FRACTIONS

SYNOPSIS - 1

1. The numbers such as one-half, two thirds, one quarter, three-fifths and four-sevenths are called **fractional numbers.**

   e.g : $\frac{1}{2}, \frac{2}{3}, \frac{1}{4}, \frac{3}{5}, \frac{4}{7}$.

2. The numbers of the form $\frac{a}{b}$ where a and b are whole numbers and $b \neq 0$ are called **fractions.**

3. a is called the numerator and b is called the denominator of the fraction $\frac{a}{b}$.

4. Two or more fractions representing the same part of a whole are called **equivalent fractions.**

   Eg: $\frac{3}{5}, \frac{15}{25}$ are equivalent fractions.

5. To test whether two fractions $\frac{a}{b}$ and $\frac{c}{d}$ are equivalent or not cross multiply $\frac{a}{b}$ and $\frac{c}{d}$. If the two cross products are equal i.e., ad = bc, then they are equivalent.

6. If the numerator and denominator of a fraction have no common factor, then the fraction is said to be in its lowest terms or in simplest form e.g. : $\frac{9}{12} = \frac{3}{4}$.

   In other words, a fraction is said to be in its lowest terms or in simplest form, if HCF of its numerator and denominator is 1.

7. A fraction in simplest form is called an **irreducible fraction.**

8. Fractions with the same denominator are called like fractions. e.g : $\frac{4}{7}, \frac{3}{7}, \frac{5}{7}$.

9. Fractions with different denominators are called unlike fractions e.g : $\frac{1}{2}, \frac{3}{5}$.

10. Fractions with 1 as numerator are known as unit fractions e.g : $\frac{1}{3}, \frac{1}{7}$.

11. A fraction whose numerator is less than its denominator is called a proper fraction e.g : $\frac{7}{9}$.

12. A fraction whose numerator is greater than its denominator is called an improper fraction.

e.g : $\frac{5}{3}$.

13. A combination of a whole number and a proper fraction is called a mixed numeral

e.g : $2\frac{1}{5}$.

14. Of two fractions with same denominator, the one with greater numerator is greater then the other.

e.g : $\frac{4}{7} > \frac{2}{7}$.

15. Of two fractions with same numerator, the one with smaller denominator is greater then the other.

e.g : $\frac{9}{13} < \frac{9}{12}$ since 13 > 12.

16. Addition of like fractions = $\frac{\text{sum of their numerators}}{\text{common denominator}}$.

e.g : $\frac{4}{7}+\frac{2}{7}=\frac{4+2}{7}=\frac{6}{7}$

17. Subtraction of like fractions = $\frac{\text{Difference of their numerators}}{\text{Common denominator}}$

e.g : $\frac{5}{8}-\frac{3}{8}=\frac{2}{8}$

18. Addition and subtraction of unlike fractions
We convert the given fractions into like fractions and then add or subtract.

e.g : $\frac{2}{5}+\frac{3}{7}=\frac{2\times7}{5\times7}+\frac{3\times5}{7\times5}=\frac{14+15}{35}=\frac{29}{35}$

e.g : $\frac{5}{6}-\frac{3}{4}=\frac{5\times2}{6\times2}-\frac{3\times3}{4\times3}=\frac{10-9}{12}=\frac{1}{12}$

20. Reciprocal of a fraction :
If two fractions are such that their product is 1 then each one is called the reciprocal of the other.

e.g : $\frac{5}{6}\times\frac{6}{5}=1 \Rightarrow \frac{6}{5}$ is reciprocal of $\frac{5}{6}$.

22. Numerical expression : A combination of numbers connected by one or more of the symbols +, –, ×, ÷ and 'of' is called a numerical expression.
On performing these operations involved in an expression we obtain a value of the expression. Performing those operations and getting this value is known as simplification of the expression.

For simplification of an expression we must perform these operations strictly in the following order.

Bracket, **O**f, **D**ivision, **M**ultiplication, **A**ddition, **S**ubtraction (**BODMAS**).

21. While simplifying a numerical expression containing fractions, we must perform the various operations strictly in the following order.
    a) Bracket b) Of c) Division
    d) Multiplication e) Addition f) Subtraction
    We must remember the word BODMAS.
    B, O, D, M, A, S stand for Bracket, Of, Division, Multiplication, Addition and Subtraction.
22. A combination of a number connected by one or more of the symbols +, –, ÷ and of is called a numerical expression.
23. Performing these operations and getting the value is known as simplification of the expression.

I. Decimal Fractions: Fractions in which denominators are powers of 10 are known as decimal fractions.

Thus, $\frac{1}{10}$ = 1 tenth = .1 ; $\frac{1}{100}$ = 1 hundredth = .01 ;

$\frac{99}{100} = 99$ hundredths = .99; $\frac{7}{1000} = 7$ thousandths = 0.007, etc.

