SASTRI COLLEGE
DEPARTMENT OF MATHEMATICS
GRADE 8
MARCH CONTROLLED TEST 17.03.2020
MARKS : 50 DURATION : 1 HOUR

INSTRUCTIONS:
1. The use of a calculator is NOT PERMITTED.
2. The paper consists of 2 printed pages and 6 questions.
3. Answer ALL questions. Show all working details.
4. Indicate the initials of your math educator on your answer sheet.

QUESTION 1 [11]

1.1. Some of the factors of 24 are given below.
Answer the questions that follow.

$$F_{24} = \{1; 2; 3; 4; 6; 12; 24\}$$

1.1.1 Provide the missing factor. 1
1.1.2 List the prime factors of 24. 1
1.1.3 Select the composite factor(s) of 24 that are less than 5. 1
1.1.4 Give the first 3 even multiples of 24. 1

1.2. Use PRIME FACTORIZATION to answer the following questions.

1.2.1 Determine the HCF and LCM of 60 and 150. 4

1.2.2 $\sqrt{4624}$ 3

QUESTION 2 [10]

Simplify each of the following:

2.1 $-3 - 4 + 8 - 2$ 1

2.2 $(3 \times 2)^2 - (3 + 2)^2$ 3

2.3 $\dfrac{-2^3}{(-1)^{14}}$ 3

2.4 $\sqrt{\sqrt[3]{8} + 25}$ 3

QUESTION 3 [6]

Study the algebraic expression and answer the questions that follow.

$$-\frac{a}{2} - 14 + 5a^3 - 3a^4 + 4a^2$$

3.1 How many terms are in the above expression? 1
3.2 Write down the constant. 1
3.3 What is the coefficient of a? 1
3.4 Arrange the expression in descending powers of a. 1
3.5 Determine the value of the expression if $a = 0$. 2

QUESTION 4 [4]

Complete the following Input and Output tables.
(Do not redraw the tables)

4.1. 2

INPUT	m	2	6	*(4.1.2)*
OUTPUT	n= 2+ m	4	*(4.1.1)*	20

4.2. 2

INPUT	m	-3	0	*(4.2.2)*
OUTPUT	n= 5 m	-15	*(4.2.1)*	25

QUESTION 5 [12]

SIMPLIFY

5.1 $d + d + d$ 1

5.2 $d \times d \times d$ 1

5.3 $a + 2a - 4a + 6a - a + 3m$ 1

5.4 $\frac{2xy}{2}$ 1

5.5 $(2p \times qr) + (3p \times 3qr)$ 3

5.6 Subtract $-2p - 4m$ ***from*** $-2p + 3m + 4r$ 2

5.7 Add: $-2a + 3\,;\ -4a + b\,;\ -2b - 4$ 3

QUESTION 6 [7]

6.1 Two boxes have a total of 120 sweets. If 15 sweets are removed from the first box and are placed in the second box, the first box has three times as many sweets as the second box. Find the number of sweets that originally were in the first box. 4

6.2 Casper is p years old.
Write a mathematical expression for each of the following:

6.2.1 How old will he be in 2 years time? 1

6.2.2 How old was he last year? 1

6.2.3 How old would he be in p years time? 1

TOTAL:50
☺GOOD LUCK☺