MTH302 Midterm Paper 2010 solved - Business Mathematics and Statistics (A-01)

MTH302 Midterm Paper 2010 solved - Business Mathematics and Statistics (A-01)

MIDTERM EXAMINATION

Spring 2010

Shared by Black Mist

Solved by vuZs Team

Mehreen Humayun

www.vuzs.info (http://groups.google.com/group/vuZs)

Time: 60 min

M = Marks= 40

Question No: 1 (M - 1)

In which Trust Fund, the company does not deduct, but only contribute 1/11th of Basic Salary of the employee per month?

► Provident Fund

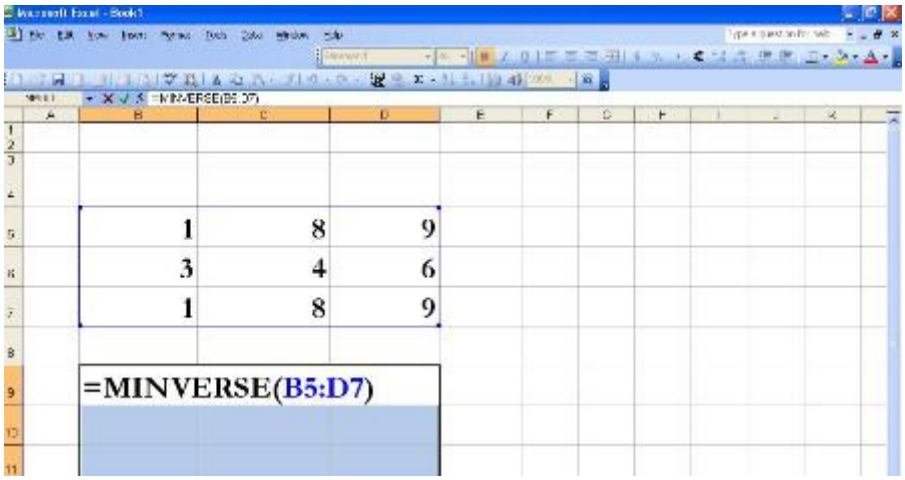
► **Gratuity Fund**

► Charity Fund

► None of the above

Gratuity Fund: According to local laws, a company can establish a Gratuity Trust Fund for the benefit of the employees. By law, 1/11th of Basic Salary per month is contributed by the company to the Gratuity Fund to the account of the employee. Thus there is a saving of 1/11th of basic salary on behalf of the employee in Gratuity Fund.

Question No: 2 (M - 1)



The answer of the above formula is

► None of the above.

► a number

► **a matrix**

► #NUM!

MINVERSE: Returns the inverse matrix for the matrix stored in an array.

Question No: 3 (M - 1)

If a profit ratio of A and B is 2 to 3, then A's share in profit will be

► **2/5**

► 2/3

► 3/2

► 3/5

Question No: 4 (M - 1)

After the merchant buys merchandise, it is sold at a higher price called the _____

► Sale price

► Revenue discount

► **Selling price**

► Cost price

Question No: 5 (M - 1)

A reduction of the amount due on an invoice is called a _____ . (http://www.vuzs.info)

► **Trade discount**

► Net discount

► Cash discount

► Unearned discount

Trade discount represents a reduction in list price in return for quantity purchases.

Question No: 6 (M - 1)

Total Provident Fund added to the employee's fund is ---------- of the basic salary.

► 1 / 11 th

► 2 / 11 th

► **9.09 %**

► 9.99%

Provident Fund 9.09 % of basic salary.

Question No: 7 (M - 1)

$$A=\begin{bmatrix}2 & 6\\ 3 & 4\end{bmatrix} \qquad B=\begin{bmatrix}1 & 9\\ 3 & 3\end{bmatrix}$$

, then AB is ----------

► $\begin{bmatrix}20 & 36\\ 25 & 30\end{bmatrix}$

► $\begin{bmatrix} 20 & 36 \\ 15 & 39 \end{bmatrix}$

► $\begin{bmatrix} 20 & 36 \\ 35 & 30 \end{bmatrix}$

► $\begin{bmatrix} 20 & 36 \\ 45 & 39 \end{bmatrix}$

Solution:

AB= 2×1+6x3 2×9+ 6×3

3×1+4x3 3×9+4×3

AB= 2+18 18+18

3+12 27+12

AB= 20 36

15 39

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 8 (M - 1)

$A = [1]$, then which statement is wrong about A?

► A is a column matrix.

► A is a row matrix.

► A is an identity matrix.

► **A is not a square matrix.**

Question No: 9 (M - 1)

If a speed of a car is changed from 25km/h to 40km/h then the percentage change in its speed is?

