

# CYCLE TEST

**TERM 1**

**D9 JE**

**GRADE 8**

MATHEMATICS

# MEMORANDUM

# 2014

# SCHOOL BASED ASSESSMENT TASK

# MARKS: 50

# WEIGHTED MARK: 10

# SUGGESTED TIME: 1 hour

# TERM 1: Investigation

**INVESTIGATION**

**2015**

**MARKS: 50 EXAMINER :**

**TIME: 1 hour MODERATOR:**

**This question paper consists of 7 pages**

|  |
| --- |
| **MATHEMATICS** |

|  |
| --- |
| **INSTRUCTIONS AND INFORMATION**  1. This question paper consists of **SECTION** A and **SECTION B** based on the prescribed content framework in the CAPS document.  **SECTION A: MULTIPLE CHOICE**  QUESTION 1: TEN MULTIPLE CHOICE QUESTIONS BASED ON ALL  TOPICS COVERED  **ANSWER ALL SECTIONS IN THE SPACE PROVIDED**.  **SECTION B: FOUR QUESTIONS BASED ON FIVE TOPICS**  QUESTION 2: WHOLE NUMBER SYSTEMS  QUESTION 3: EXPONENTS  QUESTION 4: ALGEBRAIC EXPRESSIONS  QUESTION 5: FUNCTIONS AND RELATIONSHIPS, NUMERIC AND GEOMETRIC PATTERNS  2. Answer ALL questions in both SECTIONS.  3. A non-programmable calculator may be used unless otherwise stated.  4. In **SECTION A** **circle** the letter of the correct answer; and if you change your decision cross out the circled letter and circle your new choice  5. In **SECTION B** show all necessary steps in your working unless otherwise stated.  6. When answering questions, apply your knowledge, skills and insight.  7. Number the answers correctly according to the numbering system used in this question paper.  8. Write neatly and legibly. |

|  |  |  |  |
| --- | --- | --- | --- |
| **SECTION A** | | |  |
| **Question 1** | | |  |
| 1.1 | Which number is missing  ;  ;  ; … ; | | |
|  | A  B  C  D | 16 | (1) |
| 1.2 | Which statement is incorrect? | | |
|  | A  B  C  D | The only prime factors of 24 are 2 and 3 .  The difference between - 8 and 3 is 11.  All integers are natural numbers.  is a rational number. | (1) |
| 1.3 | R 120 decreased by 5% is equal to | |  |
|  | A  B  C  D | R 95  R100  R114  R18 | (1) |
| 1.4 | Complete the statement  = | | |
|  | A  B  C  D | 11  14  12  10 | (1) |
| 1.5 | The expression  has | | |
|  | A  B  C  D | 4 terms  2 terms  3 terms  5 term | (1) |

|  |  |  |  |
| --- | --- | --- | --- |
| 1.6 | Complete  of  = | | |
|  | A  B  C  D | 3  5  2  12 | (1) |
| 1.7 | How many values of *x* satisfy the equation  5(*x* – 3) = -15 +5*x* | | |
|  | A  B  C  D | 0  1  2  More than 2 | (1) |
| 1.8 | Which of the following expressions is equal to | | |
|  | A  B  C  D |  | (1) |
| 1.9 | If 𝑥=3 and 𝑦=−2, the value of is | | |
|  | A  B  C  D | 10  −48  −96  40 | (1) |
| 1.10 | A watch keeps exact time, but it has only an hour hand. When the hour is is  of the distance between the 4 and the 5, the correct time is: | | |
|  | A  B  C  D | 04:10  04:20  04:22  04:24 | (1) |
|  | | | **[10]** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Question 2** | | | | |
| 2.1 | List 6 factors of this number: | | | |
|  | 2.1.1 | | 84  **1; 2; 3;** 🗸 **6; 12; 14;**🗸 28; 42; 84 | (2) |
| 2.2 | Using prime factors find the lowest common multiple and the highest common factor for set of numbers given: | | | |
|  | 2.2.1 | | 98 and 70 | (3) |
| 2.3 | Divide R300 in the ratio 1 : 2 : 3.  **50🗸 100🗸 150🗸** | | | (3) |
|  |  | | | **[8]** |
| **Question 3** | | | | |
| 3.1 | Write the following in exponential form: | | | |
|  | 3.1.1 | 3 x 3 x 3 x 2 x 2 x 2 x 2  🗸🗸 | | (2) |
| 3.2 | Write the following numbers in correct scientific notation | | | |
|  | 3.2.1 | 464 000  🗸🗸 | | (2) |
|  | 3.2.2 | 0,332  🗸🗸 | | (2) |
|  | | | | **[6]** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Question 4** | | | |
| 4.1 | Simplify the following | | |
|  |  |  | (4) |
| 4.2 |  | If  and  find the value of | |
|  |  |  | (2) |
| 4.3 | For each of the stories given write down an algebraic expression: | | |
|  |  | Tshepi has a bag with 8 apples and 8 bananas. George has one less apple than Tshepi and three more bananas than Tshepi. How many apples and bananas do they have altogether?  Let apple be and bananas be  15 apples and 32 bananas | (4) |
| 4.4 |  | Given the polynomial: | |
|  | 4.4.1 | What is the degree of the polynomial?  **6** | (1) |
|  | 4.4.2 | Give the coefficient of | (1) |
|  | 4.4.3 | How many terms are in the polynomial? | (1) |
|  | 4.4.4 | What is the constant? | (1) |
|  | | | **[14]** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Question 5** | | | |
| 5.1 | Sipho works at a juice bar. He earns R35 an hour.  Complete the table below by filling in the missing values: | |  |
|  | 5.1.1 | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | **Number of**  **Hours Worked** | **1** | **2** | **3** | **7** | **10** | **14** | **20** | | **Amount Earned** | **35** | **70** | **105** | **245** | **350** | **490** | **700** | | (5) |
|  | 5.1.2 | Write down a formula to represent how much money Sipho earns if he works n hours. | (2) |
| 5.2 | Fill in the missing input values in this flow diagram: | | |
|  |  |  | (3) |
| 5.3 | Answer the following questions.    For the above geometric pattern sequence: | | |
|  | 5.3.1 | Draw the 4th pattern. | (1) |
| 5.4 | Complete the following patterns by drawing in the next terms. | | |
|  | 5.4.1 |  | (1) |
|  | | | **[5]** |
| **TOTAL : 50 MARKS** | | | |