

**UNIVERSITY OF FORT HARE**  
**Bachelor Of Education (BEd) Year 2**  
**Mathematics Education MEX 212E**  
**June 2023 SUPPLEMENTARY EXAMINATIONS**

**Time: 3 hours**

**Marks: 100**

**This paper consists of 5 pages**

**Internal examiner: Dr N C Kangela**

**Internal examiner: Dr NCP Ngibe**

**Instructions**

**Imiyalelo**

Please read the instructions carefully.

**Nceda ufunde imiyalelo ngononophelo**

You need to answer all the questions.

**Kufuneka uphendile yonke imibuzo**

Calculators are not allowed.

**Izibali-manani azivumelekanga**

This paper is divided into two sections, Section A and Section B.

**Eli phepha lahlulwe laba ngamacandelo amabini, icandelo A kunye necandelo B**

Both Section A and B are compulsory.

**Omabini amacandelo A no-B asisinyanzelo**

## Section A

### Question 1

Choose and write down the correct letter in each of the following cases:

**Khetha kwaye ubhale phantsi unobumba ochanekileyo kwinto nganye kwezi zilandelayo:**

1. Express  $\frac{12}{27}$  in simplest form: (1)

Bonisa  $\frac{12}{27}$  ngeyona ndlela ilula

A.  $\frac{4}{9}$

B.  $\frac{9}{4}$

C.  $\frac{3}{9}$

D.  $\frac{6}{9}$  (1)

2. Which one of the following is **NOT** a factor of 21.  
Yeyiphi kwezi zilandelayo engeyiyo ifactor ka 21?

A. 1

B. 3

C. 9

D. 7

3. A third of a quarter is..... (1)

I third ye kota ngu.....

A.  $\frac{1}{3}$

B.  $\frac{1}{12}$

C.  $\frac{1}{7}$

D.  $\frac{3}{4}$  (1)

4. 12, 18 and 24, are all multiples of:

**12, 18 kunye no 24, ziziphindaphindo zika:**

A. 4

B. 3

C. 9

D. 12

5. Say whether the following statements are true or false. Write T for True and F for False. Give reason for your answer.

Xela ukuba ezi nkcazo zilandelayo ziyinyani okanye aziyonyani. Bhala T ukuchaza eziyinyani no F ukuchaza ezingeyonyani Nika isizathu sempendulo yakho.

Zero is neither an even nor odd number. (2)

**U zero akalilo inani eli even kwaye engelilio eli odd**

6. 7 multiplied by zero is equal to 7. (2)

**7 X 0 ulingana no 7**

7. 364 rounded off to the nearest 10 is 400 (2)  
**364 esondezwe kwelona shumi likufutshane ngu 400**

[10 marks]

## Section B

### Numbers Operations & Relationships

#### Question 1

- a) The first two content areas of Foundation Phase Mathematics according to the Curriculum and the Policy Statement (CAPS) document are Numbers, Operations & Relationships and Patterns, Functions & Algebra. What is the weighting of each content area in Grade 2? (2)

**Imiba emibini youkuqala ngokwe xwebhu lwe CAPS yi Numbers, Operations & Relationships kunye nee Patterns, Functions & Algebra. Ithini i weighting yomba okanye umxholo ngamnye?**

- b) There are three levels through which a child number sense is developed. Name, define and give example for each level. (6)

**Kukho amanqanaba amayi-3anceda ukuphuhlisa ingqiqo yamanani. Chaza inike umzekelo kwinqanaba ngalinye.**

- c) Use a number line to demonstrate subtraction of 5 from 7. (4)

**Sebenzisa umgca-manani ukubonisa ukuthabatha u 5 ku 7**

- d) Round off 47 to the nearest 10 using a number line. (3)

**Sondeza u 47 kwi 10 ekufutshane usebenzisa umgca-manani**

- e) Subtract 49 from 72 using a representation of your choice. (2)

**Thabatha u 49 ku 72 usebenzisa i representation ozikhethela yona.**

[17 marks ]

#### Question 2

- a) Define and provide an example of a unit fraction. (2)

**Chaza kwaye unike nomzekelo weqhezu leyunithi.**

- b) Share 5 pizzas between 3 learners through the aid of a diagram. How many does each learner get? (4)

**Yahlulela abafundi abayi-3 ii pizza eziyi-5 uncedwa ngumzobo. Ufumana ngaphi umfundi ngamnye?**

- c) Key concepts to help FP learners understand fraction. Give three and provide an example for each. (6)

