EXAM-STYLE CLASS TEST

MARKS	DURATION	QUESTIONS
37	1 hour	3

Name: ..... Class: .....

Date: .....

MARK ____ / 37

INSTRUCTIONS AND INFORMATION

1. Answer **ALL** the questions in this question paper.
2. Answer QUESTION 1 by **circling** the letter (A–D) in the answer grid at the end of that section.
3. Show **ALL** calculations clearly.
4. Show all units where applicable.
5. Number the answers correctly according to the numbering system used in this question paper.
6. A non-programmable calculator may be used, unless stated otherwise.
7. Write neatly and legibly.

QUESTION 1 [10 MARKS]

Four options are given as possible answers to the following questions. Choose the correct answer and circle the letter (A–D) in the grid at the end of this section. If you want to change your choice, put a cross through the wrong letter and circle your new choice.

1.1 The FUTURE VALUE annuity formula is ... (1)

A) $\frac{x}{i}$

B) $\frac{x[(1+i)^n - 1]}{i}$

C) $\frac{x[1-(1+i)^{-n}]}{i}$

D) $x(1+i)^n$

1.2 The PRESENT VALUE annuity formula is the one to use for ... (1)

A) a simple interest calculation

B) a single lump-sum investment

C) a savings plan with monthly deposits

D) a loan repaid in equal instalments

1.3 A loan is repaid MONTHLY over 20 years at 11% p.a. compounded monthly. Then ... (1)

A) $n = 240$ and $i = 0{,}11 \div 12$

B) $n = 20$ and $i = 0{,}11 \div 12$

C) $n = 240$ and $i = 0{,}11$

D) $n = 20$ and $i = 0{,}11$

1.4 A tractor bought for R980 000 depreciates at 9,2% p.a. on the REDUCING BALANCE. Its book value after 7 years is ... (1)

A) R348 880

B) R498 686

C) R889 840

D) R666 146

1.5 A fixed amount is deposited at the END of each month for 60 months at 8,35% p.a. compounded monthly, reaching R450 000. The monthly deposit is about ... (1)

A) R76 172

B) R9 200

C) R7 500

D) R6 069

1.6 The OUTSTANDING BALANCE on a loan is found by ... (1)

A) taking the present value of the payments still to be made

B) taking the future value of the payments already made

C) multiplying the instalment by the number of payments left

D) subtracting the payments already made from the amount borrowed

1.7 The total INTEREST paid on a loan equals ... (1)

A) the amount borrowed multiplied by the rate

B) the instalment multiplied by the rate

C) the total of all the instalments minus the amount borrowed

D) the outstanding balance

1.8 A loan of R1 050 000 at 12% p.a. compounded monthly over 25 years has a monthly instalment of about ... (1)

A) R11 561

B) R10 500

C) R11 059

D) R3 500

1.9 If the FIRST repayment is made 6 months after a loan is granted, the loan amount must first be ... (1)

A) divided by the number of deferred months

B) left exactly as it is

C) reduced by the deferred months' interest

D) grown by compound interest over those deferred months

1.10 R12 000 grows to R13 459 in 24 months at $m\%$ p.a. compounded QUARTERLY. Then m is about ... (1)

A) 12,16%

B) 5,78%

C) 1,44%

D) 5,90%

ANSWER GRID — CIRCLE YOUR ANSWERS FOR QUESTION 1

1.1	A	B	C	D
1.2	A	B	C	D
1.3	A	B	C	D
1.4	A	B	C	D
1.5	A	B	C	D
1.6	A	B	C	D
1.7	A	B	C	D
1.8	A	B	C	D
1.9	A	B	C	D
1.10	A	B	C	D

QUESTION 2 [14 MARKS]

Thabo wants to save R$450\,000$ as a deposit for a house. He deposits a fixed amount at the END of every month into an account earning $8{,}35\%$ p.a., compounded monthly. He makes 60 deposits.

2.1 Write down the values of i and n, and explain why i is not simply $0{,}0835$. **(3)**

2.2 Calculate the monthly deposit. **(4)**

2.3 Thabo buys a house for R$1\,500\,000$ using the R$450\,000$ as a deposit. Write down the value of the loan, and the percentage of the purchase price that he still owes. **(3)**

2.4 The loan is taken at 12% p.a. compounded monthly over 25 years, and the monthly instalment is R$11\,058{,}85$. Calculate the balance outstanding after 21 years. **(4)**

QUESTION 3 [13 MARKS]

Thabo plans to buy a car costing R250 000. He pays a deposit of 15% and takes a loan for the balance at 13% p.a., compounded monthly.

3.1 Calculate the deposit Thabo pays, and hence the value of the loan. (3)

3.2 The FIRST repayment is made 6 months after the loan is granted, and the loan is repaid over 6 years from the date it was granted. Calculate the amount owing ONE MONTH BEFORE the first repayment, that is, after 5 months. (3)

3.3 Hence calculate the monthly instalment. (5)

3.4 Explain why deferring the first repayment makes the loan more expensive. (2)

TOTAL: 37 marks

This question paper consists of 3 questions.

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