II. Conversion of a Decimal Into Vulgar Fraction: Put 1 in the denominator under the decimal point and annex with it as many zeros as is the number of digits after the decimal point. Now, remove the decimal point and reduce the fraction to its lowest terms.

Thus, 0.25 = $\frac{25}{100} = \frac{1}{4}$; $2.008 = \frac{2008}{1000} = \frac{251}{125}$

III. 1. Annexing zeros to the extreme right of a decimal fraction does not change its value. Thus, 0.8 = 0.80 = 0.800, etc.

2. If numerator and denominator of a fraction contain the same number of decimal places, then we remove the decimal sign.

Thus, $\frac{1.84}{2.99} = \frac{184}{299} = \frac{8}{13}$; $\frac{0.365}{0.584} = \frac{365}{584} = \frac{5}{8}$

IV. Operations on Decimal Fractions:

1. Addition and Subtraction of Decimal Fractions: The given numbers are so placed under each other that the decimal points lie in one column. The numbers so arranged can now be added or subtracted in the usual way.
2. Multiplication of a Decimal Fraction By a Power of 10 :Shift the decimal point to the right by as many places as is the power of 10.
   Thus, 5.9632 × 100 = 596.32; 0.073 × 10000 = 730.
3. Multiplication of Decimal Fractions: Multiply the given numbers considering them without the decimal point. Now, in the product, the decimal point is marked off to obtain as many places of decimal as is

the sum of the number of decimal places in the given numbers.

Suppose we have to find the product (.2 × .02 × .002).

Now, 2 × 2 × 2 = 8. Sum of decimal places = 1 + 2 + 3 = 6.(.2 × .02 × .002)

$\therefore$ .2 × .02 × .002 = .000008.

4. Dividing a Decimal Fraction By a Counting Number: Divide the given number without considering the decimal point, by the given counting number. Now, in the quotient, put the decimal point to give as many places of decimal as there are in the dividend.

   Suppose we have to find the quotient ($0.0204 \div 17$). Now, 204 ÷ 17 = 12. Dividend contains 4 places of decimal. So, $0.0204 \div 17 = 0.0012$.

5. Dividing a Decimal Fraction By a Decimal Fraction: Multiply both the dividend and the divisor by a suitable power of 10 to make divisor a whole number.

   Now, proceed as above.

Thus, $\frac{0.00066}{0.11} = \frac{0.00066 \times 100}{0.11 \times 100} = \frac{0.066}{11} = 0.006$

V. Comparison of Fractions: Suppose some fractions are to be arranged in ascending or descending order of magnitude. Then, convert each one of the given fractions in the decimal form, and arrange them accordingly.

Suppose, we have to arrange the fractions $\frac{3}{5}, \frac{6}{7}$ and $\frac{7}{9}$ in descending order.

Now, $\frac{3}{5} = 0.6$, $\frac{6}{7} = 0.857...$, $\frac{7}{9} = 0.777...$

Since 0.857... > 0.777 ... > 0.6, so $\frac{6}{7} > \frac{7}{9} > \frac{3}{5}$.

WORK SHEET - 1

Single Answer Type

1. The fraction is of the form $\frac{a}{b}$ where a, b are _____

   1) Natural numbers 2) Whole numbers
   3) Integers 4) Negative integers

2. In a fraction $\frac{a}{b}$, b is called

   1) Numerator 2) Denominator 3) Decimal 4) Fraction

3. Fractions whose denominators are 10, 100, 1000 ... etc are called

   1) Vulgar fractions 2) Improper fractions
   3) Proper fractions 4) Decimal fractions

4. If the numerator of a fraction is less than its denominator, then the fraction is

   1) Proper fraction 2) Improper fraction
   3) Vulgar fraction 4) Decimal fraction

5. A fraction which can be expressed as the sum of a natural number and a proper fraction is called _____
   1) Complex fraction 2) Simple fraction
   3) Mixed fraction 4) Proper fraction

6. Equivalent fraction of $\frac{3}{4}$ is
   1) $\frac{15}{16}$ 2) $\frac{12}{20}$ 3) $\frac{21}{28}$ 4) $\frac{18}{28}$

7. Fractions having the same denominators are called _____
   1) Simple fractions 2) Same fractions
   3) Like fractions 4) Proper fractions

8 If both numerator and denominator of a fraction are multiplied by the same positive constant, then the fraction obtained is called
   1) Equal fraction 2) Equivalent fraction
   3) Decimal fraction 4) Square fraction

