

**UNIVERSITY OF DEVELOPMENT STUDIES**  
**END OF SECOND YEAR (EARLY CHILDHOOD EDUCATION) SECOND SEMESTER**  
**EXAMINATION**

(TRIAL QUESTIONS)

**EGE 208: TEACHING AND ASSESSING NUMERACY FOR EARLY GRADE**  
**EDUCATION**

**JULY/ AUGUST, 2021.**

**This paper consists of TWO sections, A and B.**

**SECTION A**

**Answer All the Questions in this Section**

**For items 1 – 15, each question is followed by options lettered A to D. read each item carefully and CIRCLE the letter that corresponds to correct answer.**

1. A primary class 3 pupil wrote down the numerals below when asked to give the numeral for two hundred and seven. Which of them is correct?  
A. 2007  
B. 270  
C. 207  
D. 27
  
2. To determine the number of objects in a given set, the primary class one child should be able to .....  
A. count the objects  
B. draw the objects  
C. recite the number names in order  
D. write the numerals
  
3. A primary class two pupil identified one of the following as **not** true about even numbers. Which one is that?  
A. Only one even number is prime.  
B. Even numbers have no whole number divisors.  
C. All even numbers are exactly divisible by 2.  
D. All multiples of 2 are even numbers.
  
4. In skip-counting in fives, the number 95 comes after.....  
A. 100

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- B. 94
  - C. 90
  - D. 85
5. In teaching place value of numbers in base ten (10 to 10,000) to primary class 3 pupil, the following manipulatives can be used **except**  
 .....  
 A. abacuses  
 B. bundles of ten sticks and single ones.  
 C. Cuisenaire rods.  
 D. Diene's multi-base Arithmetic Blocks.
6. In the multiplication sentence  $5 \times 7 = 35$ , the number 7 is called the  
 .....  
 A. multiple.  
 B. multiplicand  
 C. multiplier  
 D. product
7. To assist primary one pupils to find the sum of  $4 + 5$  using Cuisenaire rods, the rod representing **5** is.....  
 A. blue  
 B. dark green  
 C. purple  
 D. yellow
8. Which of Diene's base ten pieces would you use to represent the number '3' when helping a primary school pupil to understand the value of the number 385?  
 A. Blocks  
 B. Flats  
 C. Longs  
 D. Units/cubes
9. Which of the following is **true** about prime numbers? All  
 .....  
 A. odd numbers are prime.  
 B. prime numbers are odd.  
 C. prime numbers have no whole number divisors.  
 D. prime numbers have only two natural numbers factors.
10. A pupil traces the side of a square pyramid that is not the base. The shape of the figure obtained is .....  
 A. circle  
 B. rectangle  
 C. square

- D. triangle
11. A procedure in Mathematics in which a number is assigned to an attribute or property of an object is called.....
- A. measurement
  - B. estimate
  - C. counting
  - D. cardinality
12. In measurement, the prefix “milli” preceding units of measure as in millimetres, milligrams, milliliter, etc. refers to.....
- A. one thousand units
  - B. one thousandth of a unit
  - C. one hundredth of a unit
  - D. one hundred units
13. The total mathematical experiences that the early grade learner is expected to go through for that period of time, (4 to 8 years of age), can be referred to as mathematics.....
- A. course manual
  - B. curriculum
  - C. lessons
  - D. syllabus
14. All these are aspects of the Mathematics curriculum except.....
- A. assessment
  - B. materials and resources
  - C. objectives
  - D. topics
15. The following are methods of assessing Kindergarten pupils except.....
- A. class test.
  - B. one-on-one interaction with the children.
  - C. use of rating scales.

D. use of achievement report cards.

**For questions 16 – 20, provide your answer in the space under each question. Each question carries 4 marks.**

16. Briefly describe how you would assist a primary class one pupil to add 3 and 2 using Cuisenaire rods.

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17. Using concrete materials, briefly explain the following multiplication concepts using the idea of multiplication as repeated addition of the same factor.

(i)  $3 \times 5$

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(ii)  $5 \times 3$

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**SECTION B**

1. (a) Give two reasons why it is important for the early grade teacher to prepare lesson notes for his/her lesson.  
  
(b) Describe step by step, using any named concrete materials how you would use to introduce ‘10’ as a unit to early grade learners.  
  
(c) Describe how you would help a primary class1 pupil to solve the problem,  $8 - 5$ , using the following approaches.
  - (i) Take away method.
  - (ii) Using the number line.
  
2. (a) How would you explain to a primary class 2 pupil that in the numeral “58”, the digit ‘5’ is greater than the digit ‘8’ using a named concrete material.  
(b) Describe clearly how you would use concrete materials to assist class 3 pupils to solve the division problem  $12 \div 3$  using the method of:
  - (i) sharing
  - (ii) grouping(c) Briefly describe how you would guide a pupil to divide the number represented by 3 flats, 2 longs and 4 units by 3, (you may ignore diagrams).
  
