

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER - 2014 BED 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 46 MARKS AND SECTION B IS WORTH 54 MARKS
 4. DOCUMENTS REFERED TO IN SOME OF THE QUESTIONS ARE ATTACHED. IF YOU CANT FIND THEM ASK FOR THEM
 5. ANY PIECE OF MATERIAL WHICH IS NOT FOR MARKING PURPOSES MUST BE CROSSED OUT CLEARLY

Special Requirements: Graph Paper

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

This paper has 5 printed pages.

SECTION A

Answer All Questions

- 1 (a) Copy and complete the table below.

Percentage	Fraction	Decimal
60%		
	$\frac{3}{4}$	
		0.35

[6]

- (b) Convert 0.225 to a common fraction into its simplest form.

[2]

- (c) Estimate 567.079

(i) to one decimal place

[1]

(ii) to two significant figures.

[1]

- 2 (a) Describe the following numbers in the most precise terms using the hierarchy of numbers.

(i) -6 (ii) $\frac{2}{5}$ (iii) $\sqrt{7}$ (iv) $\sqrt{16}$ [4]

- (b) Work out

(i) $-3 + -6 - -9 \div 3 - 2$ [2]

(ii) $1.05 \div 0.005$ [2]

- (c) Express 120 as a product of its prime factors. [2]

3 Simplify the expressions

(a) $2(6x - y) - 3(x + 2y - 7) + x - 9$ [3]

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

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

4 Solve the following

(a) $6x + 5 = 35$ [2]

(b) $8x - 15 - 3x = 5$ [2]

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

(d) $x^2 - 8x + 15 = 0$ [3]

5 (a) The distribution below shows the shoe sizes of ten learners in a class;

4 6 6 8 4 7 5 8 5 6

Find

(i) The range [1]

(ii) The mode [1]

(iii) The median [2]

(iv) The mean [3]

SECTION B
Answer all Questions

- 6 (a) A transport company charges E250 for carrying 20 tonnes of goods a certain distance.
How much will it charge for carrying 30 tonnes the same distance? [2]
- (b) In a certain month, three sisters, Ayanda, Busi and Celiwe share E200 in the ratio 2 : 3 : 5.
- (i) Calculate the amount Busi got. [2]
- (ii) What percentage did Ayanda get? [2]
- (iii) In another month their father gave them some money.
Celiwe got E120 from the money their father gave them..
How much did their father give them this time if they share it in the same ratio? [3]

- 7 The data below shows marks obtained by students in a mathematics quiz.

5	6	5	2	4	6	5	6	4	7
4	3	6	5	7	9	3	5	6	3
6	5	7	3	6	4	6	2	5	4

- (a) How many students wrote the quiz [2]
- (b) Copy and complete the frequency table below

Marks	Frequency (number of students)
2	
3	
4	
5	
6	
7	
8	
9	
Total	

[4]

- (c) What is the mode. [1]
- (d) Find the median mark. [3]
- (e) Calculate the mean mark. [3]
- (f) Use a graph paper to draw a bar chart showing the information above.
Use 1 cm for one unit for both axis [6]

8 Answer the whole of this question on a sheet of graph paper
A diagram has coordinates A(1, 1), B(3, 5), C(7, 5) and D(10, 1).

- (a) On the graph paper, draw x and y axis using a scale of 1 cm to one unit for both axis. Number the x -axis from 0 to 10 and the y -axis from 0 to 8. [2]
- (b) Plot and join the points A, B, C and D. [4]
- (c) What is the name of the shape formed by ABCD? [1]
- (d) Calculate the area of ABCD in cm^2 . [3]
- (e) Calculate the area of ABCD in m^2 [3]

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

$$A = \{ 2, 4, 6, 8 \}$$

$$B = \{ 3, 4, 5, 6, 9 \}$$

- (a) Draw a Venn diagram to show this information. [3]
- (b) Describe set A in full. [2]
- (c) List set $A \cup B^c$ [2]
- (d) Find
- (i) $n(B^c)$ [2]
- (i) $n(A^c \cap B)$ [2]
- (e) In Plain Language describe the set $A \cap B$. [2].