



UNIVERSITY COLLEGE TATI (UC TATI)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE	: DTG 1203
COURSE	: BUSINESS MATHEMATICS
SEMESTER/SESSION	: 1 - 2023/2024
DURATION	: 3 HOURS

Instructions:

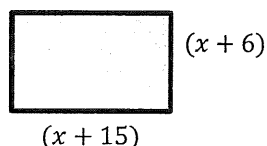
1. This booklet contains 5 questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hand and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 5 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) A Mathematics test has 30 questions which is 6 of the 30 questions are based on chapter 5. Find the ratio of questions from chapter 5 to the other questions on the test. (4 marks)
- b) A chef started with 50kg sugar and used $38\frac{3}{4}$ kg for a catering function. Find how many kilograms sugar were left. (4 marks)
- c) Emily reported sales of RM23,583,000 for the third quarter and RM38,792,000 for the fourth quarter. Find the percentage of increase profit. (4 marks)
- d) The diagram below shows a piece of land.



The land has a length of $(x + 15)$ m and a width of $(x + 6)$ m. If the area of the land is 442m^2 , find the value of x . (8 marks)

QUESTION 2

- a) Find the trade discount or net price as indicated. Round up to the nearest cent.

List Price	Single Discount Rate	Trade Discount	Complement	Net Price
RM48	10%	(i)		(ii)
RM100	12%	(iii)		(iv)
RM425	15%	(v)		(vi)
RM24.62		RM5.93		(vii)
RM0.89		RM0.12		(viii)
RM1,263	12%	(ix)		(x)
RM27.50	3%	(xi)		(xii)

- b) Manufacturer A lists an aquarium for RM58.95 with a trade discount of RM5.90. Manufacturer B lists the same aquarium for RM60 with a trade discount of RM9.45. Find the rate of trade discount for both manufacturer and which is the better deal. (6 marks)
- c) The lists price of slack is RM22, and the list price of jumpers is RM37. If Petit's Clothing Store orders 30 pairs of slacks and 40 jumpers at a discount rate of 11%. Find the trade discount and the net price. (8 marks)

QUESTION 3

- a) An invoice of RM10,000 and dated 18 April 2012 offered 25% trade discount and cash discount terms of 9/10, n/30. Compute
- i) the trade discount offered (1 mark)
 - ii) the cash discount offered, (1 mark)
 - iii) the net payment if the invoice is paid on 28 April 2012. (2 marks)
- b) Coach of JDT sold Terengganu FC (TFC) a leather goods for RM340800 with the terms of 3/10, n/30. TFC decided to make a partial payment of RM200,000 within 10 days. Compute the amount outstanding if TFC pays within 10 days. (6 marks)
- c) Kembang Nursery has an invoice for RM3,814 dated May 8, with the terms of 3/10, 2/15, n/30. The invoice also has a 1% penalty per month for payment after 30 days.
- i) Compute the amount due if paid on May 12
 - ii) Compute the amount due if paid on May 25
 - iii) Compute the amount due if paid on June 7 (6 marks)
- d) Curves Fitness received an invoice for RM3,097.15 dated September 8 with terms the of 3/15 ROG. The goods arrived on September 12.
- i) Show the due date in order to get the cash discount. (2 marks)
 - ii) Compute the amount to be paid. (2 marks)

QUESTION 4

- a) Compute the percent of markup based on cost for a ceramic chair that costs RM220 and sells at RM599. (2 marks)
- b) Asyraff buys a chair at RM 50 and the markup is 20% of the selling price.
- i) Compute the selling price
 - ii) Compute the markup (4 marks)
- c) A book-shelf sells at RM39. The markup rate is 60% of the cost. Compute the cost and the markup of the book-shelf. (4 marks)
- d) Muhammad Enterprise plans to mark up a book sticker RM3.50 over cost. This will be a 50% markup based on cost. Compute the cost and selling price of the book sticker and the rate of the selling price. (5 marks)
- e) A water gun machine costs RM127.59 and the owner mark it up 23% of the selling price. Compute the selling price and markup for the machine. (5 marks)

QUESTION 5

- a) Compute the rate of markup based on cost and based on selling price of a washing machine that costs RM12,500 and sells at RM18,900 (5 marks)
- b) Aisya Bridal paid RM189 for fern stand and marked it up 60% based on cost. Aisya Bridal included it in a special promotional markdown of 30%. The stand was damaged during the sale and was marked down an additional 40%. Compute the final selling price of the stand. (6 marks)
- c) Kedai Harian buys bananas for RM0.27 per kilogram. On average 4% of the bananas must be discarded. Compute the selling price per kilogram needed to obtain a 160% markup on cost for 2000 kilogram. (6 marks)
- d) Klinik Pergigian Hannah purchases teeth cleaner at RM0.84 and sells it RM2.39. Compute the rate of markup based on selling price. (3 marks)

----- End of question -----

FORMULA:

Trade discount = list price – net price

Or

Net price = list price – trade discount

Net price, NP = $L(1 - r)$

where,

L = list price

r = trade discount

For chain discounts r_1, r_2, r_3 ,

net price, NP = $L(1 - r_1)(1 - r_2)(1 - r_3)$

Single discount equivalent, r, for a chain discount of r_1, r_2 , and r_3 is

$r = 1 - (1 - r_1)(1 - r_2)(1 - r_3)$

Borrowing to take advantage of the cash discount:

Amount saved = cash discount – interest

Interest = (Invoice amount – cash discount) $\times$ r $\times$ credit period

Partial payment of invoice:

Amount paid = credit given $\times$ (1 – discount rate)

Amount outstanding = Invoice amount – credit given

(a) Mark-up per cent based on selling price

$$\%Mr = (M/R) \times 100\%$$

(b) Mark-up per cent based on cost price

$$\%Mc = (M/C) \times 100\%$$

Mark-up per cent based on retail can be converted to mark-up per cent based on cost and vice versa as follows.

Mark-up per cent based on selling price

$$R = C + M$$

$$1 + \%Mc = 100\% + \%Mc$$

Mark-up per cent based on retail price =

$$\%Mr = \%Mc / (1 + \%Mc)$$

Mark-up per cent based on cost price

$$R = C + M$$

$$100\% = (1 - \%Mr) + \%Mr$$

Mark-up per cent based on cost price

$$\%Mc = \%Mr / (1 - \%Mr)$$