9. Equivalent fraction of $\frac{36}{45}$ with numerator 12 is
   1) 12/45 2) 12/36 3) 12/144 4) 12/15

10. All mixed fractions are _____
   1) Simple fractions 2) Proper fractions
   3) Improper fractions 4) Decimal fractions

11. While converting the unlike fractions into like fractions we find
   1) H.C.F of denominators 2) Sum of denominators
   3) L.C.M of numerators 4) L.C.M. of denominators

12. A fraction $\frac{a}{b}$ in which H.C.F of a and b is 1, then the fraction is
   1) Composite fraction 2) Irreducible fraction
   3) Reducible fraction 4) Complex fraction

Multi Answer Type

13. Which among the following is mixed as well as proper fraction
   1) $2\frac{3}{4}$ 2) $\frac{12}{35}$ 3) Does not exist 4) None

14. Which of the following fractions are less than $\frac{5}{9}$ is
   1) $\frac{11}{18}$ 2) $\frac{13}{24}$ 3) $\frac{17}{36}$ 4) $\frac{5}{8}$

Reasoning Answer Type

15. *Statement I :* Fractions having the same denominators but different numerators are unlike fractions

Statement II : $\frac{2}{3},\frac{3}{4},\frac{5}{8},\frac{6}{11}$ are unlike fractions.

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

16. *Statement I :* The ascending of $\frac{8}{11},\frac{12}{17},\frac{16}{23}$ and $\frac{24}{31}$ is $\frac{16}{23}<\frac{12}{17}<\frac{8}{11}<\frac{24}{31}$.

Statement II : If two fractions have the same denominator, then the fraction which greater numerator is greater.

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

Comprehension Type

Writeup-1:

To Convert unlike fractions in to like fractions

Step–1: Find the LCM of denominators of all fractions

Step–2: Change each given fraction into an equivalent fraction having denominator as the L.C.M. of Denominators of the given fractions.

17. The resultant after converting $\frac{2}{3}$ and $\frac{5}{6}$ into like fractions is

1) $\frac{6}{9}$ and $\frac{15}{18}$ 2) $\frac{12}{18}$ and $\frac{15}{18}$ 3) $\frac{6}{9}$ and $\frac{10}{9}$ 4) $\frac{30}{36}$ and $\frac{33}{36}$

18. The resultant after converting $\frac{2}{5},\frac{3}{10},\frac{16}{35}$ into like fractions is

1) $\frac{14}{40},\frac{12}{40},\frac{20}{40}$ 2) $\frac{12}{70},\frac{15}{70},\frac{32}{70}$ 3) $\frac{28}{70},\frac{21}{70},\frac{10}{70}$ 4) $\frac{28}{70},\frac{21}{70},\frac{32}{70}$

19. The resultant after converting $\frac{1}{2},\frac{2}{3},\frac{3}{4},\frac{4}{5}$ into like fractions is

1) $\frac{2}{30},\frac{4}{30},\frac{6}{30},\frac{8}{30}$ 2) $\frac{30}{60},\frac{40}{60},\frac{45}{60},\frac{48}{60}$ 3) $\frac{20}{40},\frac{18}{40},\frac{13}{40},\frac{20}{40}$ 4) $\frac{7}{40},\frac{14}{40},\frac{21}{40},\frac{28}{40}$

Writeup-2:

If $\frac{a}{b}, \frac{c}{d}$ are two fractions then the fraction $\frac{a+c}{b+d}$ lies between $\frac{a}{b}$ and $\frac{c}{d}$.

20. The two fractions between $\frac{3}{5}$ and $\frac{5}{7}$ are .

1) $\frac{3}{2}, \frac{8}{5}$ 2) $\frac{3}{8}, \frac{2}{5}$ 3) $\frac{2}{3}, \frac{5}{8}$ 4) $\frac{1}{4}, \frac{5}{3}$

21. The two fractions between $\frac{8}{11}$ and $\frac{11}{16}$ are

1) $\frac{19}{27}, \frac{27}{38}$ 2) $\frac{34}{22}, \frac{22}{34}$ 3) $\frac{19}{11}, \frac{8}{27}$ 4) $\frac{8}{11}, \frac{19}{27}$

22. The two fractions between $\frac{7}{9}$ and $\frac{13}{15}$ are

1) $\frac{33}{24}, \frac{42}{34}, \frac{24}{34}$ 2) $\frac{20}{24}, \frac{27}{33}, \frac{34}{42}$ 3) $\frac{24}{42}, \frac{27}{24}, \frac{33}{34}$ 4) $\frac{27}{42}, \frac{20}{33}, \frac{34}{24}$

Matrix Matching Type

23.

