DPP
DAILY PRACTICE PROBLEMS

Class : IXTH **Subject : MATHS**
Date : **DPP No. : 3**

END OF CHAPTER EXERCISE

Q 1. Every rational number is:
(a) a natural number (b) an integer
(c) a real number (d) a whole number

Q 2. If the length of the longer line is 60 cm , the length of the shorter one is:

(a) 25 cm (b) 45 cm
(c) 20 cm (d) 18 cm

Q 3. Which statement is NOT true?
(a) 11 is an integer. (b) -5 is a whole number.
(c) 8 is a natural number. (d) 3 is a rational number.

Q4. Which of the following is true about $x = 0.\overline{6}$?
(a) x is a rational number because x can be written in the form $\frac{p}{q}$ by solving the equation $10x = 6 + x$.
(b) x is a rational number because x can be written in the form $\frac{p}{q}$ by solving the equation $10x = 6 - x$.
(c) x is an irrational number because x can be written in the form $\frac{p}{q}$ by solving the equation $10x = 6 + x$.
(d) x is an irrational number because x can be written in the form $\frac{p}{q}$ by solving the equation $10x = 6 - x$.

Q 5. A rational number m is described below.

$$m = \frac{\text{Prime number}}{15}$$

Consider the following conclusions about the number m.

Conclusion 1: The decimal expansion of m is non-terminating recurring but the decimal expansion of 3 m is terminating.

Conclusion 2: The decimal expansion of m is terminating.

Which of these is correct?

(a) Conclusion 1 is valid for all primes except 3 but Conclusion 2 is valid only for the prime number 3.

(b) Conclusion 1 is valid but Conclusion 2 is valid only for the prime number 5.

(c) Conclusion 1 is not valid but Conclusion 2 is valid only for the prime number 3.

(d) Conclusion 1 is not valid but Conclusion 2 is valid only for the prime number 5.

Q 6. Between two rational numbers:

(a) there is no rational number.

(b) there is exactly one rational number.

(c) there are infinitely many rational numbers.

(d) there are only rational numbers and no irrational numbers.

Q7. A rational number which does not lie between rational numbers $-\frac{2}{5}$ and $-\frac{1}{5}$ is:

(a) $-\frac{3}{10}$ (b) $\frac{3}{10}$ (c) $-\frac{1}{4}$ (d) $-\frac{7}{20}$

Q 8. If we calculate the value of $\sqrt{2}$ we will get:

(a) a terminating decimal fraction (like 1.4142).

(b) a recurring decimal fraction (like 1.4142222...).

(c) a non-terminating, non-recurring decimal fraction (like $1.41421356\ldots$).

(d) a non-terminating decimal fraction whose digits follow a simple pattern (like 1.4142345678...).

Q 9. The decimal expansion of $\sqrt{5}$ is:

(a) terminating (b) non-terminating recurring

(c) non-terminating non-recurring (d) none of these.

Q 10. Which of the following decimal representation is an irrational number?

(a) $\frac{22}{7}$ (b) $\frac{1}{17}$ (c) $0.\overline{3147}$ (d) $1.212112111\ldots$

Q 11. A student represents an integer 8 as $\frac{8}{1}$. Which of the following is true about the integer?

(a) It is a rational number as it is in the form $\frac{p}{q}$, where $q \neq 0$.

(b) It is an irrational number as it is in the form $\frac{p}{q}$, where $q \neq 0$

(c) It is not a rational number as rational number is in the form $\frac{p}{q}$, where $q \neq 1$.

(d) It is not an irrational number as irrational number is in the form $\frac{p}{q}$, where $q \neq 1$.

Q 12. The number 0.318564318564318564 … is:

(a) a natural number (b) an integer

(c) a rational number (d) an irrational number

Q 13. Which of the following statements is true?

(a) $\frac{\sqrt{2}}{3}$ is a rational number.

(b) There are infinitely many integers between any two integers.

(c) Number of rational numbers between 15 and 18 is finite.

(d) There are numbers which cannot be written in the form $\frac{p}{q}, q \neq 0, p, q$ both are integers.

Q 14. When $0.\overline{001}$ is expressed in the form $\frac{p}{q}$, where p and q are integers not having any common factor except 1 then q is equal to:

(a) 9 (b) 99 (c) 999 (d) 1000

Q 15. The value of 0.9999 … when expressed as a fraction in the simplest form is:

(a) $\frac{1}{9}$ (b) 1 (c) $\frac{8}{9}$ (d) $\frac{10}{9}$

Q 16. The simplest form of $0.12\overline{3}$ is:

(a) $\frac{41}{330}$ (b) $\frac{37}{300}$ (c) $\frac{41}{333}$ (d) none of these

Q 17. Which of the following numbers are both rational and real?

(i) -3.14 (ii) $\sqrt{16}$ (iii) $\sqrt{10}$ (iv) 0.333 …

Choose the correct option from the following:

(a) only (i) and (ii) (b) only (ii) and (iv)

(c) (i), (ii) and (iv) (d) only (i) and (iv)

Q 18. Which of the following statements are true?

