UNIVERSUTY OF SWAZILAND

FINAL EXAMINATION PAPER - 2016 : B.ED PRIMARY

COURSE NUMBER : PEC 100

COURSE NAME : BASIC NUMERICAL SKILLS

TIME ALLOWED : 3 HOURS TOTAL MARKS : 100

IINSTRUCTIONS 1. ALL QUESTIONS ARE **COMPULSORY**

2. ANY PIECE OF MATERIAL WHICH IS NOT FOR MARKING PURPOSES MUST BE **CROSSED OUT** CLEARLY

THIS PAPER MUST NOT BE OPENED UNTIL PERMISSION IS GIVEN BY THE INVIGILATOR.

ANSWER ALL QUESTIONS

1 **(a)_** Copy and complete the following table:

| | 2 decimal places | Nearest 10 | 1 significant figure |
|---|---|---|---|
| 958.428 | | | |
| 18.7545 | | | |
| 541.067 | | | |

[9]

**(b)** By using your answers in (a), estimate $\frac{958.428 \times 16.7545}{541.067}$

to one significant figure [3]

2 Convert the following

**(a)** $\frac{6}{7}$ to a decimal number (2 decimal places) [2]

**(b)** 0.125 as a fraction in simplest form [2]

**(c)** 0.34 as a percentage [2]

**(d)** 0.00024 km to mm [3]

3 Evaluate the following

**(a)** $1.05 \div 0.005$ [3]

**(b)** $7 - {}^{-}4 + 5 \times {}^{-}2,$ [2]

**(c)** $3\frac{3}{4} - 1\frac{2}{5}$ [3]

**(d)** $424.03 - 13.567 + 1.06$ [2]

4 **(a)** List the first four square numbers [2]

**(b)** With appropriate examples, define a rational number [3]

**(d)** Express 630 as a product of its prime factors [3]

**5** **(a)** Simplify the following;

**(i)** $3(x-4y)-2(x+5y)$ [2]

**(ii)** $(a-3y)(2a-y)$ [2]

**(iii)** $\frac{2a}{3}+\frac{2(a-b)}{5}$ [3]

**(b)** Solve the following equations

**(i)** $x^2-6x+8=0$. [3]

**(ii)** $y+\frac{2y}{3}=5$ [3]

**(iii)** $\frac{2(x+1)}{5}-\frac{x-1}{3}=\frac{1}{15}$ [4]

**6** You are given that the Universal set $\mathcal{E}=\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$
$A=\{2, 3, 5, 7, 11\}$
$B=\{1, 3, 5, 6, 8, 9, 11\}$

**(a)** Draw a Venn diagram to show the information above [3]

**(b)** Describe set A in full [2]

**(c)** List the members of the following sets

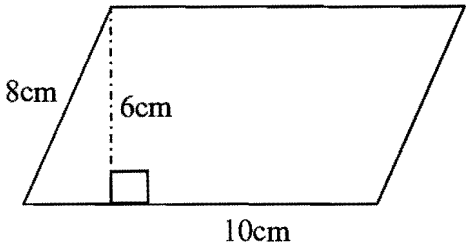
**(i)** $A' \cup B$ [2]

**(ii)** $(A \cap B)'$ [2]

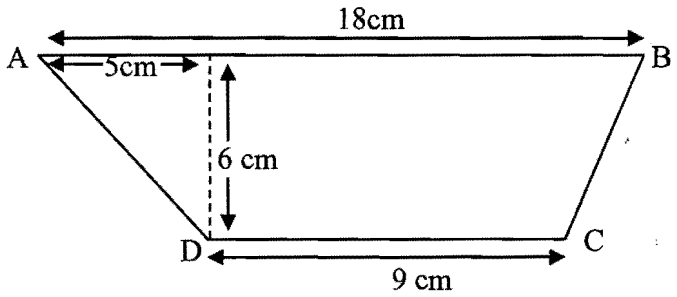
**(d)** Find $n(A \cup B')$ [2]

**(e** Find all subsets of {a, b} [4]

7 **(a)** Calculate the area of the figure below. [2]




**(b)** You are given the trapezium below.




Calculate the area in

**(i)** $cm^2$ [3]

**(ii)** $m^2$ [3]

8 (a) 6 ovacados cost E42.

**(i)** Calculate the cost of 13 ovacados. [2]

**(ii)** Musa has E160.

What is the maximum number of ovacados that he can buy? [3]

**(b)** Mrs Dlamini gave her three sons Banele, Mandla and Vusi E540 to share in the ratio 2:3:4.

**(i)** How much did Mandla get? [2]

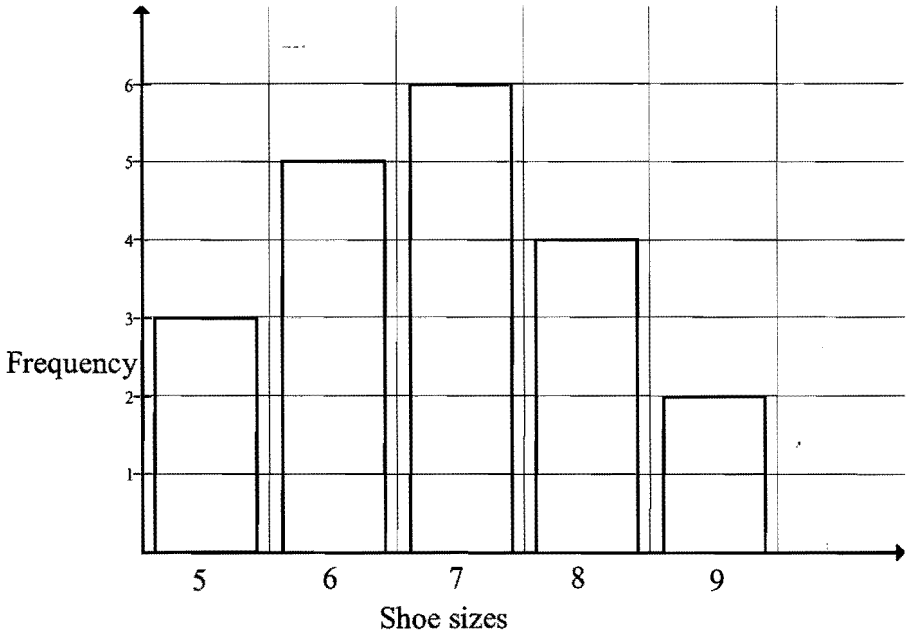
**(ii)** How much more did Vusi get than Banele? [2]

**(iii)** Mandla is 15 years old. If their ages are in the same ratio, 2:3:4,

What is the sum of their ages? [3]

**9** A survey was carried out to find the shoe sizes of some pupils

The bar chart below shows the results of the survey .




**(a)** How many pupils were in the survey? [2]

**(b)** What is the mode? [1]

**(c)** Find the median [2]

**(d)** Calculate the mean. [3]