3. (a) (i) Explain what the following are: **Mathematics Curriculum** and **Mathematics syllabus**.  
(ii) Give **two (2)** differences between the **Mathematics Curriculum** and **Mathematics syllabus**.  
(b) (i) State **two (2)** reasons why Early Grade learners need to be assessed regularly.

(ii) Give **three (3)** expressions a **BS1** pupil can use to explain her observation when she compares the lengths of a blackboard ruler and the leg of her classroom table.

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(c) (i) What are pre-number activities? Give **two (2)** examples.

(ii) Describe how a **BS1** pupil, who cannot count objects conventionally, will be able to determine which of two groups of objects, pebbles and beads, has more members.

### SECTION 'A' RESPONSES

1. C
2. A
3. B
4. C
5. C
6. C
7. D
8. B
9. D
10. D
11. A
12. B
13. B
14. D
15. A

16. Take light green rod and red rod to represent 3 and 2 respectively. Join them end to end. Pick a rod that matches the length of the 2 rods joined. That is yellow representing 5. Therefore,  $3 + 2 = 5$ .

17. (a)  $3 \times 5 = 5 + 5 + 5 = 15$ . Using bottle tops eg. form 3 groups of 5 bottle tops each. Put all together to form one group. These are 15 in all. Therefore,  $3 \times 5 = 15$ .

(b)  $5 \times 3 = 3 + 3 + 3 + 3 + 3 = 15$ . Form 5 group of 3 bottle tops each. Put all together and count. The sum is 15. Therefore,  $5 \times 3 = 15$ .

18. (a) Rectangle, square, kite, rhombus, parallelogram, trapezium, etc.

(b) Both have 6 faces 8 vertices and 12 edges.

Both are in the class of prisms.

Both have flat surfaces only.

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Their faces from quadrilaterals when drawn on a flat surface.

19. The child uses any base ten materials to represent the number 432. For example, Diene's base ten materials: 4 flats, 3 longs, 2 units. 3 longs is equal to 30 units. Therefore, the value of 3 is 30.

20. Using bundles of ten sticks and loose ones. For example, take two bundles and three loose ones to represent 23. Take one bundle and two loose stick for 12. Put the bundles together to get three bundles for 30. Put the loose sticks together to get five sticks for 5. Put all together to obtain three bundles and five sticks, representing  $30 + 5 = 35$ . Therefore,  $23 + 12 = 35$ .

### **SECTION B**



## Question 1

a. Importance of lesson notes to the Early Grade Teacher: (4 marks)

- Serves as a guide to prevent deviation from what is to be learnt
- Serves as record of work for reference
- Helps the teacher choose or state appropriate topic, etc. to treat at a given time.
- Helps the teacher to do research
- Promotes delivery of lesson competently
- Enables to present lessons in a logical and sequential order.
- Serves as a reference for a substituted teacher in the absence of the main teacher.  
etc.

2 marks for each correct two point given.

(b) Introducing '10' as a Unit. (10 marks)

Materials to use

- Bundles of ten sticks or simple ones
- Beads or bottle tops in groups of tens.
- Long <sup>and units</sup> of Dienes' base ten materials

2 mks for any appropriate concrete material used.

Procedure:

Children count 9 sticks and put together. They add 1 stick to the 9 counted, they count them again and obtain 9 and 1. The new number name 'ten' is then introduced. The ten sticks are tied into a bundle and

6 marks for the description of activity.



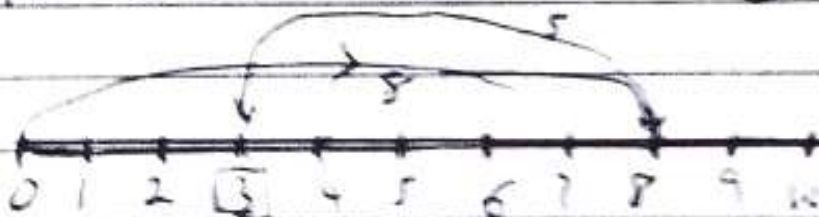
Write on both sides of the paper

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ii) ~~Comparison~~ The number line. (6mk)

Children draw a number line and label the divisions 0 to 10.

Start at 8 and move forward to 3 on the number line. At 8, face the 0 direction and move 5 places towards 0. Where you arrive at on the line gives the answer and that is 3.



Thus,  $8 - 5 = 3$ .

Conclusion  
1mk

Total (25)

Question 2.

(a) Explain that in the numeral 58 the digit 5 is greater than '8' using a named concrete material. (10 marks)

Response

Materials that can be used.

