Multiple-choice section – choose the correct answer

Question 1 [13.2]

The interest accrued on a loan of $5700 at 6% p.a. compounded annually over 2 years, is closest to:

A $620 B $636 C $705 D $6836

Question 2 [13.4]

A car bought for $23 400 depreciates at a rate of 15% p.a. Assuming reducing balance depreciation, in 5 years’ time, the car will be worth:

A $23 444(0.85)5 B  C $23 444(1.15)5 D 

Question 3 [13.1]

$400 is invested for 5 years at 3.2% p.a. The amount of simple interest earned is:

A $464 B $200 C $64 D $1280

Question 4 [13.4]

An amount of money invested for 4 years at 2.5% p.a. simple interest earns $12.50 in interest. The principal amount invested is:

A $12.50 B $125 C $1000 D $1250

Question 5 [13.3]

$10 000 is invested at 6.4% p.a. compounded annually. The amount in the investment in 10 years is:

A $1860 B $13 042 C $16 400 D $18 596

Question 6 [13.6]

Tessa borrows $35 000. The interest on the loan is compounded half-yearly at 5.5% p.a. for 15 years. What total amount will he pay off at the end of the loan?

A $78 981.06 B $68 076.37 C $1 436 741.67 D $71 279.12

Question 7 [13.3]

Shaquille invests $30 000 for 11 years and makes a final amount of $75 350. What is the rate of interest, if compounded annually?

A 8.2% p.a. B 8.73% p.a. C 10.08% p.a. D 23.04% p.a.

Question 8 [13.4]

The value of the effective interest rate, if $7000 is invested and *I1* = $450, is:

A 1% B 0.064% C 6.4% D 0.06%

Question 9 [13.4]

A bank loan has an interest rate of 17% p.a. compounded daily. What is the nominal rate?

A 0.0017% B 0.017% C 0.17% D 17%

Multiple-choice results: \_\_\_ / 9

Short answer section

Question 10 10 marks

Use words from the list below to complete the following sentences.

principal appreciation straight-line depreciation depreciation

adjusted value compound interest total depreciation depreciation value

written-down value interest

(a) Simple interest depends on the principal, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ rate per annum and the time in years.

(b) The original amount of money loaned or invested is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(c) Interest that is calculated on the principal and interest from the previous time period is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(d) The value of an item after it depreciates is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(e) The amount that an item depreciates is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Depreciation accumulated over a number of years is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

(f) Increase in cost or value is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and decrease in cost or value is called \_\_\_\_\_\_\_\_\_\_\_\_\_.

(g) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ applies when items lose a constant amount of value each year.

Question 11 4 marks [13.1]

What rate of simple interest will grow an investment of $6000 to a total amount of $7140 in 5 years? Give an exact percentage.

Question 12 4 marks [13.2]

Annie invests $3000 at 6.2% p.a. compounded annually. Calculate, to the nearest cent, the total value of the loan after 5 years.

Question 13 4 marks [13.2]

Marianne invested $55 000 at 6.2% p.a. compounded monthly. Calculate to the nearest dollar, the total value of the loan after 10 years.

Question 14 4 marks [13.6]

Kun’s restaurant had takings of $524 000 in the first year and $930 000 in the 10th year. What is the average annual percentage rate at which his business has grown?

Question 15 4 marks [13.3]

A loan has an interest rate of 15% compounded monthly. Find the effective interest rate as a percentage correct to 2 decimal places.

Question 16 4 marks [13.6]

The initial number of members at a soccer club was 14 276. How many members will there be left after 5 years if the number of members decreases by 8.5% per year?

Question 17 4 marks [13.3]

A car bought for $28 500 depreciates at a rate of 2.9% p.a. Find, correct to the nearest dollar, the written-down value of the car, after 4 years, assuming reducing balance depreciation

Short answer total:\_\_\_\_\_ /38

Extended answer section

Question 18 5 marks [13.3]

An art collector buys a rare piece of sculpture for $800.

(a) If the rate of inflation is 4%, find the equivalent value of the sculpture after 4 years. Give your answer correct to the nearest dollar.

(b) The collector then sells the sculpture it for $1000. Find the effective profit. (The profit after the effect of inflation on the original value has been calculated).

Question 19 8 marks [13.3]

An antique sofa was purchased for $2400. It was then immediately restored to its original condition at a cost of $1800.

(a) What was the full initial cost of the sofa?

Over the next 5 years the inflation rates were 1.8%, 2.2%, 2.5%, 2.8% and 3% respectively.

(b) Calculate the value, correct to the nearest cent, of the sofa, over the 5 years after purchase, based on the inflation rates.

(c) The sofa was sold for $5500 at the end of the 5 years. Calculate the effective profit.

(d) Find the effective profit percentage, to the nearest whole percentage, based on the original initial cost found in part (a).

Short answer total: \_\_\_ / 13

TOTAL test results: \_\_\_ / 60