

Student's Name: _____ Section: _____

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A. Multiple Choice Type Questions

Identify the correct answer.

- On a number line, when we add a positive integer, we
 (a) move to the left (b) move to the right (c) do not move at all (d) none of these.
- When the integers -17303 , 17030 , -1 , 1 , -17330 , 17033 , 0 , -17034 , and 17043 are arranged in descending or ascending order, then which of the following integers always remains in the middle?
 (a) -1 (b) 0 (c) 17033 (d) 1
- Which of the following is true?
 (a) $(-302) + (-203) > (-302) - (-203)$ (b) $(-507) + (-407) < (-507) - (-407)$
 (c) $(-352) + (-352) = (-352) - (-352)$ (d) none of these.
- The value of $15 \div (-3)$ does not lie between
 (a) 0 and 15 (b) 0 and -15 (c) -4 and -10 (d) -7 and 7
- Identify the property reflected in the following:
 $(-8) \times (-11 + 8) = (-8) \times (-11) + (-8) \times 8$
 (a) Associative property (b) Commutative property
 (c) Distributive property (d) Closure property
- The sum of two integers is -42 . If one of them is 15 , the other one is
 (a) -27 (b) 57 (c) -57 (d) 27
- $(-13) \times |-7 + 5|$ is not the same as
 (a) $(-13) \times 2$ (b) $13 \times (-7) + 13 \times 5$
 (c) $(-13) \times (-7) + (-13) \times 5$ (d) -26
- Which of the following does not represent an integer?
 (a) $0 \div |-5 - 7|$ (b) $105 \div (-21)$ (c) $(-9) \div 3 \times 2$ (d) $(-36) \div 72$

B. Assertion and Reason Type Questions

In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

- Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true but Reason (R) is false.
- Assertion (A) is false but Reason (R) is true.

9. Assertion: Value of $-7 \times |-5 + 2|$ is the same as that of $-7 \times |-2 + 5|$.

Reason: Integers hold the distributive property for multiplication over addition.

10. Assertion: If a and b are two integers, then $a \div b$ may not be an integer.

Reason: Closure property does not hold for the division of integers.

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A. Fill in the blanks.

- The property of multiplication states that any number multiplied by one equals the number itself.
- $(-7) + 8 = 8 +$ Additive inverse of
- $(-5) \times (-5) \times (-5) = \dots \times 125$
- A submarine submerges at a rate of 7 m/min. If it descends from 15 m below sea level, it will take minutes to reach 162 m below sea level.
- $11 \times (-5 - 7) = -(11 \times \dots + 11 \times \dots)$

B. Label True or False.

- If x and y are two negative integers such that $x > y$, then $(-x) + (-y)$ is a positive integer.
- The sum of two negative integers always gives a number smaller than both integers.
- We can write a pair of integers whose difference is not an integer.
- $-2 + (3 - 8)$ is the same as $3 - (2 + 8)$
- $|-7| + 3$ is greater than $3 - (-7)$

C. Match the following.

Column I	Column II
1. $0 \div a$	(a) -1
2. $7 + -7 $	(b) 1
3. $-3 \div 3 \times (-1)$	(c) -7
4. Additive inverse of 1	(d) 0
5. $-343 \div 7 \div 7$	(e) 14

D. Do as directed.

- Write a pair of integers whose product is an integer between -13 and -11 , and there are seven integers between them.
- Greek mathematician Archimedes lived between 287 BC and 212 BC and Aristotle lived between 380 BC and 322 BC. Who lived during an earlier period?

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A. Multiple Choice Type Questions

Identify the correct answer.

- Equivalent fraction of $\frac{14}{17}$ with denominator 153 is
 (a) $\frac{126}{153}$ (b) $\frac{111}{153}$ (c) $\frac{153}{126}$ (d) $\frac{152}{153}$
- Reciprocal of the fraction $3\frac{2}{4}$ is
 (a) $3\frac{4}{2}$ (b) $\frac{7}{2}$ (c) $\frac{2}{7}$ (d) $3\frac{5}{9}$
- The product of 5 and $4\frac{3}{4}$ is
 (a) $9\frac{3}{4}$ (b) $4\frac{20}{4}$ (c) $20\frac{3}{4}$ (d) $23\frac{3}{4}$
- The product of 0.07×1.9 is
 (a) 0.133 (b) 0.0133 (c) 1.033 (d) 1.330
- There are 15 balls in a basket in which $\frac{4}{5}$ of the balls are red, $\frac{1}{3}$ non-red balls are black, and the rest are white. How many balls are white?
 (a) 5 (b) 3 (c) 1 (d) 2
- What part of an hour is a second (in terms of decimals)?
 (a) 0.028 (b) 0.00028 (c) 0.28 (d) 0.0028
- Which of the following is correct?
 (a) $\frac{16}{125} = 0.128$ (b) $\frac{16}{125} > 1.28$ (c) $\frac{16}{125} < 0.0128$ (d) $\frac{16}{125} = 1.280$

B. Assertion and Reason Type Questions

In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

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- Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true but Reason (R) is false.
- Assertion (A) is false but Reason (R) is true.