Appropriate - Abacus, bundles of ten sticks & single base ten ones, ~~A~~ longs and units of Diene's base ten materials, e strings of beads in tens and ~~one~~ loose ones.

2 marks

Procedure :

Children use, say, bundles of ten sticks & loose ones.

Descript- way of proced- use - 5 marks

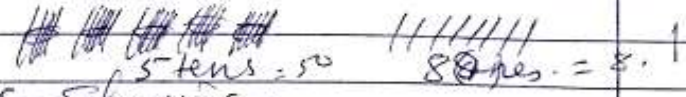
Children pick 5 bundles of 10 sticks ~~to~~ and 8 single sticks to represent 58.

Children note that 1 bundle has 10 single sticks by ~~to~~ untying one and counting.

Concl- use - 2 marks

Therefore 5 bundles will have 50 loose sticks - which are more than 8 single sticks.

Illustration mark



(i) Division as Sharing.

Materials to use : Any concrete objects that can be shared e.g pens, oranges, toffees, bottle tops, etc.

TLMS used - 1 mark

(ii) Division as Sharing:  $12 \div 3$ . (5 marks)

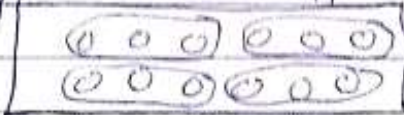
Description : To share 12 mangoes, for instance to 3 children, give ~~to~~ each

**Description**  
3 mks  
Child & mango at a time and in turns until all of the mangoes are finished (given out). Each child counts the number he/she has, i.e., 4 each. 3

**Concl.**  
1mk  
Conclusion: Thus  $12 \div 3 = 4$  1  
Division as grouping (5 mks).

**Turns**  
- 1mk  
- 1mk  
**Descrip.**  
2 mks  
(ii) Pick 12 mangoes. Put them in groups of 3 mangoes each by picking 3 at a time to form a group. Continue the process till all are used up. The number left will be 0. Count the number of equal groups formed and ~~that~~ the result becomes the quotient, i.e. 4 groups.

**Concl.**  
1mk  
Hence  $12 \div 3 = 4$ .

**Illustration**  
1mk  
Diagram to illustrate groupings.  
 4 groups of 3 each.

**C. Dividing 3 flats 2 longs and 4 units by 3. (5 mks)**

**Sharing flats**  
- 1mk  
Step 1 - Share the flats to 3 places. Each will have a flat.

Step 2 - Next share the 2 longs to the 3 places. They will not go round all three places.

**Sharing longs**  
- 1mk  
No group gets a long.  
Step 3. Exchange the 2 longs for 20 units

Write on both sides of the paper

Exchanging  
for 20

and add to the 4 units to have  
24 units all together.

2 long  
units

Next share the 24 units to the  
3 places. Each will have 8 units  
in addition to the one flat.

Sharing units  
1 mk.

Hence the result or quotient  
will be 1 flat, 0 long, and 8 units  
representing 108.

Conclusion  
1 mk.

Thus 3 flats 2 longs and 4 units  
shared divided by 3 will give  
1 flat and 8 units.

$$324 \div 3 = 108.$$

Total 25

3 a. (i). The Mathematics curriculum refers to all the mathematical experiences a child is expected to go through under the guidance of the school during the course of study. It spans for more than a year.

The Mathematics syllabus is a list of all the topics to be covered in Mathematics for a particular class for a period of one year.

(ii). Differences between the Mathematics curriculum and Mathematics syllabus:

Curriculum	syllabus
1. Content is course specific. It is broad.	Content is subject specific. It is not broad but subject-centered.
2. Deals with many subjects at a time	Is based on one subject at a time.
3. Spans for more than one year	Spans for only one year.
4. Covers the entire learning experiences of the pupil in and outside the school, etc.	Deals with topics to be taught and learnt in mathematics in each class every year, etc.

b. (i). Reasons why early grade learners need to be assessed regularly:

- For diagnosis and guidance
- To monitor learners' performance over time.
- To evaluate the effectiveness of one's teaching procedures.
- For classification or placement.
- To stimulate competition and motivation among learners.
- Etc.

(ii). Three expressions a BS 1 pupil can use to tell her observation when she compares then lengths of two objects include:

- The ruler **is as long as** the leg of the table; or
- The ruler **is longer than** the leg of the table; or
- The leg of the table **is shorter than** the ruler.

c. (i). Pre-number activities are activities children are involved in so as to prepare them for an understanding of number and number work. Examples include forming groups of objects, sorting objects, comparing objects, matching of objects, ordering of objects, etc.

(ii). The child can do so by matching or pairing the members of the two groups on one-to-one correspondence until one group has all its members finished and the other still having members. The group with members not paired is taken to have more objects than the one whose members are finished.