(i) All integers are rational numbers. (ii) All rational numbers are integers.

(iii) Every whole number is a natural number. (iv) Every natural number is a whole number.

Choose the correct option from the following:

(a) (i) and (iii) (b) (i) and (iv)

(c) (ii) and (iv) (d) (ii) and (iii)

Q 19. Which of the following are properties of rational numbers?

(i) They can be represented on a number line.

(ii) They can be expressed in decimal form.

(iii) They can have a non-terminating, repeating decimal representation.

(iv) They include both positive and negative values.

Choose the correct option from the following:

(a) (i) and (ii) only (b) (ii) and (iii) only

(c) (iii) and (iv) only (d) (i), (ii), (iii) and (iv)

Q20. Which of the following statement/ statements is/are true regarding the number line?

(i) All rational numbers can be located on the number line.

(ii) All irrational numbers cannot be represented on the number line.

(iii) The number line is infinite in both directions.

(iv) The distance between any two distinct points on the number line is always positive.

Choose the correct option from the following:

(a) (i) only (b) (i) and (ii) only

(c) (i), (iii) and (iv) (d) (ii) and (iv) only

Q21. Rational numbers between $-\frac{2}{7}$ and $\frac{1}{8}$ is/are:

(i) $-\frac{9}{28}$ (ii) $\frac{1}{9}$ (iii) $\frac{1}{14}$ (iv) $\frac{2}{7}$

Choose the correct option from the following:

(a) (ii) only (b) (ii) and (iii) (c) (i) and (iv) (d) (i) and (iii)

Q 22. Which of the following are true about $\sqrt{5}$?

(i) It is an irrational number.

(ii) It can be expressed as a fraction.

(iii) It is a real number.

(iv) It is greater than 2.

Choose the correct option from the following:

(a) only (i) and (iii) (b) only (i) and (iv)

(c) only (ii) and (iv) (d) (i), (iii) and (iv)

Q 23. Identify the correct statements about the decimal representations of numbers:

(i) All terminating decimals are rational numbers.

(ii) Non-terminating repeating decimals are irrational.

(iii) Non-terminating repeating decimals are rational.

(iv) All integers are terminating decimals.

Choose the correct option from the following:

(a) only (ii) (b) only (i) and (iii)

(c) only (i) and (iv) (d) (i), (iii) and (iv)

Q24. Which of the following numbers can be expressed as a terminating decimal?

(i) $\frac{1}{8}$ (ii) $\frac{1}{3}$ (iii) $\frac{5}{2}$ (iv) $\frac{1}{6}$

Choose the correct option from the following:

(a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (iii) and (iv)

The following questions are Assertion and Reason based questions. Two statements are given, one labelled as Assertion (A) and the other is labelled as Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.
(a) Both A and R are true, and R is the correct explanation of A .
(b) Both A and R are true, but R is not the correct explanation of A .
(c) A is true, but R is false.
(d) A is false, but R is true.

Q 25. Assertion (A) : 0.271 is a terminating decimal and we can express this number as $\frac{271}{1000}$ which is of the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$.
Reason (R) : A terminating or nonterminating decimal expansion is a rational number.

Q26. Assertion (A) : $-\frac{2}{7}$ is a rational number.
Reason ($\mathbb{R}$) : Any number that can be expressed in the form $\frac{p}{q}$, where p, q are integers and $q \neq 0$, is a rational number.

Q27. Assertion (A) : $0.\overline{36}$ is an irrational number.

Reason ($\mathbb{R}$) : Any real number that cannot be expressed in the form $\frac{p}{q}$ where p, q are integers, $q \neq 0$ and p, q have no common factor except 1 is an irrational number.

Q28. Find a rational number between -2 and 6 .

Q29. State whether the following statements are true or false. Justify your answers:
(i) Every irrational number is a real number.
(ii) Every point on the number line is of the form $\sqrt{m}$, where m is natural number.
(iii) Every real number is an irrational number.

Q30. Every irrational number is a real number. Justify.

Q31. Find the decimal expansions of $\frac{10}{3}$.

Q32. Find five rational numbers between 2 and 3.

Q 33. A boat sailed 40 km to the east of a harbour and then 70 km to the west from there. How far from the harbour is the boat finally?

Q34. Express each of the following decimals in the form $\frac{p}{q}$:
(i) $0.\overline{4}$ (ii) $0.\overline{6}$

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
c	b	b	a	a	c	b	c	c	d
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
a	c	d	c	b	b	c	b	d	c
21	**22**	**23**	**24**	**25**	**26**	**27**			
b	d	d	b	c	a	d			

28. 2

29. (i) True (ii) False (iii) False

31. $3.333\ldots$

32. $\frac{17}{8}, \frac{9}{4}, \frac{5}{2}, \frac{11}{4}, \frac{23}{8}$

33. 30 km West

34. (i) $\frac{4}{9}$ (ii) $\frac{2}{3}$