ASSIGNMENT 1 (COMPULSORY)

Due Date	Unique Number
04 August 2017	767179

Submit your answers online through myUnisa. No extensions will be granted for submission of this assignment. ***NO*** *manual or posted submissions will be allowed.*

Question 1

The expression: $x_1^2 f(x_1) + x_2^2 f(x_2) + x_3^2 f(x_3) + x_4^2 f(x_4) + x_5^2 f(x_5)$ can be written as a summation notation as:

1) $\sum_{i=1}^{5} x_5^2 \, f(x_5)$
2) $\sum_{i=1}^{5} x_1^2 \, f(x_5)$
3) $\sum_{i=1}^{5} x_i^2 \, f(x_i)$
4) $\sum_{i=1}^{5} x^2 \, f(x)$
5) None of the above

Question 2

The cost of fish has increased in the ratio of 9 : 7. If the original cost was R5.60 per kg, what is the new price?

1) R4.35
2) R7.20
3) R50.40
4) R39.50
5) None of the above

Question 3

Six men and eight women have volunteered to serve on a committee. How many different committees can be formed containing three men and three women?

1) 806 400
2) 336 000
3) 403 200
4) 224 000
5) None of the above

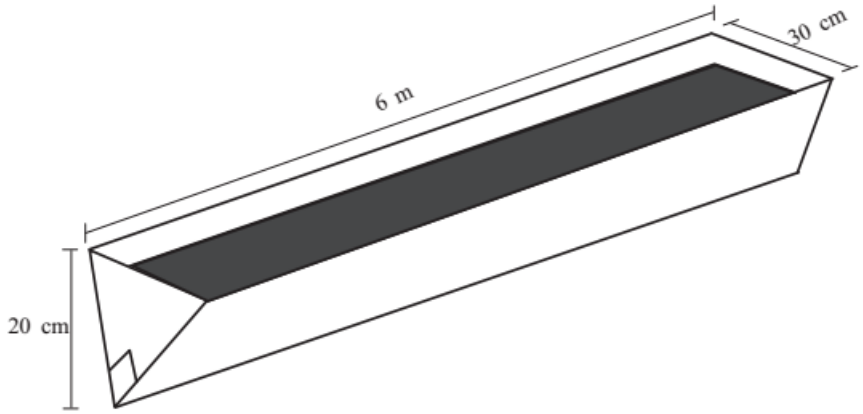
Question 4

A car dealer is offering any 4 of 6 special options at the same price on a specially equipped car being sold. How many different choices of specially equipped cars do you have?

1) 15
2) 30
3) 120
4) 12
5) None of the above

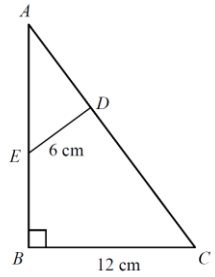
Question 5

A horizontal drinking trough for cattle is in the shape of a triangular prism. It is 6 m long and a cross section is in the shape of a triangle with base length 30 cm and height 20 cm. What is the capacity of the tank in litres?



1) 360 litres
2) 180 litres
3) 36 litres
4) 18 litres
5) None of the above

Question 6



Triangle ABC is similar to triangle ADE. DE = 6 cm and BC = 12 cm. If the area of triangle ABC is 90 cm^2, what is the area of triangle ADE?

1) $90cm^2$
2) $15cm^2$
3) $22.5cm^2$
4) $45cm^2$
5) None of the above

Question 7

An inspector visits a large company to check its vehicles. The company has the following vehicles:

5 large-load vehicles; 130 light vans; and 25 cars.

The inspector decides to take a sample of 20% of all the vehicles. Each type of vehicle is to be represented in the sample; so he will use the stratified random sampling technique. The number of light vans that should be inspected is:

1) 16
2) 5
3) 32
4) 26
5) None of the above

Questions 8-11 are based on the following information:

Suppose a company has 10 employees, 1 earning R160 000, 1 earning R120 000, 2 earning R60 000, 1 earning R40 000, and 5 earning R32 000.

Question 8

What is the mean salary for the company?

1) R40 000
2) R36 000
3) R60 000
4) R32 000
5) None of the above

Question 9

What is the median salary?

1) R40 000
2) R36 000
3) R60 000
4) R32 000
5) None of the above

Question 10

What is the mode of the salaries?

1) R40 000
2) R36 000
3) R60 000
4) R32 000
5) None of the above

Question 11

What is the standard deviation of the salaries?

1) R40 000.00
2) R44 621.87
3) R38 416.55
4) R41 583.12
5) None of the above

Questions 12 to 15 are based on the following information.

The incomes (in rands) of seven drivers during the week are: 1 080; 2 000; 1 580; 1 540; 2 500; 1 800; 1 580.

Question 12

The average income is:

1) 1 905.71
2) 1 580.00
3) 586.94
4) 460.00
5) None of the above

Question 13

The mode of the income is:

1) 1 905.71
2) 1 580.00
3) 586.94
4) 460.00
5) None of the above

Question 14

The standard deviation of the income is:

1) 1905.71
2) 460.00
3) 400.00
4) 586.94
5) None of the above

Question 15

The quartile deviation of the income is:

1) 586.94
2) 400.00
3) 1 905.71
4) 460.00
5) None of the above

Question 16 – 17 are based on the following information:

An index of clothing prices for 2005 based on 1998 is to be constructed. The clothing items considered are shoes and dresses. The information for prices and quantities for both years is given below. Use 1998 as the base period and 100 as the base value.

	1998		2005	
Item	**Price ($)**	**Quantity**	**Price ($)**	**Quantity**
Dress (each)	75	500	85	520
Shoes (pair)	40	1200	45	1300

Question 16

Determine Laspeyres price index.

1) 98.9
2) 103.7
3) 112.9
4) 106.4
5) None of the above

Question 17

Determine the Paasche price index.

1) 98.9
2) 103.7
3) 112.9
4) 106.4
5) None of the above

Question 18

The number of items produced by a company for 1999 and 2005 and the wholesale prices for the two periods are:

Item Produced	Price ($)		Number Produced	
	1999	2005	1999	2005
Shear pins (box)	3	4	10 000	9000
Cutting compound (500 g)	1	5	600	200
Tie rods (each)	10	8	3000	5000

Find the index of the value of production for 2005 using 1999 as the base period.

1) 99.7
2) 127.1
3) 100.3
4) 110.6
5) None of the above

Question 19

Suppose the Consumer Price Index for the latest month is 134.0 (1992 as 100). What is the purchasing power of the rand?

1) R75.00
2) R0.075
3) R0.75
4) R7.50
5) None of the above

Question 20

Mrs Mthombeni inherits some money. She intends to spend R25 000 on a holiday in Mexico. How much money will this amount be in Mexican pesos (MXN)? Use the exchange rate:

1.6915MXN = R1.00

The correct answer is:

1) 14 799.78MXN
2) 25 001.69MXN
3) 34 799.78MXN
4) 42 287.50MXN
5) None of the above

Question 21

Assume that in the year 2014 the Consumer Price index (CPI) was 102.7 in February and 110.5 in November. An employee's wage was R20 000 in February and R22 145 in November. In relation to the value of the rand in November, his wage has:

1) Increased by R2 145.00
2) Decreased by R566.52
3) Decreased by R395.15
4) Increased by R566.52
5) None of the above