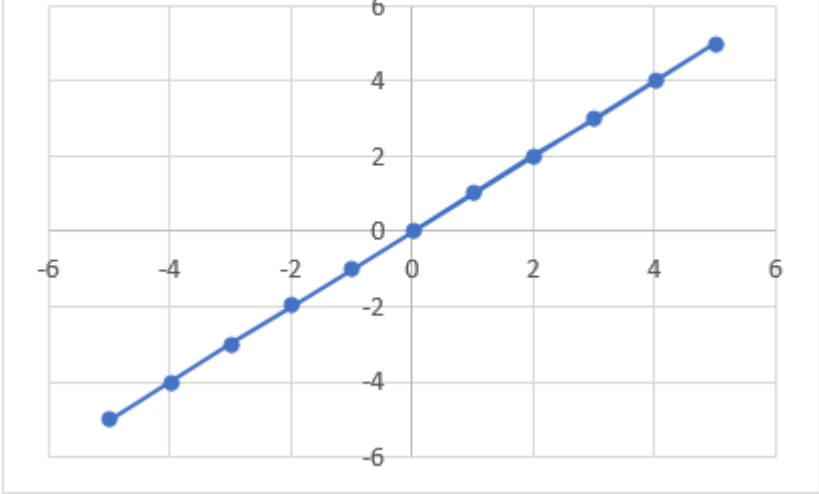
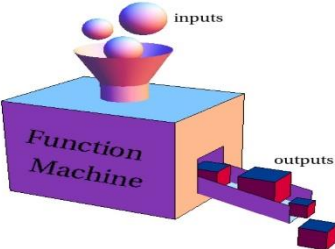
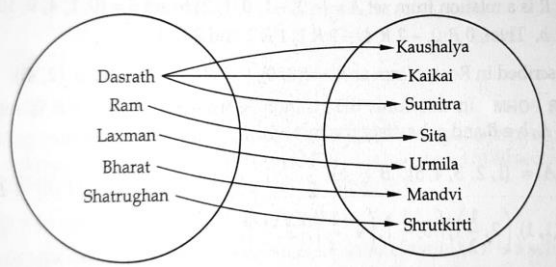


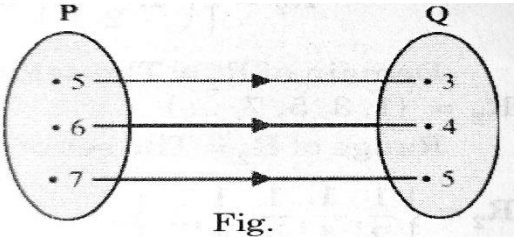
CHAPTER-2
RELATIONS & FUNCTIONS
01 MARK TYPE QUESTIONS

Q. NO	QUESTION	MARK
1.	<p style="text-align: center;">Y-Values</p>  <p>1. Which function is shown in graph?</p> <p>(a) Constant b) Modulus c) Identity d) Signum function</p>	1
2.	<p>Let $n(A) = m$, and $n(B) = n$. Then the total number of non-empty relations that can be defined from A to B is</p> <p>(a) m^n (b) $n^m - 1$ (c) $mn - 1$ (d) $2^{mn} - 1$</p>	1
3.	<p>If $f(x) = x^2 + 2$, $x \in \mathbb{R}$, then the range of $f(x)$ is</p> <p>(a) $[2, \infty)$ (b) $(-\infty, 2]$ (c) $(2, \infty)$ (d) $(-\infty, 2) \cup (2, \infty)$</p>	1

4.	<p>What will be the domain for which the functions $f(x) = 2x^2 - 1$ and $g(x) = 1 - 3x$ are equal?</p> <p>(a) $\{-2, 1\}$</p> <p>(b) $\{1/2, -2\}$</p> <p>(c) $[2, 12]$</p> <p>(d) $(-1, 2)$</p>	1
5.	<p>If $[x]^2 - 5[x] + 6 = 0$, where $[\cdot]$ denotes the greatest integer function, then</p> <p>(a) $x \in [3, 4]$</p> <p>(b) $x \in (2, 3]$</p> <p>(c) $x \in [2, 3]$</p> <p>(d) $x \in [2, 4)$</p>	1
6.	<p>If $f(x) = ax + b$, where a and b are integers, $f(-1) = -5$ and $f(3) = 3$, then a and b are equal to</p> <p>(a) $a = -3, b = -1$</p> <p>(b) $a = 2, b = -3$</p> <p>(c) $a = 0, b = 2$</p> <p>(d) $a = 2, b = 3$</p>	1
7.	<p>The domain of the function $f(x) = x/(x^2 + 3x + 2)$ is</p> <p>(a) $[-2, -1]$</p> <p>(b) $\mathbb{R} - \{1, 2\}$</p> <p>(c) $\mathbb{R} - \{-1, -2\}$</p> <p>(d) $\mathbb{R} - \{2\}$</p>	1