8. **Assertion:** $\frac{3}{7} = \frac{3 \times 2}{7 \times 2} = \frac{3 \times 4}{7 \times 4}$

Reason: Equivalent fractions are obtained by multiplying or dividing the numerator and the denominator of the given fraction by the same non-zero number.

9. **Assertion:** $\frac{4.5}{1000} = 0.045$

Reason: When dividing a decimal number by 10, 100, 1000, etc., we move the decimal point in the quotient as many places to the left as there are zeros in the divisor.

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A. Fill in the blanks.

1. The reciprocal of $\left(1 + \frac{3}{5}\right)$ is
2. Kapil ate $\frac{2}{9}$ part of a pizza while Komal ate $\frac{3}{7}$ of the remaining. Part of the pizza left is
3. While dividing a fraction by another fraction, we multiply the first fraction by the of the other fraction.
4. The product of two distinct improper fractions is than each of the fractions that are multiplied.
5. $\frac{1}{1000} \div \frac{1}{7.5} = \dots\dots\dots$

B. Label True or False.

1. The reciprocal of an improper fraction is a mixed fraction.
2. To multiply a decimal number by 100, we move the decimal point in the number to the left by two places.
3. The reciprocal of -1 is -1
4. $\frac{3}{4} + \frac{1}{4} = \frac{3+1}{4+4}$

C. Match the following.

Column I	Column II
1. Reciprocal of 0.5	(a) $\frac{3}{5}$
2. Standard form of $\frac{254}{381}$	(b) 4
3. Fractional form of 0.6	(c) $\frac{2}{3}$
4. An integer between $\frac{9}{4}$ and $\frac{25}{5}$	(d) 2

D. Do as directed.

1. If 9 is added to the numerator and the denominator of the fraction $\frac{9}{11}$, will the value of the fraction be changed? If so, will the value increase or decrease?
2. Which letter comes $\frac{2}{3}$ of the way among A and I?

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A. Multiple Choice Type Questions

Identify the correct answer.

- Which of the following rational numbers is equivalent to $\frac{-63}{210}$?
 (a) $\frac{189}{-420}$ (b) $\frac{-21}{35}$ (c) $\frac{-126}{630}$ (d) $\frac{3}{-10}$
- Which of the following rational numbers is in standard form?
 (a) $\frac{30}{40}$ (b) $\frac{1}{-2}$ (c) $\frac{5}{2}$ (d) $\frac{-4}{10}$
- The sum of $\frac{-2}{5}$ and $\frac{1}{7}$ is
 (a) $\frac{9}{35}$ (b) $\frac{-9}{35}$ (c) $\frac{19}{35}$ (d) $\frac{-1}{12}$
- Which of the following rational numbers is not equal to its reciprocal?
 (a) 1 (b) -1 (c) -3 (d) $\frac{5}{-5}$
- Which is the greatest number in the following?
 (a) $\frac{-5}{7}$ (b) 0 (c) $\frac{5}{7}$ (d) $\frac{7}{5}$
- The difference between the smallest positive integer and the greatest non-positive rational number is:
 (a) -2 (b) 0 (c) 1 (d) not possible

B. Assertion and Reason Type Questions

In the following questions, a statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option.

- Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true but Reason (R) is false.
- Assertion (A) is false but Reason (R) is true.

7. **Assertion:** The sum of the rational numbers $\frac{3}{13}$ and $\frac{5}{-13}$ is $\frac{-2}{13}$.

Reason: To find the sum of two rational numbers with common denominator, we must add their numerators with their respective signs and then write the result with the common denominator.

8. **Assertion:** $\frac{3}{0}$ is not a rational number.

Reason: A number is called a rational number if it can be expressed in the form of $\frac{p}{q}$, where p and q are integers and $q \neq 0$.

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A. Fill in the blanks.