Column-I	Column-II
a) $\frac{2}{10}, \frac{3}{100}, \frac{4}{1000}, \frac{5}{10000}$ are	1) Irreducible fractions
b) $\frac{2010}{2004}, \frac{15}{19}, \frac{2}{3}$ are	2) Like fractions
c) $\frac{1}{2010}, \frac{7}{2010}, \frac{78}{2010}, \frac{1729}{2010}$ are	3) Unlike fractions
d) $\frac{3}{4}, \frac{5}{7}, \frac{6}{12}, \frac{21}{109}$ are	4) Decimal fractions
	5) Vulgar fractions

24.

Column-I	Column-II
a) If $\frac{5}{1000}$ is	1) Vulgar fraction
b) If $\frac{17}{8}$ is	2) Mixed fraction
c) If $2\frac{3}{5}$ is	3) Decimal fraction
d) If $\frac{4}{7}$	4) Improper fraction
	5) Proper fraction

Integer Answer Type

25. If $\frac{78}{9}$ is converted into mixed fraction then its numerator is _____.

WORK SHEET - 2

Single Answer Type

1. Improper fraction among the following is

1) $\frac{23}{23}$ 2) $\frac{18}{27}$ 3) $\frac{4}{9}$ 4) $\frac{9}{146}$

2. Mixed fractional form of $\frac{126}{17}$ is

1) $4\frac{7}{17}$ 2) $5\frac{6}{17}$ 3) $5\frac{7}{17}$ 4) $7\frac{7}{17}$

3. Equivalent fraction of $\frac{7}{8}$ with numerator 56 is

1) $\frac{56}{32}$ 2) $\frac{56}{40}$ 3) $\frac{56}{48}$ 4) $\frac{56}{64}$

4. The Lesser fraction among the following is

1) $\frac{5}{12}$ 2) $\frac{7}{12}$ 3) $\frac{8}{12}$ 4) $\frac{11}{12}$

5. Fractions whose denominator is a whole number other than 10, 100, 1000 , ... are

1) Decimal fractions 2) Mixed fractions
3) Complex fractions 4) Vulgar fractions

6. 40 paise as a fraction of Rs.5 is

1) $\frac{1}{25}$ 2) $\frac{2}{75}$ 3) $\frac{1}{75}$ 4) $\frac{2}{25}$

7. Which of the following is not equivalent to $\frac{6}{11}$?

1) $\frac{18}{22}$ 2) $\frac{12}{22}$ 3) $\frac{30}{55}$ 4) $\frac{72}{132}$

8. Which of the following is correct ?

1) $\frac{2}{5}>\frac{3}{7}$ 2) $\frac{4}{7}<\frac{5}{6}$ 3) $\frac{7}{12}<\frac{9}{14}$ 4) None

9. Which of the following is decimal fraction ?

1) $\frac{2.3}{10}$ 2) $\frac{2/3}{4/5}$ 3) $\frac{100}{7}$ 4) $\frac{23}{1000}$

10. Which of the following is complex fraction ?

1) $2\frac{3}{4}$ 2) $\frac{21}{109}$ 3) $\frac{0}{25}$ 4) $\frac{5/6}{7/8}$

11. The simplest form of $\frac{68}{85}$ is _____

1)5/4 2) 4/5 3) 2/3 4) 3/2

12. Which of the following is not false?

1) $\frac{3}{4}<\frac{5}{7}$ 2) $\frac{7}{8}>\frac{8}{9}$ 3) $\frac{4}{5}=\frac{12}{15}$ 4) $\frac{23}{45}=\frac{46}{80}$

13. The descending order of fractions $\frac{2}{5},\frac{7}{10},\frac{11}{15}$ is

1) $\frac{7}{20}>\frac{2}{5}>\frac{11}{15}$ 2) $\frac{2}{5}>\frac{7}{20}>\frac{11}{15}$ 3) $\frac{2}{5}>\frac{11}{15}>\frac{7}{20}$ 4) $\frac{11}{15}>\frac{7}{20}>\frac{2}{5}$

Multi Answer Type

14. Which of the following is/are equivalent to $\frac{7}{13}$?

1) $\frac{91}{65}$ 2) $\frac{63}{65}$ 3) $\frac{133}{247}$ 4) $\frac{70}{130}$

15. Which of the following is/are true

1) $\frac{3}{5}<\frac{5}{8}$ 2) $\frac{7}{10}<\frac{5}{7}$ 3) $\frac{2}{3}<\frac{7}{10}$ 4) $\frac{3}{5}>\frac{5}{7}$

Reasoning Answer Type

16. *Statement I :* If the numerator and denominator of a fraction are both multiplied by the same non-zero number, then its value will change.

Statement II : $\frac{7}{13}$ and $\frac{21}{39}$ are equivalent fractions.