► 15%

► 50%

► 40%

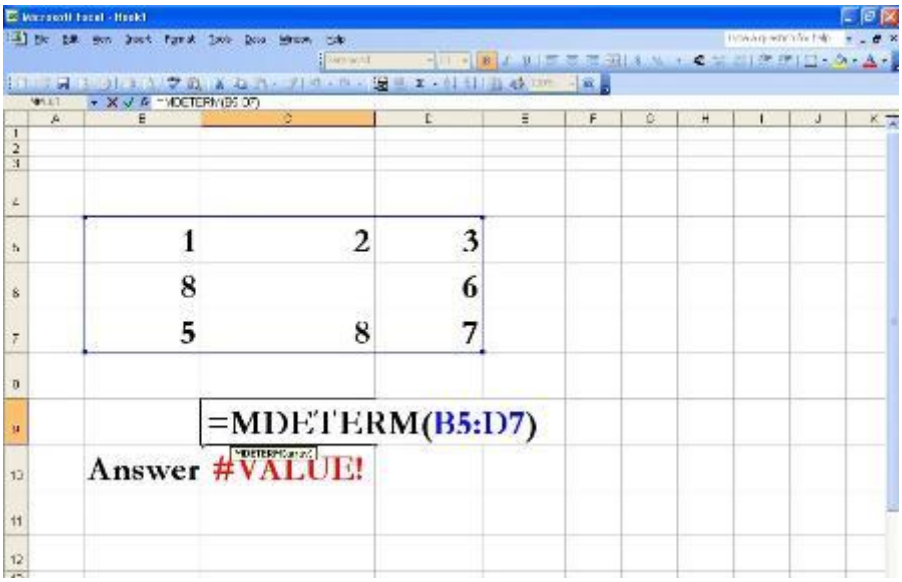
► **60%**

Solution:

25-40=15

15/25×100=60

Question No: 10 (M - 1)



(http://www.vuzs.info)

The answer of the above formula is #VALUE!. The reason of this answer is

► Inverse of the matrix does not exist.

► **It has one blank cell**.

► Number of rows and columns are equal.

► The keys CTRL+SHIFT+ENTER were not pressed simultaneously.

Question No: 11 (M - 1)

This example returns the depreciation for an asset that costs Rs. 10,000, with a salvage value of $8,000. The useful life of the asset is 5 years. The depreciation is being calculated for the third year, and there are 10 months in the first year.

► =DB (10000, 5, 8000, 3, 10)

► =DB (10000, 8000, 5, 10, 3)

► =DB (10000, 8000, 5, 3, 10)

► =DB (10000, 8000, 10, 3, 5)

DB: Returns the depreciation of an asset for a specified period using the fixed-declining balance method.

Syntax:

DB(cost,salvage,life,period,month)

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 12 (M - 1)

This example returns the present value of an investment that pays Rs. 100 at the end of every year for 10 years. The money paid out will earn 5.25% annually.

► =PV (5.25%/1, 10*1, 100, 0)

► =PV (5.25%/1, 10*1, 100, 1)

► =PV (5.25%/12, 10*1, 100, 0)

► =PV (5.25%/1, 10*12, 100, 1)

PV: Returns the present value of an investment

Syntax: PV(rate,nper,pmt,fv,type)
Rate interest rate per period= 5.25%

Nper total number of payment periods in an annuity

Pmt payment made each period and cannot change over the life of the annuity

Fv future value, or a cash balance you want to attain after the last payment is made

Type number 0 or 1 and indicates when payments are due.

Question No: 13 (M - 1)

To add two cells (A1 and A2) together you use the following formula

► **=A1 + A2**

► =Add(A1+A2)

► =together(A1:A2)

► A1 plus A2

Question No: 14 (M - 1)

If A is the matrix of dimension 2x3 and I is the identity matrix of dimension 2x3·
Then which of the following is true

► *AI = I*

► *AI = A*

► *A + I = A*

► ***A + I = I***

IDENTITY MATRIX: An identity matrix is a square matrix with 1's on the main diagonal from the upper left to the lower right and 0's off the main diagonal. An identity matrix is denoted as I.

Question No: 15 (M - 1)

The point at which no profit is made and no losses are incurred is said to be

► Fixed Cost point

► Contribution Margin

► **Break even point**

► Contribution Rate

Break Even point is a point at which neither a profit nor loss is made.

Question No: 16 (M - 1)

Cost analysis provides the following information:

Fixed Costs (FC) per period = Rs. 20000

Variable Costs (VC) = Rs. 30 per unit.

Selling price per unit = S = 50 Rs . Contribution Margin will be

- ► **20 Rs**
- ► 80 Rs
- ► 16 Rs
- ► 26 Rs

Contribution Margin= S-VC

=50-30

=20

Question No: 17 (M - 1)

If there is a change of -30% in the price of an item, what does the negative sign show?

- ► **The price is decreasing.**
- ► The price has low rate of change.
- ► None of the above.
- ► The price is increasing.

