UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER – 2013:   BED I PRIMARY

COURSE NUMBER: PEC 100

COURSE NAME: BASIC NUMERICAL SKILLS

TIME ALLOWED: 3 HOURS

INSTRUCTIONS: 1.   THIS PAPER IS DIVIDED INTO **TWO** SECTIONS

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

3.   SECTION A IS WORTH A MAXIMUM OF 45 MARKS AND SECTION B IS WORTH 55 MARKS.

4.   DOCUMENTS REFERRED TO IN SOME OF THE QUESTIONS ARE ATTACHED. IF YOU CAN'T FIND THEM ASK FOR THEM.

5.   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.

This paper has 6 printed pages

SECTION A

Answer All Questions

1   Write the following numbers

    (a)   240.95 as a whole   [1]

    (b)   0.0936 to 2 significant figures   [1]

    (c)   7.085 to 1 decimal place   [1]

2   Find the approximate value of $\dfrac{304\times19.0\times21}{12.38\times1.56}$ by first writing each number to 1 significant figure.   [5]

3   (a) Arrange these fractions in order, starting with the smallest first.

$$\frac{7}{8}, \quad \frac{2}{5}, \quad \frac{1}{4}, \quad \frac{7}{10}, \quad \frac{13}{20}.$$

                                                       [3]

    (b) Write 54 as a product of its prime factors   [2]

4   (a) Convert.

        (i)   7.5 kg to mg   [2]

        (ii)   0.84cm to km   [2]

    (b) You are given the distribution

        8   3   2   5   4   9   3   6

Find   (i) the mode   [1]

        (i) the median   [2]

        (iii) the mean   [2]

5   Convert each number to the given form

    (a)   0.125 as a common fraction in its simplest form   [2]

    (b) $2\dfrac{3}{8}$ as a decimal fraction   [2]

    (c)   45% as a fraction   [2]

6   Work out the following

    (a)   12% of 300g   [2]

    (a) $3\dfrac{1}{2}+21\dfrac{2}{3}$ [3]

    (c) $\dfrac{2}{5}\div 2\dfrac{1}{4}$ [3]

7   (a) Simplify the following

    (i) $2x+6y-3(4x+7y)$ [2]

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

    (b) Solve the following equations

    (i) $4x+2=3-2x$ [3]

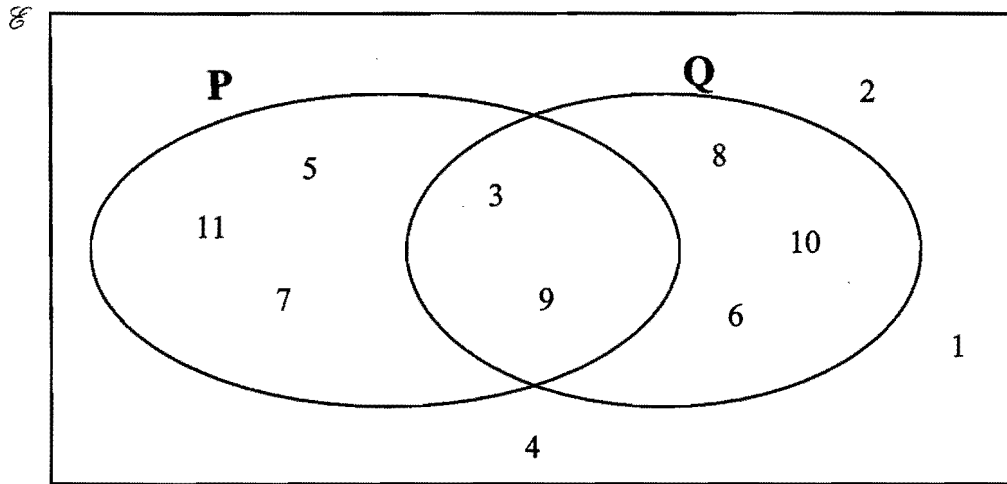   (i) $\dfrac{2x}{7}=x-3$ [3]

8   (a)   Factorise the following

    (i) $10m-16mn,$ [1]

    (ii) $x^2-3x-10$ [2]

SECTION B
Answer all questions

9   Two sets, P and Q are represented in the Venn diagram.

(a)   List all the elements of

    (i)   the Universal set ($\mathscr{E}$)   [2]

    (ii)   set P   [2]

(b)   Describe set P in full   [2]

(c)   List the elements of

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

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

(d)   Find
    (i) $n(P^{1} \cap Q)$ [2]

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

(e)   Write down all the subsets of $P \cap Q$ [4]

