Greenlawns High School

Terminal Examination 2023-24

Subject: Mathematics

Std: VIII

Date: 10/10/2023

Time: 2 Hours

Marks: 80

- Answers to this Paper must be written on the paper provided separately.
- You will not be allowed to write during first 15 minutes. This time is to be spent in reading the question paper.
- The time given at the head of this Paper is the time allowed for writing the answers.
- Attempt **all questions from Section A** and **any four** questions from **Section B**.
- All working, including **rough work, must be clearly shown**, and must be done **on the same sheet** as the rest of the answer.
- Omission of essential working will result in loss of marks.

SECTION A
(Attempt all questions from this Section.)

Q.1 Choose the correct answers to the questions from the given options:(15)

i) $\left(\frac{2}{5}\right)^2 =$ _____.

a) $\frac{4}{5}$
b) $\frac{4}{25}$
c) $\frac{2}{25}$
d) $\frac{4}{10}$

ii) If each exterior angle of a regular polygon is 60°. Find the number of sides in it.

a) 4
b) 12
c) 8
d) 6

iii) Which of the following is not a trinomial?

a) $3x^2 + 4x + 5$
b) $15x^2 - 5x - 3$
c) $16x^2 + 4 \times 5x$
d) $x^2 + 2x + 5$

iv) $\sqrt{21 + \sqrt{19 - \sqrt{9}}} =$ _____.

a) 3
b) 4
c) 5
d) 6

v) If $x^2 - x - 56 = (x + k)(x + 7)$ then $k = ?$

a) 8
b) -8
c) 7
d) -7

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vi) A number when subtracted from 45 results into 10. This statement in the form of an equation is:

a) 45- x = 10   b) x – 45 = 10   c) 45 + x = 10   d) 45 x = 10

vii) $\sqrt{0.00000225}$ = _____.

a) 0.0015   b) 0.015   c) 0.15   d) 1.5

viii) The largest number of three consecutive numbers is x+1. Then the smallest number is _____.

a) x   b) x +1   c) x + 2   d) x -1

ix) $\frac{3}{4}$ mn $\times \frac{-5}{7}$ m³n² = _____.

a) $\frac{8}{11}$ m³n³   b) $\frac{-15}{28}$ m⁴n³   c) $\frac{-2}{11}$ m³n³   d) $\frac{15}{28}$ m⁴n³

x) $\sqrt[3]{-216 \times 1000}$ = _____.

a) -6   b) 60   c) -60   d) 6

xi) $(2x - \frac{1}{x})^2$ = _____.

a) $4x^2 - 4 + \frac{1}{x^2}$ b) $4x^2 + 4 + \frac{1}{x^2}$ c) $4x^2 + \frac{1}{x^2}$ d) $4x^2 - \frac{1}{x^2}$

xii) $(\frac{3}{4})^3$ = _____.

a) $\frac{16}{43}$ b) $\frac{27}{64}$ c) $\frac{9}{16}$ d) $\frac{6}{8}$

xiii) The factors of a² +ab + 7a + 7b are _____.

a) (2a+ b) (a+7)   b) (a+ 2b) (a+7)   c) (a+7) (a+b)   d) (a-7) (2a+b)

xiv) Which of the following statement is not true for a polygon?
a) It's a closed figure, bounded by straight line segments.
b) The smallest number of sides in a polygon is 4.
c) The number of sides in a polygon is always a natural number.
d) A line segment joining any two non-consecutive vertices of a polygon is called its diagonal.

xv) $[(7^8)^0]^7$ = _____.

a) 1   b) 0   c) 56   d) 7

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Question 2 (10)
i) Evaluate: $\left\{\left(\frac{-2}{5}\right)^2\right\}^{-2}$ (3)
ii) Find the square root of 1296 using <u>prime factorisation method</u>. (3)
iii) a) Write the degree of the given polynomial : $x^2y^3 + 3xy + 5x^5y^3$. (1)
    b) Write the co-efficient of $\frac{1}{5}$ xy in $\frac{-3}{5}$ x^4y^7. (1)
    c) Simplify: $3y^2 + 5x^2 + 2xy - 3x^2 + 8xy - 6y^2$. (2)

Question 3 (15)

i) Evaluate using suitable identity: $(x + 2y)(x - 2y)(x^2 + 4y^2)$ (3)

ii) Factorise: $pq^2 - 6q^2 + 2p - 12 - pr + 6r$ (3)

iii) Solve: $\frac{4}{3x+7} = \frac{2}{x}$ (3)

iv) Find the number of sides in a polygon. If the sum of its interior angles is 1080°. (3)

v) Add: $2x - 5y + 3$, $3y + 2 - 3x$, $5 + 4x + y$. (3)

SECTION B
(Attempt <u>any 4</u> questions from this Section.)

Question 4 (10)
i) In quadrilateral PQRS, if $\angle P = 83^O$, $\angle Q = \angle P - 9^O$, $\angle R = 3(x+2)^O$, (3)
$\angle S = 5(2x + 3)^O$. Find the value of x.
ii) Evaluate using a suitable identity: $(96)^2$ (3)
iii) Find the square root of 20.7936 using the <u>division method</u>. Express your
answer correct to one decimal place. (4)

Question 5 (10)
i) Factorise: $8(a+b)^2 + 14(a+b) + 3$. (3)
ii) Multiply: $3x^2 - 7x + 9$ by $6x - 1$. (3)
iii) The interior angles of a pentagon are in ratio 3:4:4:5:2. Find each angle of
the pentagon. (4)

Question 6 (10)
i) A man's age is 32 years and his daughter's age is 5 years. After how many
years will the man's age be 4 times that of his daughter's age? (3)
ii) Divide: $4x^2 - 4xy - 3y^2$ by $2x - 3y$. (3)
iii) Simplify: $\sqrt[4]{a^{16}b^8c^{-4}} \div \frac{a^3}{b^3}$ (4)

Question 7 (10)

i) Find the square of: $8a + \dfrac{1}{4}b$ (2)

ii) Solve: $\dfrac{x+2}{3} - \dfrac{x+1}{6} = \dfrac{x-1}{4}$ (4)

iii) PQ, QR and RS are three consecutive sides of a regular polygon. (4)
If $\angle PRQ = 30^\circ$, Find:
a) Its each interior angle.
b) Its each exterior angle.

Question 8 (10)

i) Factorise: $16(x+2y)^2 - 9(x+y)^2$ (3)

ii) Simplify: $(a + 2b - c)^2$ (3)

iii) If a same number is added to the numbers 6, 9, 12 and 17 the resulting
numbers are in proportion. Find the number. (4)