Question No: 18 (M - 1)

Net income can be calculated by using

- ► Net income = Number of units sale above break even point * Price per unit
- ► Net income = Total number of units sold * Price per unit
- ► Net income = Number of units sale above break even point * contribution margin per unit
- ► **Net income = Total number of units sold * contribution margin per unit.**

Net Income (NI) or Profit

Net income=NI=Number of units sale above BEP in units × Contribution Margin per unit

Question No: 19 (M - 1)

If you want to multiply a number 7 to matrix $B = \begin{bmatrix} 2 & 3 \\ 4 & 1 \end{bmatrix}$

then the result is

- ► $\begin{bmatrix} 14 & 3 \\ 28 & 1 \end{bmatrix}$
- ► $\begin{bmatrix} 2 & 21 \\ 4 & 7 \end{bmatrix}$
- ► $\begin{bmatrix} 14 & 21 \\ 28 & 7 \end{bmatrix}$
- ► Number cannot be multiply to matrix

Solution:

B= 7x2 7x3

7x4 7x1

Question No: 20 (M - 1)

Given : List Price =5500Rs , Discount = 850Rs, then Net Cost Price will be

- ► 6350 Rs
- ► 5508 Rs
- ► 5585 Rs

► **4650 Rs**

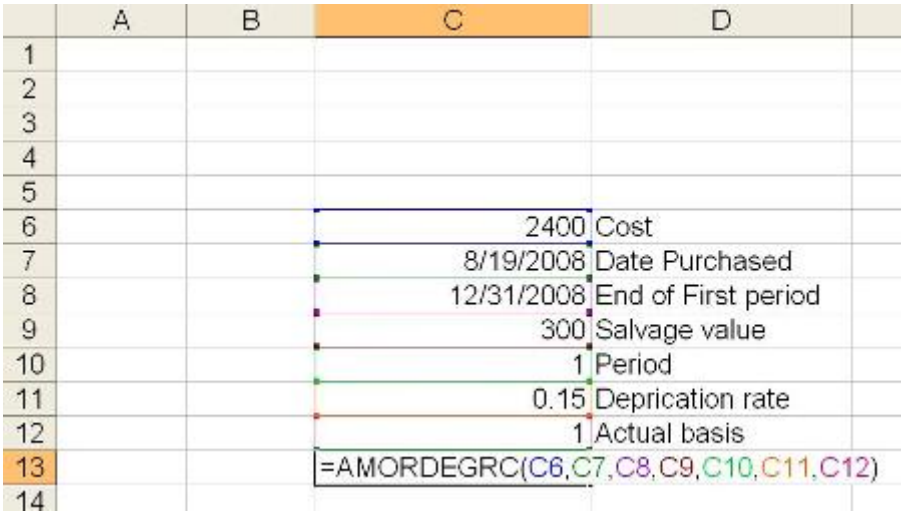
Net Cost Price = List price – Discount

=5,500-850

=4,650Rs

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 21 (M - 2)



	A	B	C	D
1				
2				
3				
4				
5				
6			2400	Cost
7			8/19/2008	Date Purchased
8			12/31/2008	End of First period
9			300	Salvage value
10			1	Period
11			0.15	Deprication rate
12			1	Actual basis
13			=AMORDEGRC(C6,C7,C8,C9,C10,C11,C12)	
14				

What is the purpose of above given function and why we have used here with respect to give data?

Answer:

AMORDEGRC Returns the depreciation of an asset, for each accounting period by using depreciation coefficient.

The formula is AMORDEGRC (Cost, start date , end date, salvage value, nper, rate, type)

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 22 (M - 2)

An item originally priced at $55 is marked up 25% . What is the sale price?

Answer:

Sale Price = Original Price × (1 + Markup on original price)

Sale Price = $ 55 x (1 + 25/100)

Sale Price = $ 55 x (1 + 0.25)

Sale Price = $ 55 x 1.25

Sale Price = $ 68.75

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 23 (M - 3)

An item is marked down 17%; the sale price is $137.46. What was the original price?

Answer:

Selling price = Original Price (1 – markup)

Let suppose Original Price is S

137.46 = S x (1-0.17)

S = 137.46 / 0.83

Then Original Selling Price = 165.61445

Question No: 24 (M - 3)

Solve the following system of equations by substitution method.

$2x - 3y = -2, \quad 4x + y = 24$

Answer:

Linear equations by substitution method:

4x + y = 24

Y= 24-4x

By putting the value of y=24-4x, we will get:

2x – 3(24-4x) = –2

2x-72+12x=-2

14x=72-2

14x=70

X=70/14

X=5

By putting the value of x=5 in the following equation we will get:

2x – 3y = –2

2(5)-3y=-2

10-3y=-2

-3y=-2-10

-3y=-12

Y=12/3

Y=4

nailamuzammel@hotmail.com (mailto:nailamuzammel@hotmail.com)

www.vuzs.info (http://groups.google.com/group/vuZs)

Question No: 25 (M - 5)

A gold chain is sold for Rs. 6500 at a gain of 25%. Find the profit.

Answer:

Sale price = Rs 6500

Cost Price = C

Gain = 25%

List Price = Sale price – (25% of Sale price)

= 6500 – 1625

= 4875Rs

Profit = 6,500 – 4,875

Profit = 1,625Rs.

Question No: 26 (M - 5)

A retailer used a markup rate of 18% on cost. Find the selling price of an item that costs the retailer $60.

Answer:

Cost = $60

Markup Rate = 18% on Cost

Selling Price = Cost Price x (1 + Markup on Cost Price)

Selling Price = 60 x (1 + 0.18)

Selling Price = 60 x 1.18

Selling Price by retailer = $ 70.8