1) Both Statements are true, Statement II is the correct explanation of Statement I.

2) Both Statements are true, Statement II is not correct explanation of Statement I.

3) Statement I is true, Statement II is false.

4) Statement I is false, Statement II is true.

17. *Statement I :* The resultant after converting $\frac{3}{6}$ and $\frac{4}{5}$ into like fractions is $\frac{15}{30}$ and $\frac{24}{30}$.

*Statement II :*By making denominators equal we can convert unlike fractions into like fractions fractions.

1) Both Statements are true, Statement II is the correct explanation of Statement I.

2) Both Statements are true, Statement II is not correct explanation of Statement I.

3) Statement I is true, Statement II is false.

4) Statement I is false, Statement II is true.

Comprehension Type

Writeup-1:

If $\frac{a}{b}$ and $\frac{c}{d}$ are any two fractions, then the fraction in between $\frac{a}{b}$ and $\frac{c}{d}$ is $\frac{a+c}{b+d}$ i.e., $\frac{a}{b}<\frac{a+c}{b+d}<\frac{c}{d}$.

18. One fraction between $\frac{2}{3}$ and $\frac{3}{4}$ is

1) $\frac{1}{7}$ 2) $\frac{5}{6}$ 3) $\frac{5}{7}$ 4) $\frac{1}{7}$

19. Two fraction between $\frac{1}{2}$ and $\frac{4}{5}$ among the following are

1) $\frac{2}{3}$ and $\frac{5}{7}$ 2) $\frac{2}{3}$ and $\frac{9}{5}$ 3) $\frac{3}{7}$ and $\frac{7}{3}$ 4) $\frac{5}{3}$ and $\frac{9}{7}$

20. After inserting three fractions in between $\frac{1}{2}$ and $\frac{2}{3}$ the least one is

1) $\frac{3}{5}$ 2) $\frac{4}{7}$ 3) $\frac{5}{8}$ 4) $\frac{4}{3}$

Writeup-2:

In a class of strength 60, 20 students like Mathematic. 15 students like Physics. 25 students like Chemistry.

21. The fraction of students those who like Mathematics is

1) $\frac{1}{2}$ 2) $\frac{1}{3}$ 3) $\frac{1}{4}$ 4) $\frac{12}{5}$

22. The fraction of students those who like Physics is

1) $\frac{1}{2}$ 2) $\frac{1}{3}$ 3) $\frac{1}{4}$ 4) $\frac{12}{5}$

23. The fraction of students those who like Chemistry is

1) 1/2 2) 1/3 3) 1/4 4) 5/12

Matrix Matching Type

24.

Column-I	Column-II
a) 35 paise as fraction of Rs. 1	1) 7/20
b) 75 cm as fraction of 2 meters	2) 3/8
c) 16 hours as a fraction of 1 day	3) $\frac{2}{3}$
d) 250 gm as a fraction of 3kg	4) $\frac{1}{12}$
	5) $\frac{4}{15}$

25.

Column-I	Column-II
a) What fractions is $6\frac{1}{8}$ of $15\frac{3}{4}$	1) Reducible fraction
b) $\frac{36}{48}$ is	2) Irreducible fraction
c) $\frac{47}{31}$ is	3) Like fractions
d) $\frac{7\frac{1}{2}}{6\frac{1}{3}}$ is	4) Complex fraction
	5) 7/18

Integer Answer Type

26. If we write $\frac{7}{20}$ as a fraction whose numerator is 21, then its denominator is _____.

WORK SHEET - 3

Single Answer Type

1. Which of the following is the smallest fraction ?

   1) $\frac{11}{17}$ 2) $\frac{11}{22}$ 3) $\frac{11}{18}$ 4) $\frac{11}{15}$

2. What is equivalent fraction of $\frac{5}{7}$?

   1) $\frac{10}{11}$ 2) $\frac{25}{35}$ 3) $\frac{20}{25}$ 4) $\frac{50}{75}$

3. Which of the following is a proper fraction ?

   1) $\frac{2}{8}$ 2) $\frac{4}{2}$ 3) $6\frac{2}{8}$ 4) $\frac{10}{3}$

4. Which is not an equivalent fraction of $\frac{39}{195}$

   1) 13/65 2) 3/15 3) 4/10 4) 1/5

5. If $\frac{3}{4} = \frac{x}{48}$ then x =

   1)32 2)36 3)38 4)30

6. How many times should $\frac{1}{7}$ be added to $\frac{1}{7}$ so that the answer will be 2

   1)7 2)10 3)13 4)20

7. If $\frac{4}{7} + \frac{2}{7} = \frac{y}{21}$, then the value of y is

   1)18 2)6 3)20 4)2

8. Which of the following is true ?

   1) $\frac{4}{7} = \frac{12}{21}$ 2) $\frac{3}{5} = \frac{21}{35}$ 3) $\frac{4}{9} = \frac{9}{14}$ 4) Both 1 and 2

