

SECTION – A

Questions 1 to 6 carry 1 mark each.

1. Which of the following is not in the lowest form?

(a) $\frac{7}{5}$ (b) $\frac{15}{20}$ (c) $\frac{13}{33}$ (d) $\frac{27}{28}$

Ans: (b) $\frac{15}{20}$

Divide both numerator and denominator by 5 = $\frac{3}{4}$

2. The fraction which is not equal to $\frac{4}{5}$ is

(a) $\frac{40}{50}$ (b) $\frac{12}{15}$ (c) $\frac{16}{20}$ (d) $\frac{9}{15}$

Ans: (d) $\frac{9}{15}$

All the options given in the question are further simplified as,

(a) $\frac{40}{50}$

Divide both numerator and denominator by 10 = $\frac{4}{5}$

(b) $\frac{12}{15}$

Divide both numerator and denominator by 3 = $\frac{4}{5}$

(c) $\frac{16}{20}$

Divide both numerator and denominator by 4 = $\frac{4}{5}$

(d) $\frac{9}{15}$

Divide both numerator and denominator by 3 = $\frac{3}{5}$

Therefore, $\frac{3}{5} \neq \frac{4}{5}$

3. If $(\frac{5}{8}) = (\frac{20}{p})$, then value of p is

(a) 23 (b) 2 (c) 32 (d) 16

Ans: (c) 32

Consider the given fraction, $(\frac{5}{8}) = (\frac{20}{p})$

$\Rightarrow p = 20 \times (\frac{8}{5}) \Rightarrow p = 4 \times 8 \Rightarrow p = 32$

4. Which of the following fractions is the greatest?

(a) $\frac{5}{7}$ (b) $\frac{5}{6}$ (c) $\frac{5}{9}$ (d) $\frac{5}{8}$

Ans: (b) $\frac{5}{6}$

We know that, among all fractions with same numerator, the one having smaller denominator will be the highest fraction.

$\frac{5}{9} < \frac{5}{8} < \frac{5}{7} < \frac{5}{6}$

Therefore, among four options, (b) $\frac{5}{6}$ has small denominator.

So, it is the greatest fraction.

5. Sum of $\frac{4}{17}$ and $\frac{15}{17}$ is

(a) $\frac{19}{17}$ (b) $\frac{11}{17}$ (c) $\frac{19}{34}$ (d) $\frac{2}{17}$

Ans: (a) $\frac{19}{17}$

If denominators of the given fractions are same, we can add both fractions.

So, $(\frac{4}{17}) + (\frac{15}{17})$

= $(4 + 15)/17 = \frac{19}{17}$

6. The mixed fraction $5\frac{4}{7}$ can be expressed as
 (a) $33/7$ (b) $39/7$ (c) $33/4$ (d) $39/4$
 Ans: (b) $39/7$
 $5\frac{4}{7}$ can be expressed as $= 5 + (4/7)$
 $= (35 + 4)/7 = 39/7$

SECTION – B(CCT Questions)

Questions 7 to 10 carry 1 mark each.

CCT Question

One day, Maths teacher started the Chapter – Fraction in the class. He explained that a fraction is used to represent the portion/part of the whole thing. It represents the equal parts of the whole. A fraction has two parts, namely numerator and denominator. The number on the top is called the numerator, and the number on the bottom is called the denominator. The numerator defines the number of equal parts taken, whereas the denominator defines the total number of equal parts in a whole.

For example, $5/10$ is a fraction.

Here, 5 is a numerator and 10 is a denominator.

Answer the following questions based on the above information:

7. The equivalent fraction of $\frac{3}{5}$ with denominator 20 is
 (a) $\frac{12}{20}$ (b) $\frac{20}{12}$ (c) $\frac{10}{20}$ (d) $\frac{15}{20}$
 Ans: (a) $\frac{12}{20}$
8. The equivalent fraction of $\frac{3}{5}$ with numerator 9 is
 (a) $\frac{15}{9}$ (b) $\frac{9}{11}$ (c) $\frac{9}{15}$ (d) $\frac{9}{5}$
 Ans: (c) $\frac{9}{15}$
9. The simplest form of $\frac{48}{60}$ is
 (a) $\frac{5}{4}$ (b) $\frac{4}{5}$ (c) $\frac{8}{10}$ (d) $\frac{12}{15}$
 Ans: (b) $\frac{4}{5}$
10. Which one of the following is a proper fraction?
 (a) $\frac{5}{6}$ (b) $\frac{7}{3}$ (c) $\frac{4}{3}$ (d) $\frac{8}{5}$
 Ans: (a) $\frac{5}{6}$

SECTION – C

Questions 11 to 13 carry 2 marks each.

11. Write an equivalent fraction of (i) $\frac{2}{5}$ with numerator as 12 (ii) $\frac{16}{40}$ with denominator as 10.

Ans:

$$(a) \frac{2}{5} = \frac{12}{?}$$

$$\frac{2}{5} = \frac{2 \times 6}{5 \times 6} = \frac{12}{30}$$

\therefore The equivalent fraction of $\frac{2}{5}$ with numerator as 12 is $\frac{12}{30}$.

$$(b) \frac{16}{40} = \frac{?}{10}$$

\therefore We divide the numerator 16 also by 4.

$$\frac{16}{40} = \frac{16 \div 4}{40 \div 4} = \frac{4}{10};$$

so the equivalent fraction of $\frac{16}{40}$ with denominator as 10 is $\frac{4}{10}$.

