

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER – 2012: 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 Some numbers are listed below.

0.45, 67, $\sqrt{31}$, $\frac{43}{77}$, 4.66666..., -4, 2.37149063592...

Which of these numbers are

- (a) Integers [2]
(b) Irrational numbers [2]

2 Work out the following

- (a) 0.035×2.1 [2]
(b) $10 - 3(2 - 8)$ [2]
(c) $-6 - 4 \div 2$ [2]

3 Musa and Nonhle and Owethu share E720 in the ratio 2 : 3 : 4

Calculate the amount

- (a) Musa received. [2]
(b) Owethu received. [2]

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

(b) Describe this set in full

{ 8, 10, 12, 14, 16, 18 } [2]

(c) Express 90 as a product of its prime factors [3]

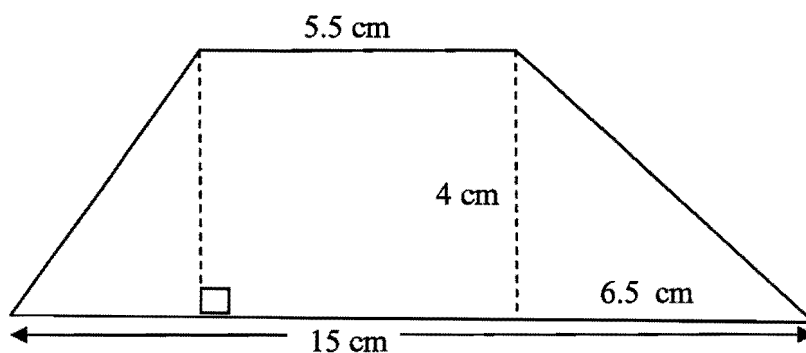
5 Find 30% of each of the following

- (a) 700kg [2]
(b) E654.30 [2]

- 6 Convert each of the following numbers correct to the given form.
- (a) 0.125 to a common fraction in its simplest form. [2]
- (b) $\frac{5}{8}$ as a decimal fraction [2]
- (c) $\frac{9}{24}$ as a percentage. [2]
- (d) 35 ml of 7 litres as a fraction in its simplest form. [2]
- 7 Write these numbers to one significant figure.
- (a) 25.3 [1]
- (b) 599 [1]
- (c) 0.827 [1]
- (d) 9.8 [1]
- (e) Hence estimate $\frac{25.3 \times 599 \times 0.827}{9.8}$ to one significant figure. [3]
- 8 Some marks of students are given below
25 22 23 21 25 22 24 22 23
- Find
- (a) The mode [1]
- (b) The median [2]
- (c) The mean [2]

SECTION B
ANSWER ALL QUESTIONS

- 9 A trapezium is drawn below.



Calculate the total area in

- (a) cm^2 [3]
 (b) m^2 [3]
 (c) The area of the rectangular piece in km^2 [4]
10. Students in a class wrote a mathematics quiz. This information is shown in the frequency table below.

Marks	Frequency
0	2
1	3
2	6
3	5
4	11
5	6
6	4
7	2
8	1
9	0

- (a) How many students wrote the quiz? [2]
 (b) What was the mode? [1]
 (c) What was the median? [3]
 (d) Calculate the mean [3]
 (e) If students who got 5 marks and above passed the quiz, how many students failed? [2]

- 11 You are Given , $\mathcal{E} = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$,
 $A = \{2, 4, 6, 8, 10\}$
 $B = \{2, 3\}$

(a) List all the subsets of set B [4]

(b) Draw a Venn diagram showing \mathcal{E} , A and B. [3]

(c) List the elements of

(i) $A \cap B$ [2]

(ii) $A^1 \cup B$ [2]

(d) Write down the following

(i) $n(A^1)$ [2]

(i) $n(A^1 \cap B^1)$ [3]

- 12 (a) Factorise the following expressions

(i) $2ax + 8a - 10ab + 18$ [2]

(ii) $x^2 + 6x - 27$ [2]

(b) Simplify the expressions

(i) $\frac{2x}{3} + \frac{5x}{4}$ [2]

(ii) $\frac{3x-5}{5} + \frac{2(5x-2)}{3}$ [3]

(c) Solve the equations

(i) $\frac{a-3}{4} = 5$ [2]

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

(iii) $x^2 - 5x + 6 = 0$ [3]