3.05 Valuation of contracts with multiple cash flows

27.

What is the implied interest rate if you borrow $85 000 and promise to pay back $201 229 at the end of 10 years?

A. 9% p.a.
B. 18% p.a.
C. 11% p.a.
D. 13% p.a.

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

28.

Karen has borrowed $12 000 in student loans at an annual interest rate of 9%. If she repays $1500 per annum, how long (to the nearest year) will it take to repay the loan?

A. 10 years
B. 15 years
C. 12 years
D. 17 years

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.07 Principal-and-interest loan contracts

29.

If the nominal interest rate is 12% p.a. and the inflation rate is expected to be 5% p.a., what is the real rate of interest?

A. 106.7%
B. 6.7%
C. 7%
D. 8.2%

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

30.

If a term deposit offers an interest rate of 10% p.a., compounding continuously, how much will an initial investment of $50 000 be worth after one year?

A. $55 258
B. $135 914
C. $62 519
D. $98 352

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

31.

What is the effective annual interest rate corresponding to a nominal interest rate of 10% p.a., compounding continuously?

A. 10.5%
B. 10.9%
C. 12.5%
D. 13%

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

32.

Calculate the value of an investment at the end of its fourth year if the initial investment is $10 000 and it produces the following annual rates of return: Year 1, gain 15%; Year 2, gain 17%; Year 3, loss 5%; Year 4, gain 4%.

A. $14 295
B. $13 100
C. $13 293
D. $11 957

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

33.

Calculate the present value of the following cash flows assuming they occur at the end of each year and the interest rate is 12% p.a.: Year 0, ($12 000); Year 1, $5670; Year 2, $11 250.

A. $2030.93
B. $26 030.93
C. $28 920
D. ($1163.19)

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.02 Value, as at any date, contracts involving multiple cash flows
Section: 3.05 Valuation of contracts with multiple cash flows

34.

Calculate the present value of a government security that promises to pay $100 p.a. forever, assuming an interest rate of 11% per annum.

A. $90
B. $1100
C. $909
D. Infinity.

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.06 Annuities

35.

Debt Ltd borrowed $100 000 from its local bank to finance the purchase of new equipment. Annual payments are required over five years at a fixed interest rate of 10% p.a. How much is each annual payment?

A. $27 398.18
B. $20 000.00
C. $26 379.75
D. $24 444.12

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.05 Distinguish between simple and general annuities and make basic calculations involving general annuities
Section: 3.06 Annuities

36.

Debt Ltd borrowed $100 000 from its local bank to finance the purchase of new equipment. Annual payments are required over five years at a fixed interest rate of 10% p.a. How much is each annual payment?

A. $27 398.18
B. $20 000.00
C. $26 379.75
D. $24 444.12

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.07 Principal-and-interest loan contracts

37.

Five years ago, you entered into a loan agreement to borrow $100 000. The loan was to be paid off over 20 years through equal monthly instalments. If the interest rate was fixed at 12% p.a. for the entire loan term, how much do you pay per month?

A. $949
B. $1066
C. $1101
D. $1223

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.04 Apply your knowledge of annuities to solve a range of problems, including problems involving principal-and-interest loan contracts
Section: 3.07 Principal-and-interest loan contracts

38.

John has just been employed by a prestigious firm, drawing an annual salary of $300 000, paid at the end of each year. He plans to work for five years before retiring. He buys a new luxury home with mortgage repayments of $5000 per month for the next 20 years (payable at the end of each month), and donates $10 000 per annum forever to his favourite charity. What annual amount, in present value terms, can John withdraw for the first five years of his retirement from the remainder of his savings? Assume an annual interest rate of 6% p.a.

A. $93 926
B. $246 819
C. $94 754
D. $112 754

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 3-5 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.08 General annuities

39.

Kristy has to make rental payments of $1000 at the start of every month, throughout the four-year duration of her university course. Her university fees are $4000 to be paid at the start of each year. She earns $1500 per month (paid at the end of each month) from a part-time job. Assume an interest rate of 8% p.a. and that she keeps the part-time job for the next four years. How much money, in present value terms, can she withdraw each month for the next four years?