9. If $2\frac{1}{2} + 3\frac{1}{2} + 4\frac{1}{2} = x$, then $x - 5\frac{1}{2}$ =

   1)6 2)5 3)4 4)8

10. If $P = A' B$ and $Q = C' D$ where 2A=3B = 4C = 6D = 24 then $\frac{P}{Q' 5}$ is

    1) $\frac{2}{5}$ 2) $\frac{3}{5}$ 3) $\frac{4}{5}$ 4) $\frac{1}{5}$

11. If $\frac{x+13}{y-14}=\frac{20}{31}$ then $\frac{x+1}{y+3}$ is

1) $\frac{1}{8}$ 2) $\frac{1}{4}$ 3) $\frac{1}{2}$ 4) $\frac{1}{6}$

Multi Answer Type

12. Which of the following is a mixed fraction?

1) $\frac{3}{8}$ 2) $1\frac{1}{9}$ 3) $\frac{4}{10}$ 4) $3\frac{1}{4}$

13. If $2\frac{1}{6}+3\frac{5}{6}+10\frac{1}{6}=y$ then $y+4\frac{1}{6}$

1) $20\frac{2}{6}$ 2) $20\frac{2}{3}$ 3) $20\frac{1}{3}$ 4) Both 1 and 3

14. If $\frac{42}{3}$ is a _____fraction

1) Proper 2) Improper 3) Mixed 4) None

Reasoning Answer Type

15. *Statement I* : A boy wrote a fraction $\frac{6}{2}$ instead of $\frac{2}{6}$ he made a mistake of $\frac{8}{3}$

Statement II: If a>b , then $\frac{a}{b}-\frac{b}{a}=\frac{a'a-b'b}{a'b}$

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

16. *Statement I* : If $x=\frac{7}{9}-\frac{4}{9}$, $y=\frac{5}{9}-\frac{3}{9}$ and $z=\frac{8}{9}-\frac{1}{9}$,then $x+y+z=\frac{5}{3}$.

Statement II: If $\frac{a}{p},\frac{b}{p},\frac{c}{p}$ are proper fraction, then the sum of the fractions is $\frac{a+b+c}{p}$.

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

17. *Statement I* : If $\frac{x}{5}=\frac{90}{150}=\frac{135}{y}$ then x = 3 and y = 225

Statement II: Two or more fractions are called equivalent fractions if they are equal in value .

1) Both Statements are true, Statement II is the correct explanation of Statement I.

2) Both Statements are true, Statement II is not correct explanation of Statement I.

3) Statement I is true, Statement II is false.

4) Statement I is false, Statement II is true.

Comprehension Type

Writeup-1:

$\frac{10}{x},\frac{6}{x},\frac{8}{x}$ are fractions

18. If $\frac{10}{x}+\frac{6}{x}+\frac{8}{x}=2$,then the value of x is

1)16 2)12 3)6 4)3

19. If $\frac{10}{x}+\frac{16}{x}$ is simplified, then the answer is

1) $2\frac{2}{6}$ 2) $2\frac{1}{6}$ 3) $2\frac{3}{6}$ 4) $2\frac{4}{6}$

20. If $\left(\frac{10}{x}-\frac{8}{x}\right)+\frac{1}{6}$ simplified, then the answer is

1) $\frac{1}{2}$ 2) $\frac{1}{4}$ 3) $\frac{1}{3}$ 4) $\frac{1}{8}$

Writeup-2:

$\frac{5}{10},\frac{m-2}{30}$ are two fractions

21. If $\frac{5}{10}=\frac{m-2}{30}$,then the value of m is

1)15 2)17 3)20 4)7

22. The mixed fraction of $\frac{2\times m+3}{19}$ is

1) $1\frac{17}{19}$ 2) $1\frac{16}{14}$ 3) $1\frac{18}{14}$ 4) $1\frac{18}{19}$

23. If $\frac{m-10}{21}$ is simplified, then the proper fraction is

1) $\frac{1}{3}$ 2) $\frac{1}{7}$ 3) $\frac{1}{5}$ 4) $\frac{1}{4}$

Matrix Matching Type

24.

