UNIVERSITI TEKNOLOGI MARA
TEST 2

DEC 2019
1 HOUR 15 MINUTES

NAME: _____   GROUP: _____

LECTURER NAME: _____

QUESTION 1

a) 50 sets of shoes were sold at RM130 each. If a gross profit of 15% based on cost was made, find the total cost price of the shoes.

(3 marks)

b) Demarathon made a net profit of 25% based on selling price by selling 60 sets of shoes. The shoes were bought at RM7800. The operating expenses were 10% of the cost. For each set of shoes, find

    i.   the selling price

(4 marks)

    ii.   the breakeven price

(2 marks)

    iii. the amount of profit or loss if each set of shoes was sold for RM100

(2 marks)

    iv. the maximum percentage of mark down that can be given without any loss.

(4 marks)

QUESTION 2

a) The cash price of a motorcycle Honda RS is RM11500. Megat purchased the motorcycle by paying 10% down payment. The balance has to be repaid by making monthly installment for 3 years. If the interest charged was RM1552.80 based on original balance, find the interest rate.

(5 marks)

b) Amanda purchased a RM350000 car on an installment payment. The purchase was settled by a down payment of RM10000 and the balance was repaid with 108 monthly installment. If the interest charged is 4% per annum on the reducing balance, find: (by using the constant ratio method)

    i.   The total interest charged

(4 marks)

    ii. The monthly payment

(2 marks)

    iii. The outstanding balance if Amanda decided to settle the loan immediately after the 90th payment by using the Rule of 78

(4 marks)

QUESTION 3

a) High Speed Company buys a machine at RM175 000. The machine has a life span of 15 years with scrap value of RM13 000. Calculate the book value at the end of seven years using the straight-line method.

(5 marks)

b) A car costing RM89 000 depreciates at rate of **r** %. Its salvage value is RM 15 000 at end of ten years. Using reducing balance method, find **r** and the accumulated depreciation at the end of four years.

(5 marks)

END OF QUESTION PAPER

LIST OF FORMULA

a) $SP = C + M$	d) $r = 1 - \sqrt[n]{\dfrac{S}{C}}$
b) $GP = OE + NP$	e) $OPB = Rk - I\left(\dfrac{k(k+1)}{n(n+1)}\right)$
c) $I = \dfrac{Br(n+1)}{2M}$	f) $AC_n = C - C(1-r)^n$
d) $BV_n = C(1-r)^n$	

MAT 112 TEST 2 DEC 2019.

1. a)   SP = RM 130 each $n = 50$ sets.

     GP = 0.15C

     SP = C + M

     SP = C + 0.15C

     SP = 1.15 C

     $C = \dfrac{SP}{1.15} = \dfrac{130}{1.15} = RM\ 113.0434783$ ③

     ∴ Total Cost = RM 5,652.17

b)   NP = 0.25 SP $n = 60$ pairs of shoes.

     Total Cost = RM 7800   i.e.,   C = RM 130

     OE = 0.1 C

   i)   SP = C + OE + NP

      SP = C + 0.1C + 0.25 SP

      $SP = \dfrac{1.1 C}{0.75}$

        $= \dfrac{1.1(130)}{0.75} = RM\ 190.67$ ④

   ii)   BEP = C + OE

       = 1.1 C

       = 1.1 (130) = RM 143   ②

   iii)   Profit/Loss = Total Sales − Total BE   Profit/Loss (each)

             = (160 × 60) − (143 × 60)   = SP − BE

             = 6000 − 8580   = 160 − 143

             = − RM 2,580   = − RM 43 (Loss)

     ∴ Loss at RM 2,580.   ②

   iv) $\%\ MD_{max} = \dfrac{OSP - BEP}{OSP} \times 100\%$ or $\%\ MD_{max} = \%NP_{SP}$

           $= \dfrac{190.67 - 143}{190.67} \times 100\%$ $= 25\%.$

           $= 25\%.$ ④

2. a) $CP = RM\ 11,500$

   $DP = RM\ 1,150$ (10% of CP)

   $B = RM\ 10,350$

   $m = 12$ ⎫
   $t = 3$ ⎬ $n = 36$

   $I = RM\ 1552.80$ (original balance)

$$I = Prt$$
$$1,552.80 = 10,350 \times r \times 3$$ ⑤
$$r = 0.05 \ @\ 5\%$$

b) $CP = 350,000$

   $DP = 10,000$

   $B = 340,000$

   $n = 108$ ⎫
   $m = 12$ ⎬ $t = 9$

   $r = 0.04$ (reducing balance)

i) $I = \dfrac{Br(n+1)}{2m}$

$$= \frac{340,000\,(0.04)\,(108+1)}{2\,(12)}$$ ④

$$= RM\ 61,766.67$$

ii) $R = \dfrac{B + I}{n}$

$$= \frac{340,000 + 61,766.67}{108}$$ ②

$$= RM\ 3,720.06$$

iii) $k = 108 - 90 = 18$

$$OPB = Rk - I\left[\frac{k(k+1)}{n(n+1)}\right]$$

$$= 3720.06\,(18) - 61,766.67\left[\frac{18(19)}{108(109)}\right]$$ ④

$$= RM\ 65,166.67$$

3. a) $C = 175,000$

$n = 15$

$S = 13,000$

SL method.

$AD = \dfrac{C - S}{n} = \dfrac{175,000 - 13,000}{15} = RM\,10,800$ ⑤

$\therefore BV_7 = C - 7\,AD$

$= 175,000 - 7\,(10,800)$

$= RM\,99,400\,.$

b) $C = 89,000$

$S = 15,000$

$n = 10$

Reducing Balance Method.

$r = 1 - \sqrt[n]{\dfrac{S}{C}}$

$= 1 - \sqrt[10]{\dfrac{15,000}{89,000}}$

$= 0.163106634 \quad @ \quad 16.311\%$

$AcD_4 = C - C(1-r)^4$

$= 89,000 - 89,000\,(1 - 0.163106634)^4$ ⑤

$= RM\,\cancel{14,516.49} \quad 45,341.33$