A. $144
B. $126
C. $55
D. $177

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 3-5 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

40.

Matthew earns $10 000 per month for the next 25 years, after which he retires. During the first five years of retirement, he withdraws $6000 at the start of each month, after which he dies. His son, Sean, inherits the remainder of Matthew's savings. It is further stipulated in Matthew's will that Sean will be paid the money in equal payments at the start of every month, for the next 20 years. Given a fixed interest rate of 9% p.a., calculate the amount of the monthly payments that Sean receives.

A. $98 250
B. $97 340
C. $98 270
D. $97 519

AACSB: Analytic
Blooms: Application
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: 3-5 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

41.

Joe has to pay $50 000 in 1.5 years' time. If the interest rate is 15% p.a., compounded continuously, how much does she owe in present value terms?

A. $46 387
B. $49 077
C. $39 926
D. $37 041

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

42.

If you have a choice to earn simple interest on $20 000 for three years at 9% or annually compounding interest at 8.5% for three years which one will pay more interest and by how much?

A. Simple interest by $50.00
B. Compound interest by $122.97
C. Compound interest by $145.78
D. Simple interest by $150.00

AACSB: Analytic
Blooms: Knowledge
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.03 Simple interest

43.

Your parents give you $120 per week for living expenses while you are doing a three-year degree in finance. If the interest rate is 6.5% per annum, what is this cash flow worth when you start your degree?

A. $15 125
B. $16 998
C. $26 026
D. $27 330

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.03 Simple interest

44.

What is the difference between daily and monthly compounding for a nominal interest rate of 7% per annum?

A. 0.06%
B. 0.04%
C. 0.02%
D. 0.01%

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

45.

The term _____ is used to describe the ‘rate of return' when the financial contract is in the form of debt.

interest rate

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.02 Fundamental concepts of financial mathematics

46.

An _____ interest rate is one where the frequency of payment does not match the time period specified by the interest rate.

effective

AACSB: Analytic
Blooms: Knowledge
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

47.

Continuous interest rates are an example of where the future sum grows _____.

exponentially

AACSB: Analytic
Blooms: Knowledge
Difficulty: Hard
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

48.

A principle-and-interest loan is a common example of an _____ annuity.

ordinary

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

49.

The _____ interest rate is an interest rate calculated after taking out the effects of inflation.

real

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

50.

The annuity where the cash flows continue forever is called a _____.

perpetuity

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

51.

An individual is offered the sum of $100 000 to be received after 5 years. If the relevant interest rate is 8% p.a., compounding annually, then the present value of this promised sum is $68 058.32.

TRUE

AACSB: Analytic
Blooms: Application
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

52.

The distinguishing feature of an annuity due is that the time period between the payment of each successive cash flow differs to the frequency with which the interest compounds.

FALSE

AACSB: Analytic
Blooms: Knowledge
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

53.

In an interest-only loan, the principle reduces by a small amount at first, and more rapidly towards the end of the loan.

FALSE

AACSB: Analytic
Blooms: Knowledge
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

54.

An individual borrowed $100 000 at a fixed interest rate of 12% p.a. for the entire loan term of 20 years. If the loan is to be repaid through equal monthly instalments, then the regular repayment to the nearest dollar is $1101.

TRUE

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.03 Distinguish between different types of annuity and calculate their present value and future value
Section: 3.06 Annuities

55.

A lender offers a nominal interest rate on a loan of 6% p.a. compounding quarterly. This corresponds to an effective interest rate of 6.136%.

TRUE

AACSB: Analytic
Blooms: Application
Difficulty: Medium
EQUIS: Apply knowledge
Est Time: 1-3 minutes
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

56.

The nominal interest rate is difference between the inflation rate and the real rate of interest.

FALSE

AACSB: Analytic
Blooms: Knowledge
Difficulty: Easy
EQUIS: Apply knowledge
Est Time: < 1 minute
Graduate Attributes: Problem solving
Learning Objective: 3.01 Understand and solve problems involving simple interest and compound interest, including accumulating, discounting and making comparisons using the effective interest rate
Section: 3.04 Compound interest

Chapter 03 Testbank Summary

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