



2018 – 2019

S.3 Mathematics Uniform Test 3

Chapter 3: Percentages (II)

Question-Answer Book

Date: 25 – 10 – 2018

Duration: 40 mins

This paper must be answered in English

Instructions :

1. Write your name, class and class number in the spaces provided on this cover.
2. Answer ALL questions in this paper. Write your answers in the spaces provided in this Question-Answer Book.
3. Write your answers with black or blue ball-pens, and draw graphs or figures with HB pencils.
4. Unless otherwise specified, all working must be clearly shown.
5. **Unless otherwise specified, numerical answers should be either exact or correct to 3 significant figures.**
6. The diagrams in this paper are not necessarily drawn to scale.

Fill in the best answer in each of the following questions.

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Section B: Conventional Questions (26 marks)

Show both your steps and answers clearly in the spaces provided.

7. A restaurant served 150 customers yesterday. Find the percentage change in the number of customers if the restaurant serves 120 customers today. (2 marks)
8. A metal rod is heated up and its length increases by 5% to 42 cm. Find its original length. (3 marks)
9. Last month, there were 150 employees in a company and 70% of them were male. This month, the number of male employees decreases by 20% and the number of female employees increases by 60%. Find the total number of employees in this month. (4 marks)

10. There are 8 000 citizens in a city now. If the population increases at a constant rate of 5% per year, find the population 6 years later. (Give your answer correct to the nearest hundred.) (3 marks)
11. A photocopier costs \$8 250 now. If its value decreases by 8% per quarter,
- (a) what is the decay factor? (1 mark)
 - (b) find its value 3 years later. (Give your answer correct to the nearest \$100.) (3 marks)
12. Anthony borrows \$7 000 from a bank at a simple interest rate a bank for 4 years. He will pay an amount of \$11 200. What is the annual interest rate? (4 marks)

13. Billy wants to deposit \$360 000 into a bank for 2 years. The bank offers 2 plans to Billy:

Plan A: The money is deposited at a simple interest rate of 8.4% p.a.

Plan B: The money is deposited at 8% p.a. compounded half-yearly.

- (a) Find the interest that he will get if he choose (5 marks)
- (i) Plan A
 - (ii) Plan B,
- (b) Which plan should he choose in order to earn more interest? Explain your answer. (1 mark)
- (Give your answers correct to the nearest \$ if necessary.)

Section C: Bonus Question (Optional)

Show both your steps and answers clearly in the spaces provided.

14. Mr. Wong made a loan of \$200 000 from a bank at the first day of a month. At the end of each month, the bank would impose an interest rate of 3% p.a. on the remaining amount and compounded monthly. He returned \$50 000 in the first 2 months. How much should Mr. Wong pay if he decided to return the remaining amount to the bank in the 3rd month? (3 marks)