1. The equivalent rational number of $\frac{-8}{-36}$ with denominator 9 is
2. On a number line, $\frac{3}{5}$ is to the of 2.
3. $\frac{-3}{5}$ is than $\frac{-5}{7}$.
4. $\frac{-2}{9} - \left(\frac{-4}{15}\right) = \dots\dots\dots$
5. The smallest rational numbers among $\frac{-1}{2}$, -1 , $\frac{-3}{5}$ and $\frac{-7}{9}$ is

B. Label True or False.

1. A rational number can be expressed in the form of $\frac{p}{q}$, where p and q are rational numbers and $q \neq 0$.
.....
2. Zero is a rational number, an integer, but not a natural number.
.....
3. The greatest negative integer is the same as the greatest negative rational number.
.....

C. Match the following.

Column I	Column II
1. Additive inverse of $\frac{-3}{6}$	(a) $\frac{-1}{3}$
2. A rational number between $\frac{-5}{9}$ and $\frac{-2}{9}$	(b) $\frac{-5}{13}$
3. A rational number between $\left \frac{-4}{9}\right $ and $\left \frac{-1}{9}\right $	(c) $\frac{1}{3}$
4. Reciprocal of $-2\frac{3}{5}$	(d) $\frac{1}{2}$

D. Do as directed.

1. What should be added to $\frac{-1}{2}$ to obtain the nearest natural number?
2. What should be subtracted from $\frac{-2}{5}$ to obtain the nearest integer?



Marks Obtained: _____

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Multiple Choice Type Questions

Identify the correct answer.

- The cube of the square of $\left(\frac{-3}{4}\right)$ is
 (a) $\frac{-729}{4096}$ (b) $\frac{243}{1024}$ (c) $\frac{-243}{1024}$ (d) $\frac{729}{4096}$
- Which of the following is not equal to $\left(\frac{-3}{5}\right)^3$?
 (a) $\left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right) \times \left(\frac{-3}{5}\right)$ (b) $-\frac{(-3)^3}{5^3}$ (c) $-\frac{3^3}{5^3}$ (d) $\frac{3^3}{(-5)^3}$
- Which of the following is not equal to 1?
 (a) $\frac{0^2 \times 196}{2^0 \times 14^2}$ (b) $\frac{13^3 \times 14^0}{13 \times 169}$ (c) $[(-2)^6 \times (-2)^2]^2 \div 2^{16}$ (d) $[(5^3)^0]^2 \div 3^3$
- Which of the following is a whole number?
 (a) $(-12)^{197}$ (b) $\frac{225 \times 0^2}{25^0 \times (-15)^2}$ (c) $\frac{225 \times 25^0}{5^2 \times 15^2}$ (d) $9^2 \div (3^2 \times 27)$
- $\left(\frac{3}{7}\right)^4 \times \left(\frac{2}{3}\right)^4$ is equal to
 (a) $\left(\frac{6}{21}\right)^4$ (b) $\left(\frac{2}{7}\right)^{16}$ (c) $\left(\frac{2}{7}\right)^8$ (d) $\left(\frac{2}{7}\right)^0$
- In standard form, the number 705210000 is written as $k \times 10^8$, where k is equal to
 (a) 705.221 (b) 7.0521 (c) 70.5221 (d) 7052.21
- Which of the following has the largest value?
 (a) $10^5 \div 0.01$ (b) $0.000001 \div 10^4$ (c) 0.00001×10^5 (d) $\frac{1}{10^5}$
- Which of the following is not true?
 (a) $\frac{1}{10^6} < \frac{1}{10^4}$ (b) $9^3 = 3^6$ (c) $8^3 = 2^3$ (d) $13^3 > 7^4$
- Which power of 27 is equal to 3^{12} ?
 (a) 3 (b) 2 (c) 6 (d) 4
- $13^5 \times 3^5$ cannot be written as
 (a) $(13 \times 3)^5$ (b) $39^5 \div 39^0$ (c) $(13 \times 3)^6 \div (39)$ (d) $(13^5 \times 3^5) \div 3^5$

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A. Fill in the blanks.