8.	<p>The range of $f(x) = \sqrt{25 - x^2}$ is</p> <p>(a) $(0, 5)$</p> <p>(b) $[0, 5]$</p> <p>(c) $(-5, 5)$</p> <p>(d) $[1, 5]$</p>	1
9.	<p>The domain and range of the real function f defined by $f(x) = (4 - x)/(x - 4)$ is given by</p> <p>(a) Domain = \mathbb{R}, Range = $\{-1, 1\}$</p> <p>(b) Domain = $\mathbb{R} - \{1\}$, Range = \mathbb{R}</p> <p>(c) Domain = $\mathbb{R} - \{4\}$, Range = $\{-1\}$</p> <p>(d) Domain = $\mathbb{R} - \{-4\}$, Range = $\{-1, 1\}$</p>	1
10.	<p>The domain and range of the function f given by $f(x) = 2 - x - 5$ is</p> <p>(a) Domain = \mathbb{R}^+, Range = $(-\infty, 1]$</p> <p>(b) Domain = \mathbb{R}, Range = $(-\infty, 2]$</p> <p>(c) Domain = \mathbb{R}, Range = $(-\infty, 2)$</p> <p>(d) Domain = \mathbb{R}^+, Range = $(-\infty, 2]$</p>	1
11.	<p>Let $R = \{(x, y) : x, y \in \mathbb{Z}, x^2 + y^2 \leq 4\}$ is a relation in \mathbb{Z}, then domain of R is:</p> <p>a) $\{0, 1, 2\}$</p> <p>b) $\{0, -1, -2\}$</p> <p>c) $\{-2, -1, 0, 1, 2\}$</p> <p>d) None of these</p>	1
12.	<p>In the set R of real numbers, two relations are:</p> $R_1 = \{(x, y) : x, y \in R \text{ and } x^2 + y^2 \leq 25\}$ $R_2 = \{(x, y) : x, y \in R \text{ and } y \geq \frac{4}{9}x^2\}$ <p>Then domain and range of $R_1 \cap R_2$ is:</p> <p>a) $[-3, 3], [0, 5]$</p> <p>b) $[-3, 3], [-5, 5]$</p> <p>c) $[-3, 4], [0, 5]$</p> <p>d) $[3, 4], [0, 5]$</p>	1

13.	<p>What will be the output of $\sqrt{-1}$ if the function in the machine is $f(x) = x^2$</p> <p>Image: Function machine</p>  <p>a) 1 b) 0 c) -1 d) 1</p>	1
14.	<p>Let R be a relation from a set A to a set B, then</p>  <p>a) $R = A \cup B$ b) $R = A \cap B$ c) $R \subseteq A \times B$ d) $R \subseteq B \times A$</p>	1
15.	<p>If $f\left(x + \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$, then $f(x) = ?$</p> <p>a) x^2 b) $x^2 - 1$ c) $x^2 - 2$ d) $x^2 + 2$</p>	1
16.	<p>If $[x]^2 - 5[x] + 6 = 0$ where $[\]$ denotes the greatest integer function:</p> <p>a) $x \in [3,4]$ b) $x \in (2,3]$ c) $x \in [3,2]$ d) $x \in [2,4]$</p>	1
17.	<p>Let $f(x) = x$, $g(x) = \frac{1}{x}$ and $h(x) = f(x) \cdot g(x)$, then $h(x) = 1$ for:</p> <p>a) $x \in R$ b) $x \in Q$ c) $x \in R - Q$ d) $x \in R, x \neq 0$</p>	1
18.	<p>The range of the function $f(x) = \frac{x+2}{ x+2 }, x \neq -2$ is:</p> <p>a) $\{-1, 1\}$ b) $\{-1, 0, 1\}$ c) $\{1\}$</p>	1

	d) $(0, \infty)$	
19.	<p>Assertion(A) : If $(x + y, 3) = (5, x - y)$ then $x = 4$ and $y = 1$</p> <p>Reason(R) : Two ordered pairs are equal if and only if their corresponding elements are equal</p> <p>a) Both A and R are true and R is the correct explanation of A</p> <p>b) Both A and R is true but R is not the correct explanation of A</p> <p>c) A is true but R is false</p> <p>d) A is false but R is true</p>	1
20.	<p>The figure shows a relationship between the set P and Q. Which of the following is true?</p>  <p>Fig.</p> <p>a) Domain of R is $\{5,6,7\}$</p> <p>b) Range of R is $\{3,4,5\}$</p> <p>c) In roster form $R = \{(5,3), (6,4), (7,5)\}$</p> <p>d) All of these</p>	1

ANSWERS:

Q. NO	ANSWER	MARKS
1.	c	1
2.	d	1
3.	a	1
4.	b	1
5.	d	1
6.	b	1
7.	c	1
8.	b	1
9.	c	1
10.	b	1
11.	C	1
12.	A	1
13.	C	1
14.	C	1
15.	C	1
16.	D	1
17.	D	1
18.	A	1
19.	A	1
20.	d	1