UNIVERSUTY OF SWAZILAND

FINAL EXAMINATION PAPER - 2015 : B.ED PRIMARY

COURSE NUMBER : PEC 100

COURSE NAME : BASIC NUMERICAL SKILLS

TIME ALLOWED : 3 HOURS

IINSTRUCTIONS   1.   THIS PAPER IS DIVIDED INTO **TWO** SECTIONS.

2.   SECTION A AND SECTION B QUESTIONS ARE ALL **COMPULSORY**

3.   SECTION A IS WORTH A MAXIMUM OF 50 MARKS AND SECTION B IS WORTH A MAXIMUM OF 50 MARKS.

4.   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.

SECTION A

ANSWER ALL QUESTIONS

Question 1

(a) What is the place value of 4 in the numbers below.

    (i) 23.0546   [1]

    (ii) 546.98   [1]

    (iii) 764.8   [1]

(b) Write the numbers in 1 (a) above to **one** decimal place.   [3]

(c) By first estimating these to one significant figure, evaluate

$$\frac{546.98 \times 764.8}{23.0546} \text{ to one significant figure.} \qquad [4]$$

Question 2

(a) Work out the following

    (i) $-10 - 4 \times 3 - 14 + 7$ [2]

    (ii) $13.045 + 567.3 - 24.01$ [2]

(b) Calculate

    (i) $3\frac{2}{3} + 1\frac{1}{4} - \frac{5}{6}$ [3]

    (ii) $2\frac{1}{5} \times \frac{1}{2} \div \frac{3}{4}$ [3]

Question 3

(a) Copy and complete the table below

Decimal (two plces)	Fraction	Percentage	Nearest tenths
0.125			
	$\frac{3}{4}$		

    [6]

(b) Convert the following

    (i) 0.07 km to cm.   [2]

    (ii) 4500 mg to kg   [3]

Question 4

Some students in a class obtained the following marks in a quiz.

5   6   9   5   7   3   8   5   9   4

Find

(a) the range   [1]

(b) the mode   [1]

(c) the median   [2]

(d) the mean   [3]

Question 5

(a) Simplify the following

    (i) $2y - 6x - 7x + 2(x - 5y)$ [2]

    (ii) $\dfrac{4a}{3} - \dfrac{7a+5}{2}$ [3]

(b) Factorise the following

    (i) $24m - 36mn + 16my$ [2]

    (ii) $x^2 - 3x - 4$ [2]

(c)Express 420 as a product of its prime factors.   [3]

SECTION B

ANSWER ALL QUESTIONS

Question 6

Solve the following expressions

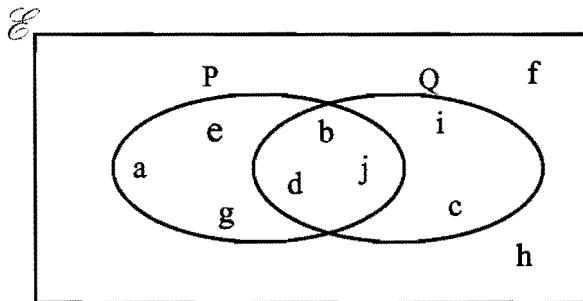(a) $4 + \dfrac{y}{2} = 13$ [2]

(b) $\dfrac{x+4}{3} - \dfrac{3-2x}{4} = 5$ [4]

(c) $x^2 + 4x - 12 = 0.$ [3]

(d) $x^2 - 2x = 15$ [4]

Question 7

You are given the Venn diagram below.

(a) List the elements of the Universal set.   [2]

(b) Describe the Universal set in full.   [2]

(c) List

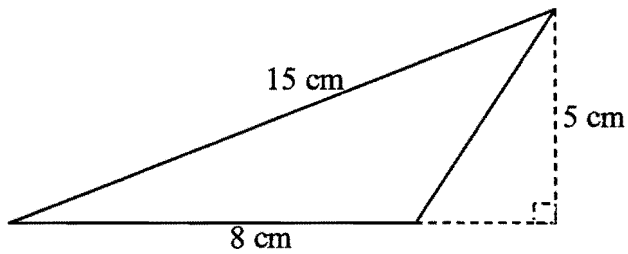(i) $P^1 \cap Q$ [2]

(ii) $P^1 \cup Q^1$ [2]

(iii) $(P \cap Q)^1$ [2]

(d) The set $P \cap Q = \{ b, d, j \}$.

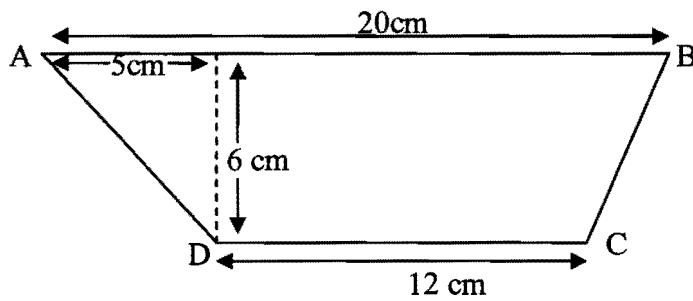List all the subsets of the set $P \cap Q$.   [5]

Question 8

(a) Calculate the area of the triangle below. [2]

(b) The diagram below shows trapezium ABCD.

Calculate the area of the trapezium in

    (i) cm^2 [4]

    (ii) m^2. [4]

(b) You are given that the area of a rectangle is 80 cm^2. If its length is 10 cm and its width is $(x + 3)$.

Calculate the value of x. [3]

Question 9

(a) In a grocery shop, 10 oranges cost E5.

Calculate the cost of 15 oranges. [2]

(b) Mr Simelane earns E10 000 per month, he decided to spend his monthly salary in one month this way:

E5 000 loan repayment, E3 000 for food and he saved the rest.

      (i) What is the ratio of loan, food and save ? [2]

      (ii) What percentage of his salary did he save? [2]

A few months later he got an increment of 50% on his salary.

      (iii) If he used the same ratio of loan, food and save , how much did he

      spend on food in one month? [3]