Column-I	Column-II
a) $\frac{3}{5},\frac{2}{5}$ are	1) Mixed Fractions
b) $\frac{3}{4},\frac{2}{5}$ are	2) Equivalent Fraction of $\frac{5}{3}$
c) $\frac{10}{6},\frac{15}{9}$ are	3) Unlike Fractions
d) $4\frac{3}{7},2\frac{7}{9}$ are	4) Like Fractions
	5) Improper Fractions

Integer Answer Type

25. If $\frac{5}{9}-\frac{1}{9}=x$ then $x+\frac{5}{9}$ =_____

26. If the numerator of a fraction is 4th prime number then the numerator is_____

WORK SHEET - 4

Single Answer Type

1. The sum of three sides of a triangle is $16\frac{3}{5}$ cm. If two of its sides measure $5\frac{7}{10}$ cm and $6\frac{3}{4}$ cm respectively, then the length of the third side is

1) $4\frac{3}{20}$ cm 2) $2\frac{5}{17}$ cm 3) $3\frac{7}{20}$ cm 4) $4\frac{3}{5}$ cm

2. The result obtained after subtracting the sum of $9\frac{3}{4}$ and $5\frac{5}{6}$ from the sum of $11\frac{2}{5}$ and $7\frac{1}{3}$ is

1) $4\frac{3}{20}$ 2) $3\frac{3}{20}$ 3) $3\frac{5}{20}$ 4) $3\frac{7}{20}$

3. If $\frac{5}{8}$ of a number is 75, then the number is

1) 100 2) 116 3) 120 4) 125

4. $2\frac{5}{14} \div 9\frac{3}{7}$ =

1) 1/2 2) 1/5 3) 1/3 4) 1/4

5. If $\frac{3}{4}$ of a number exceeds its $\frac{2}{3}$ by 6, then the number is

1) 60 2) 56 3) 72 4) 70

6. x and y are reciprocals of $\frac{5}{6}$ and $\frac{3}{4}$. If $x \div y$ of $x \times y = z$, then the value of z is

1) $\frac{36}{25}$ 2) $\frac{36}{125}$ 3) $\frac{25}{36}$ 4) $\frac{125}{36}$

7. $\left(\frac{1}{4} \text{ of } 2\frac{2}{7}\right)$ When multiplied by $6\frac{3}{10} \times 2\frac{1}{7} \times \frac{35}{9}$ gives x, and if $y = \frac{5}{6}$, then $\frac{x}{y}$ is

1) $2^2 \times 3^2$ 2) $2^3 \times 3^2$ 3) $2^2 \times 3^3$ 4) 2×3^4

8. If $1+1 \div \left\{1+1 \div \left(1+\frac{1}{3}\right)\right\}$ is simplified, then the answer is

1) $1\frac{2}{7}$ 2) $1\frac{3}{4}$ 3) $1\frac{4}{7}$ 4) $1\frac{5}{7}$

9. If $\frac{1}{4}$ part is equal to 3, then $\frac{3}{4}$ part equal to

1) 4 2) 6 3) 9 4) 8

10. If $\frac{c}{d} = 1 \div \frac{3}{4}$, then $\frac{5}{6} + \frac{c}{d}$ is

1) $\frac{13}{3}$ 2) $\frac{13}{2}$ 3) $\frac{13}{6}$ 4) $\frac{13}{4}$

11. If $x = \frac{2}{3}$ of $\frac{3}{4}$, $y = \frac{3}{4}$ of $\frac{8}{12}$, then (x + y) + (x – y) is

1) 0 2) 1 3) –1 4) Con't find

12. If $\frac{3}{x} \times \frac{8}{6} \times \frac{12}{9} = \frac{4}{3}$ and $\frac{2}{7} \times \frac{y}{9} \times \frac{27}{4} = 3$, then $\frac{x}{y}$ is a reciprocal of

1) $\frac{7}{2}$ 2) $\frac{2}{7}$ 3) $\frac{14}{8}$ 4) $\frac{8}{14}$

13. In a school of strength 80, number of boys and number of girls are equal. If $\frac{1}{5}$th of the girls $\frac{1}{8}$ th of the boys took part in a social camp, then the fraction of the total strength took part in the camp is

1) $\frac{12}{40}$ 2) $\frac{13}{40}$ 3) $\frac{15}{40}$ 4) $\frac{17}{40}$

Multi Answer Type

14. If $\frac{1}{8}$ of a pencil is black, $\frac{1}{2}$ of the remaining is white and the remaining $3\frac{1}{2}$ cm is blue, then the total length of the pencil is

1) 800 mm 2) 8 cm 3) 12 cm 4) 1200 mm

15. What fraction of a 1275 is 816.

1) $\frac{16}{25}$ 2) $\frac{16}{24}$ 3) $\frac{48}{75}$ 4) $\frac{48}{72}$

Reasoning Answer Type

16. *Statement I :* If $\frac{25}{34}$ of a number is 750, then the number is 1020.

Statement II : If x of y = z, then $y = z \times \frac{1}{x}$.

