UNIVERSITY OF JOHANNESBURG
FACULTY OF EDUCATION
DECEMBER
SUPPLEMENTARY EXAMINATION 2015

PROGRAMME: BED INTERMEDIATE PHASE
MODULE: INTRODUCTION TO MATHEMATICS FOR INTERMEDIATE PHASE
CODE: MATINB1
TIME: 2 hours
MARKS: 120
EXAMINER: PROF. K. LUNETA
MODERATOR: DR. J. P. MAKONYE
(This paper consists of 3 pages)

INSTRUCTIONS
Read the following instructions carefully before answering the questions.
1. This question paper consist of 6 questions divided into several parts
2. Answer ALL the questions
3. No calculators are allowed in this examination

QUESTION 1

1.1 What is a fractional chart? Draw one that is made up of (WHOLE, HALF, THIRD, FIFTH) different fractions from a single rectangular whole.

(4)

1.2 State four types of fractions discussed in this course and for each case provide an example.

(8)

1.3 In point form, explain the steps to follow in order to DIVIDE fractions with different denominators.

(4)

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QUESTION 2

2.1 Find solutions to the following problems

i. $\frac{3}{4} \times \frac{1}{6}$ ii. $\frac{2}{5} \div \frac{4}{6} \div \frac{1}{8}$ iii. $\frac{3}{12} + \frac{2}{10}$ iv. $\frac{3}{20} - \frac{1}{5}$

(8)

2.2 Find the answer to the problem below.

$$2 + \frac{4}{15} + \frac{3}{20}$$

(4)

2.3. Simplify the problem below and find the answer

$$\frac{\frac{3/4}{9/8}}{\frac{8/7}{4/5}}$$

(4)

2.4. Calculate and express your answers in the simplest form

i. $2\frac{1}{4} + 4\frac{3}{12}$ (3) ii. $2\frac{1}{2} \times 1\frac{3}{4} \div 6\frac{2}{3}$ (3)

[22]

QUESTION 3

3.1 Find answers to the following problems.

i. 1.3 x 0.001 **ii.** 2.001+ 421.195 +0.001318

iii. 5.0012 – 3.1011256 **iv.** 0.0096 ÷0.0003

(10)

3.2. Convert the following decimal numbers to fractions.

i. 0.25 **ii.** 0.00052

iii. 0.12016 **iv.** 3.75 (8)

[18]

QUESTION 4

Simplify (and evaluate where necessary). Give the answer in its simplest form positive exponents.

4.1 $2a^{-5}.a^{-33}.a^{55}$ (4)

4.2 $(4a^{-3}b^{6})^{2}$ (3)

4.3 $\left(\frac{x^{-\frac{7}{4}}y^{2}}{y^{-\frac{1}{2}}x^{\frac{1}{2}}}\right)^{4}$ (4)

4.4 $\left(4t\frac{m^{8}k^{6}}{m^{5}k^{4}}\right)^{3}$ (4)

4.5 $2^{\frac{1}{2}}2^{\frac{5}{2}} + 5\sqrt[4]{81}$ (4)

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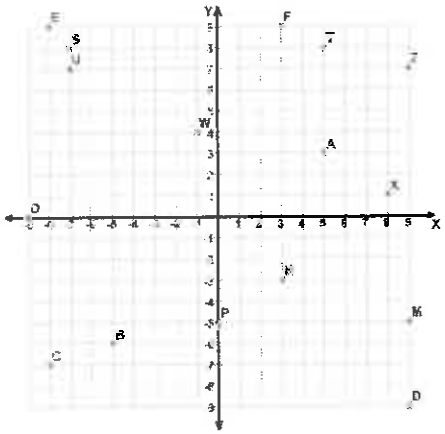
QUESTION 5

Follow the instructions

5.1 Make **M** the subject of the formula in the equation $F = 2MV^{2} - 4\sqrt{S}$ (3)

5.2 Find the value of $\boldsymbol{s = ut + \frac{1}{2}at^{2}}$ if $u = -1;\ t = \frac{1}{4}\ and\ a = 6$ (3)

5.3 Find the value of **v** if $\frac{100}{v^{-4}} = v^{6}$ (3)



5.4 Give the coordinates of points **A, D, S, P, O** (5)

5.5 Calculate the area of a ΔCEF formed by points C, E and F with height EF on base EC. (4)

5.6 Give the coordinates of a point that will use points U, Z, M to form a rectangle? (3)

5.7 Calculate the perimeter as well as the area of this rectangle in **5.6)**? (4)

QUESTION 6

6.1 Define and draw angles that are

i. Compelementry (3)

ii. Supplementary (3)

iii. Congruent (3)

[9]

6.2 Draw the following angles

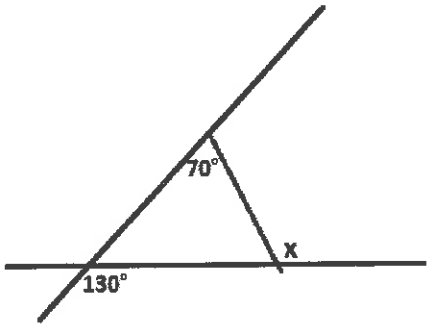
i. Acute angle (2)

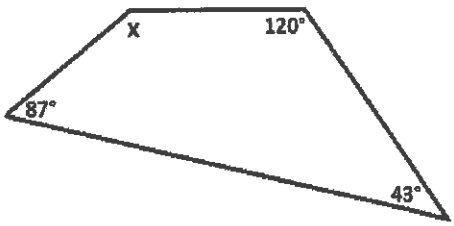
ii. Reflex angle (2)

iii. An obtuse angle (2)

[6]

6.3 Find the values of x in the figures below





[4]

END OF EXAMINATION ----oOo---- **TOTAL: 120**