12. Subtract (a) $\frac{2}{9}$ and $\frac{7}{9}$ (b) $6\frac{2}{7}$ and $11\frac{4}{7}$

Ans:

$$(a) \frac{7}{9} - \frac{2}{9} = \frac{7-2}{9} = \frac{5}{9}.$$

$$(b) 11\frac{4}{7} - 6\frac{2}{7} = \frac{81}{7} - \frac{44}{7} = \frac{81-44}{7} = \frac{37}{7} = 5\frac{2}{7}.$$

13. Compare the fractions $\frac{3}{4}$ and $\frac{5}{12}$

Ans:

LCM of 4, 12 is 12.

$$\therefore \frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

Comparing $\frac{9}{12}$ and $\frac{5}{12}$ we find $\frac{9}{12} > \frac{5}{12} \therefore \frac{3}{4} > \frac{5}{12}$

SECTION – D

Questions 14 to 17 carry 3 marks each.

14. Renu did $\frac{1}{2}$ of the work yesterday and one-third of the work today. How much work will she

have to do tomorrow to complete the work?

Ans:

Whole or complete work is always considered as 1.

$$\text{Work done yesterday} = \frac{1}{2}; \quad \text{Work done today} = \frac{1}{3}$$

$$\text{Total work done} = \frac{1}{2} + \frac{1}{3} = \frac{3+2}{6} = \frac{5}{6}$$

$$\therefore \text{Remaining work for tomorrow} = 1 - \frac{5}{6} = \frac{6-5}{6} = \frac{1}{6}.$$

15. Write the natural numbers from 102 to 113. What fraction of them are prime numbers?

Ans: Natural numbers from 102 to 113 are
 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113
 Total number of natural numbers given = 12
 Number of prime numbers = 4 [103, 107, 109, 113]
 \therefore Required Fraction = $4 / 12 = 1 / 3$

16. In a class A of 25 students, 20 passed in first class; in another class B of 30 students, 24 passed in first class. In which class was a greater fraction of students getting first class?

Ans: Total number of students in Class A = 25
 Students passed in first class in Class A = 20
 Hence, fraction = $20 / 25 = 4 / 5$
 Total number of students in Class B = 30
 Students passed in first class in Class B = 24
 Hence, fraction = $24 / 30 = 4 / 5$
 \therefore An equal fraction of students passed in first class in both the classes

17. Simplify: $\frac{3}{4} + \frac{5}{6} + \frac{7}{8}$

Ans: $\frac{3}{4} + \frac{5}{6} + \frac{7}{8}$

LCM of 4, 6 and 8 = $2 \times 2 \times 3 \times 2 = 24$

\therefore Converting each of them into equivalent like fractions

$$\frac{3}{4} = \frac{3 \times 6}{4 \times 6} = \frac{18}{24}, \quad \frac{5}{6} = \frac{5 \times 4}{6 \times 4} = \frac{20}{24}, \quad \frac{7}{8} = \frac{7 \times 3}{8 \times 3} = \frac{21}{24}$$

$$\therefore \frac{3}{4} + \frac{5}{6} + \frac{7}{8} = \frac{18}{24} + \frac{20}{24} + \frac{21}{24} = \frac{59}{24} = 2 \frac{11}{24}$$

SECTION – E

Questions 18 to 20 carry 4 marks each.

18. Re-arrange the given fractions in ascending order: $\frac{7}{15}, \frac{11}{21}$ and $\frac{13}{35}$

Ans:

The fractions are $\frac{7}{15}, \frac{11}{21}$ and $\frac{13}{35}$.

LCM of 15, 21, 35 = $3 \times 5 \times 7 = 105$

$$\therefore \frac{7}{15} = \frac{7 \times 7}{15 \times 7} = \frac{49}{105}; \quad \frac{11}{21} = \frac{11 \times 5}{21 \times 5} = \frac{55}{105}; \quad \frac{13}{35} = \frac{13 \times 3}{35 \times 3} = \frac{39}{105}$$

$\therefore \frac{49}{105}, \frac{55}{105}, \frac{39}{105}$ are like fractions.

$$\therefore \frac{39}{105}, \frac{49}{105}, \frac{55}{105} \text{ or } \frac{13}{35}, \frac{7}{15}, \frac{11}{21}$$

19. Draw number lines and locate the fractions on them: $\frac{2}{5}, \frac{3}{5}, \frac{8}{5}, \frac{4}{5}$

Ans:



20. A piece of wire $2\frac{3}{4}$ metre long broke into two pieces. One piece was $\frac{5}{8}$ metre long. How long is the other piece?

Ans:

$$\text{Total length of wire} = 2\frac{3}{4} \text{ metres}$$

$$\text{Length of one piece} = \frac{5}{8} \text{ metre}$$

$$\therefore \text{Length of the other piece} = 2\frac{3}{4} \text{ metres} - \frac{5}{8} \text{ metre}$$

$$= \frac{11}{4} - \frac{5}{8} \text{ metres} = \frac{22-5}{8} = \frac{17}{8} \text{ metres} = 2\frac{1}{8} \text{ metres}$$