10   The bar chart below represents marks obtained by learners in a class.

Marks of learners

Number of learners (Frequency)
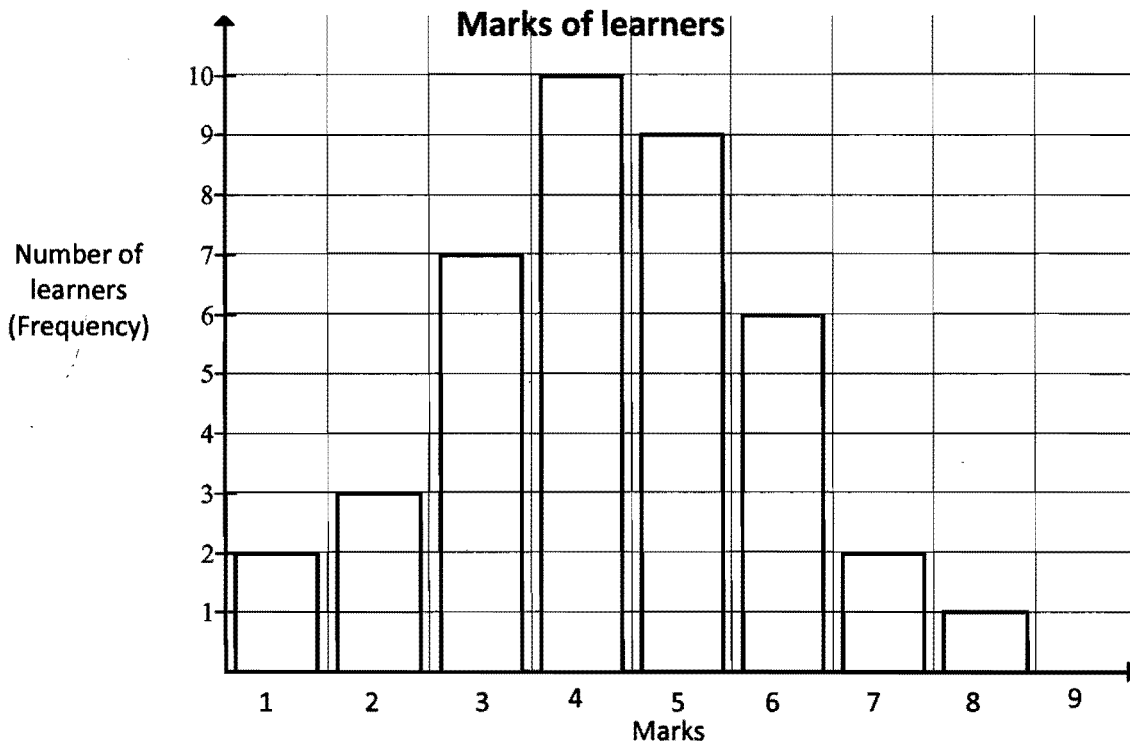
Marks

(a)   What is the mode?   [1]

(b)   How many students wrote the test?   [2]

(c)   Copy and complete the frequency table below

Marks	Frequency
1	
2	
3	
4	
5	
6	
7	
8	

[2]

(d)   Calculate the mean   [3]

(e)   Calculate the median   [3]

11   Mr Mavuso earns a salary of E20 000.00.
      In one month he used his salary in this way; E9 000.00 on payment
      of loan, E6 000.00 on food, he saves the rest.

      (a)   Write the ratio of the distribution of his money
             in the form; loan : food : save   [3]

      (b)   What percentage of his salary was his loan payment?   [3]

      (c)   What fraction of his salary did he save?   [3]

12   (a)   Parallelogram ABCD is given below.
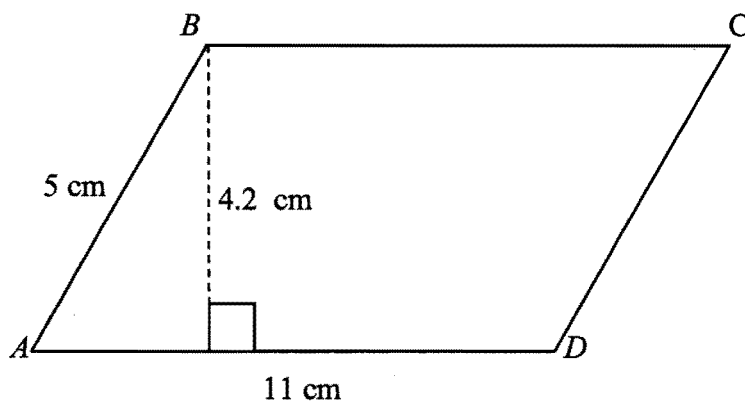
      (i)   Calculate the area of the parallelogram ABCD in cm^2.   [2]

      (ii)   Write the area of ABCD in m^2.   [3]

(b) Solve

      (i) $\dfrac{3a-4}{3} = \dfrac{4-a}{5}$ [3]

      (ii) $x^2 + 2x - 15 = 0$ [4]