

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER - 2008: 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 ALL QUESTIONS ARE COMPULSORY. YOU MAY THEN CHOOSE ANY TW (2) QUESTIONS FROM SECTION B.
  3. SECTION A IS WORTH A MAXIMUM OF 60 MARKS AND SECTION B IS WORTH 40 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.

SPECIAL REQUIREMENTS: GRAPH PAPER

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

**SECTION A**

**60 MARKS**

Answer **ALL** questions from this section. The use of calculators is **not** advisable

**Question 1**

Which figures are in the tens position in the following numbers below

- (i) 13.936                      (ii) 0.606                      (iii) 734.054                      (iv) 253                      (4)

Describe the following numbers in the most precise terms using the hierarchy of numbers

- (i)  $\frac{3}{4}$                       (ii)  $-\frac{6}{3}$                       (iii)  $\sqrt{4}$                       (iv)  $\sqrt{5}$                       (4)

Rearrange the number 510430921 such that it represents

- (i) its lowest value  
(ii) its highest value  
(iii) an odd number  
(iv) an even number.                      (4)

**Question 2**

Work out:

(i) 
$$\frac{-4 + 3 \times -2}{-2 \times -3}$$
                      (3)

(ii)  $-2(47.01 + 102.917) - 9 + 1.6$                       (4)

(iii)  $\frac{14 + 6 \times 2 - 5}{9}$  Give your answer to

(i) 2 significant figures                      (3)

(ii) 2 decimal places                      (2)

**Question 3**

Write 36 as a product of its prime factors                      (3)

**Question 4**

Find the area of a rectangle 10 m by 8 cm. Give your answer in:

(i)  $\text{cm}^2$                       (3)

(ii)  $\text{m}^2$                       (2)

**Question 5**

Calculate

a)  $3y - 5 = 7$  (3)

b)  $\frac{x}{2} - \frac{x}{3} = 2$  (3)

**Question 6**

Given that set F = fruits and V = vegetables are equivalent sets

List elements of Sets F and V (4)

**Question 7**

Calculate:

a.  $2\frac{2}{3} + 4\frac{4}{5} - 1\frac{1}{2}$  (3)

b.  $1\frac{1}{8} \times 6/9 \div 1/5$  (3)

**Question 8**

a) Remove brackets from

$x(x + 5)$  (2)

b) Collect like terms

$5x + 2 + 6x - 7 + 8y - 3y + 2y$  (3)

c) Simplify

$\frac{6x^2}{2x}$  (2)

**SECTION B****40 MARKS**

Answer any TWO (2) questions from this section. You may use a calculator.

**Question 9**

Khosi Tau's shopping list for June 2006 was:

10kg rice at E36.50, 3 litres umcenge milk at E9.90 per litre, 10kg soup meat at E23.50 per kg, a packet of onions at E32.50, 3 litres cooking oil at E7.98 per 750 ml, 3 kg sugar at E4.69 per kg.

- a) Calculate her bill (7)
- b) Find her change if she paid with three (4) E100 notes. (3)
- c) If Khosi's salary is E2500 per month, calculate the percentage of her salary spent on the groceries (4)
- d) Supposing Khosi uses half ( $\frac{1}{2}$ ) her salary on bills and fees in the ratios 1:2:3 for water, electricity and Themba's fees respectively in June. How much does she pay for each? (7)

**Question 10**

- a) Given that  $T =$  the first eight multiples of 3  
 $F =$  the first six multiples of 4
  - (i) List members of  $T$ ,  $F$  and  $T \cap F$  (6)
  - (ii) Show these sets in a Venn diagram (4)
  
- b) Given that set  $G =$  all girls,  $F =$  all football players, and  $P =$  all students doing physical education in a school. Write symbols to represent the following information.
  - (i) some girls do play football (2)
  - (ii) all physical education students play football (2)
  
- c) Given that set  $A = \{ a, e, i, o, u \}$   
 $B = \{ a, b, c, d, e \}$   
 $C = \{ 1, 2, 3, 4, 5 \}$ 
  - (i) Find  $n(A \cap B)$ ,  $n(A \cup C)$  and  $A \cup B$  (6)

**Question 11**

On the graph paper provided

- a) Plot the points A(2, -1), B(6, -1), C(5, 3) and D (3, 3) (5)
- b) Joint the points in order of the alphabets (2)
- c) Name the figure you have drawn (2)
- d) Find the area of the figure if each square represent one centimetre (6)
- e) Find the equation of a line which bisects line AB (4)
- f) Write the coordinate of the point where the two lines in (e) cross. (2)

**Question 12**

a) Simplify

- (i)  $\frac{3}{4} + \frac{1}{3} - \frac{1}{2} \times \frac{2}{3}$  (4)
- (ii)  $5(a + 2b) - 3(2a - b)$  (3)
- (iii)  $x^2 - 8x + 15$  (4)
- (iv)  $\frac{5a - 4}{3} - 4 + \frac{2b}{5}$  (4)

b) Solve

- (i)  $x^2 + 6x = -8$  (4)
- (ii)  $x^2 - 36 = 0$  (2)