1. The value of $2^3 + \frac{1}{2^3}$ is
2. $1000^6 \div 10^{15} = \dots\dots\dots$
3. If $2^6 \times 8^2 = 2^n \times 2^5$, then $n = \dots\dots\dots$
4. 4.307×10^5 in usual form is
5. If $\left[\frac{1}{(-5)^3} \div \frac{1}{5^8} \right] \div p = 1$, then $p = \dots\dots\dots$

B. Label True or False.

1. $\frac{9^5 \times 4^5}{(36)^5 \times 5^3} = \frac{1}{125}$
2. If a is a non-zero integer, then $a^0 = 0^a = 1$
3. $\{(-1)^{142}\}^{137} = -1$
4. $(3 + 5)^2 = 3^2 + 5^2$

C. Match the following.

Column I	Column II
1. $1^0 - 0^1 =$	(a) 2
2. The value of $2^0 + 3^0 + 4^0 - 5^0$	(b) 126
3. $(7 + 9)^2 - (7^2 + 9^2)$	(c) 1.26×10^2
4. Standard form of 126	(d) 1

D. Do as directed.

1. By which number should $\left(\frac{2}{3}\right)^3$ be divided so that the quotient is $\left(\frac{4}{27}\right)^2$?
2. What number should be multiplied by $\frac{1}{(-8)}$ to obtain a product equal to $\frac{1}{10}$?

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A. Multiple Choice Type Questions

Identify the correct answer.

- If there are k books, and each shelf can hold 30 books, the number of shelves required to arrange all the books is
 (a) $30k$ (b) $k \div 30$ (c) $k + 30$ (d) $30 \div k$
- Ananya's age is x years now and her father is 30 years older than her. 5 years ago her father's age was
 (a) $x + 25$ (b) $x + 35$ (c) $x + 30$ (d) $5x + 30$
- If x takes the value 7, then the value of $3x - 9$ is
 (a) 1 (b) -6 (c) 12 (d) 17
- If the perimeter of a regular heptagon is $(y - 6)$ metres, then the length of each of its sides is
 (a) $[(y - 6) + 7]$ m (b) $[(y - 6) \div 7]$ m (c) $7(y - 6)$ m (d) $[(y - 6) \div 6]$ m
- For any two integers p and q , which of the following suggests that multiplication is distributive over subtraction?
 (a) $p(p + q) = p^2 + pq$ (b) $p(p - q) = p^2 - pq$ (c) $pq = qp$ (d) $-p(p + q) = p(q - p)$
- $37 - 37n$ means
 (a) 37 is subtracted n times (b) n is subtracted 37 times
 (c) $37n$ is subtracted from 37 (d) 37 is subtracted from $37n$
- Rahul has a sum of ₹ x . He spent ₹800 on books, ₹600 on a birthday gift, and ₹300 on travel, and received ₹500 as cashback. How much money (in ₹) is left with him?
 (a) $x - 1400$ (b) $x - 1700$ (c) $x + 500$ (d) $x - 1200$
- The expression obtained when p is multiplied by 5 and then subtracted from 7 is
 (a) $5(7 - p)$ (b) $7p - 5$ (c) $5p - 7$ (d) $7 - 5p$
- Identify the monomial out of the following.
 (a) $4pq^2 + 5p - 4p^2q$ (b) $3p^2q - 5p - 3qp^2$ (c) $pq - qr + rp$ (d) $4pq^2 + 3p - pq^2$

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 - Assertion (A) is false but Reason (R) is true.
- Assertion (A):** $(2mn^2 + 5m - 2n^2m)$ is a trinomial.
Reason (R): A polynomial containing three unlike terms is called a trinomial.
 - Assertion (A):** The value of $p^2 - 2p^3 - 2$, for $p = -1$ is greater than zero.
Reason (R): $(-1)^2 - 2(-1)^3 - 2 = 1 > 0$.

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A. Fill in the blanks.

1. The additive inverse of an integer $(-3 + p)$ is
2. In the expression πr , the numerical constant is
3. The speed of a bus is 45 km/hr. The time taken by bus to cover x km distance is
4. The number of unlike terms in a binomial is
5. $p + q - 2p$ is an expression which is neither trinomial nor

B. Label True or False.

1. The sum or difference of two like terms is a like term.
2. The area of a circle $= \pi r^2$, and the algebraic variables of expression πr^2 are π and r
3. If k is a whole number, then $4k + 1$ is an odd number.
4. $(2x - y + 5) - (2x + y)$ is a binomial.
5. In like terms, variables and their powers are the same.

C. Match the following.

Column I	Column II
1. A term of the expression $ax + by + c$	(a) $9y + 5$
2. The sum of $(2y + x)$ and $(-y - x)$	(b) y
3. 5 added to the product of 9 and y	(c) $5y + 9$
4. 9 more than the product of 5 and y	(d) ax
5. A like term of $5xy$	(e) $-xy$

D. Do as directed.

1. From the sum of $a^2 + b^2 + 4$, $b^2 - a^2 - 4$ and $4 - a^2 - b^2$ subtract $-(4 - a^2)$.
2. What should be added to $p^3 + 4p^2q + 4q^2p + q^3$ to get $p^3 - q^3$?