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

17. *Statement I :* The sum of $\frac{3}{4}$ and reciprocal of $\frac{4}{7}$ is $\frac{5}{2}$.

Statement II : The reciprocal of $\frac{a}{b}$ is $\frac{b}{a}$.

1) Both Statements are true, Statement II is the correct explanation of Statement I.
2) Both Statements are true, Statement II is not correct explanation of Statement I.
3) Statement I is true, Statement II is false.
4) Statement I is false, Statement II is true.

Comprehension Type

Writeup-1:

A man had Rs. 56000. He gave $\frac{2}{5}$ of his money to his son, $\frac{3}{8}$ of the remainder to her daughter and the rest to his wife, then

18. The share of wife is
    1) Rs.22,400 2) Rs.12,600 3) Rs.21,000 4) Rs.14,800
19. The share of son is
    1) Rs.12,600 2) Rs.21,000 3) Rs.14,800 4) Rs.22,400
20. The share of daughter is
    1) Rs.21,000 2) Rs.14,800 3) Rs.22,400 4) Rs.12,600

Writeup-2:

A Bus starts with full of passengers. At the first station, it dross $\frac{1}{3}$ of the passengers and takes $\frac{1}{7}$ of the passengers at the beginning. At the second stop it drops $\frac{1}{2}$ of the new total. At the third and last station it drops remaining

[Bus Capacity = 42 Passengers]

21. How many Passengers it takes at first station.
    1) 5 2) 6 3) 7 4) 8
22. How many Passengers it downs at second station.
    1) 10 2) 17 3) 20 4) 25
23. How many Passengers it drops at last.
    1) 15 2) 17 3) 25 4) 30

Matrix Matching Type

On a rainy day $\frac{4}{15}$ of the whole strength of a class was absent and $\frac{3}{4}$ of those present, brought rain coat and the total strength of the class is 18, then

24.

Column-I	Column-II
a) Number of absentees	1) 132
b) Number of students present	2) 99
c) Number of students who brought rain coat	3) 125
d) Number of students who did not bring coat	4) 48
	5) 33

25.

Column-I	Column-II
a) If $9\frac{3}{4}+7\frac{7}{8}+3\frac{5}{12}$ is	1) $3\frac{19}{24}$
b) If $3\frac{1}{4}-1\frac{5}{6}+2\frac{3}{8}$ is	2) $21\frac{1}{24}$
c) If $9\frac{5}{14}-6\frac{8}{21}+\frac{25}{42}$ is	3) $3\frac{4}{7}$
d) If $2\frac{1}{18}-\frac{7}{12}-\frac{23}{24}$ is	4) $\frac{37}{12}$
	5) $\frac{25}{7}$

Integer Answer Type

26. The number of pieces obtained when $1\frac{3}{4}$ meters can be cut from a roll of ribbon of length 56 meters are _____

W0RK SHEET – 1 (KEY)				
1) 1	2) 2	3) 4	4) 1	5) 3
6) 3	7) 3	8) 2	9) 4	10) 3
11) 4	12) 2	13) 3	14) 2,3	15) 4
16) 1	17) 2	18) 4	19) 2	20) 3
21) 1	22) 2	23) A-3,4,5 B-3,5 C-2,5 D-3,5	24) A-3,5 B-4 C-2,4 D-1,5	25) 6

W0RK SHEET – 2 (KEY)				
1) 2	2) 4	3) 4	4) 1	5) 1
6) 4	7) 1	8) 1	9) 4	10) 4
11) 2	12) 3	13) 4	14) 3,4	15) 1,2,3
16) 4	17) 1	18) 3	19) 1	20) 2
21) 2	22) 3	23) 4	24) A-1 B-2 C-3 D-4	25) A-5 B-1 C-2 D-4
26) 60				

W0RK SHEET – 3 (KEY)				
1) 2	2) 2	3) 1	4) 3	5) 2
6) 3	7) 1	8) 4	9) 3	10) 3
11) 4	12) 2	13) 1	14) 2,3	15) 1
16) 4	17) 1	18) 2	19) 2	20) 3
21) 2	22) 4	23) 1	24) A-4 B-3 C-2,3,5 D-1,3,5	25) 1
26) 7				

W0RK SHEET – 4 (KEY)				
1) 4	2) 2	3) 3	4) 4	5) 3
6) 3	7) 1	8) 3	9) 3	10) 3
11) 2	12) 1	13) 2	14) 1,2	15) 1,3
16) 1	17) 1	18) 3	19) 4	20) 4
21) 2	22) 2	23) 2	24) A-4 B-1 C-2 D-5	25) A-2 B-1 C-3,5 D-4
26) 32				