**Imiba engundoqo yokunceda abafundi baqonde kakuhle amaqhezu. Nika imiba ibeyi-3 unike umzekelo yomba ngamnye.**

[12 marks]

### Question 3

- a) Give three addition properties that can be applied when doing addition calculations and provide Foundation phase relevant examples for each. (6)

**Nika iimpawu eziyi-3 zokudibanisa ezinokusetyenziswa xa usenza izibalo zokudibanisa uze unike umzekelo ufanelekileyo eFoundation Phase nge mpawu nganye.**

- b) Foundation Phase mathematics teachers should teach in a way that will help children think mathematically. Kilpatrick proposes five strands of mathematical proficiency that could help mathematics teachers to support mathematical thinking. Discuss five strands of mathematical proficiency and suggest how you could apply their understanding to teach addition and subtraction in Foundation Phase. (10)

**Oo titshala be Foundation Phase kufuneka bafundise ngee ndlela enceda abantwana bacinge ngendlela yobuchule be mathematics. UKilpatrick ukhankanya imicu emihlanu yobuchule be mathematics enganceda ootitshala baxhase ukuphuhla kobuchule be mathematics. Xoxa ngale mici mihlanu kwaye ubonise indlela ongayisebenzisa ngayo ukufundisa ukudibanisa kunye noku thabatha ku Foundation Phase.**

- c) Mary has 5 skirts of different colours and 3 tops of different colours. All the colours match. In how many different ways can she dress? (5)

**UMary une zikayiti eziyi-5 ezimibala yahlukeneyo kwakunye nee top eziyi- 3 eziyimibala eyahlukeneyo. Le mibala iyahambelana. Zingaphi iindlela anokuthi anxibe ngazo?**

- d) Design a Grade 2 mathematics activity that promotes discovery learning. (3)  
**Yila umsebenzi ka Grade 2 mathematics okhuthaza i discovery learning.**

[24 marks]

### Patterns, Functions and Algebra

#### Question 4

- a) Define and give an example of a shrinking pattern. (2)

**Chaza kwaye unike umzekelo we pattern e shrinkayo.**

- b) Name at least two types of patterns taught in Foundation Phase (2)

**Xela iindidi okanye iintlobo eziyi-2 ubuncinane yee pattern ezifundiswa ku Foundation Phase.**

- c) Extend (three terms) and describe a rule:

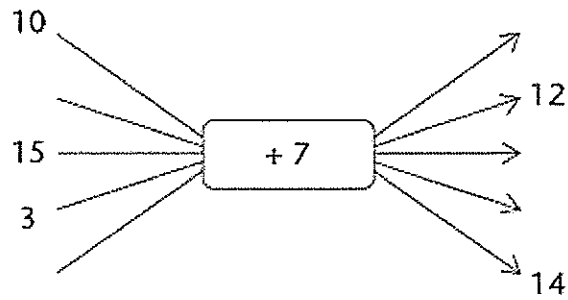
**Qhubekeka kwaye uchaze irule:**

- i) 2, 4, 8, 16, , .... (2)

- ii) 21, 18, 15, 12, (2)

- c) Complete the flow diagram below:

**Gqibezela le flow diagram ingezantsi: (5)**



e) What is the purpose of teaching patterns, functions and algebra in Foundation Phase according to the CAPS document? In your own words discuss why this understanding is important for Foundation Phase learners. (5)

**Yintoni injongo yokufundisa i patterns, functions and algebra ku Foundation Phase ngokwe xwebhu lwe CAPS? Xoxa ucacise ngamazwi akho ukuba kutheni olu lwazi lubalulekile kubafundi be Foundation Phase.**

[18 marks]

**Question 5**

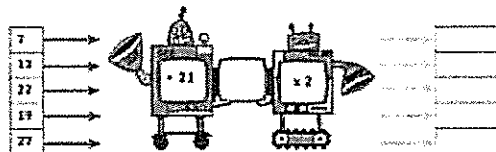
a) Design a word problem and draw a whole part diagram that support learner understanding of additive relations. (8)

**Yila iword problem uze uzobe i whole part diagram enceda abafundi baqonde i additive relations.**

b) Complete the Number Pattern machine:

**Gqibezela i pattern yenani ngoomatshini:**

(5)



c) A growing pattern can be translated in a variety of ways. Give 3 ways in which a growing pattern can be translated. (6)

**I pattern ekhulayo inokuguqulwa okanye iboniswe ngeendela ezahlukeneyo. Nika iindlela eziyi- 3 engaboniswa ngayo i pattern ekhulayo.**

[19 marks]

**TOTAL: 100 marks**