INDIAN SCHOOL AL WADI AL KABIR
Class IX, Mathematics
M.C.Q & CASE STUDY – NUMBER SYSTEM

OBJECTIVE TYPE (1 Mark)

Q.1. Which of the following is irrational?

	A	$\sqrt{\frac{4}{9}}$	**B**	$\frac{\sqrt{12}}{\sqrt{3}}$	**C**	$\sqrt{7}$	**D**	$\sqrt{81}$

Q.2. The simplest rationalizing factor of $\frac{1}{\sqrt{20}}$ is

	A	$\sqrt{5}$	**B**	$2\sqrt{5}$	**C**	$\sqrt{20}$	**D**	20

Q.3. Simplify: $\sqrt{72} + \sqrt{800} - \sqrt{18}$

	A	$29\sqrt{2}$	**B**	$20\sqrt{2}$	**C**	$23\sqrt{2}$	**D**	$18\sqrt{2}$

Q.4. Calculate the decimal which represents the fraction $\frac{11}{8}$.

	A	1.3755	**B**	1.375	**C**	1.0375	**D**	2.5

Q.5. Which of the following is equal to x^2 ?

	A	$x^{\frac{11}{6}} - x^{\frac{5}{6}}$	**B**	$\sqrt[12]{(x^4)^{\frac{1}{3}}}$	**C**	$\left(\sqrt{x^3}\right)^{\frac{2}{3}}$	**D**	$x^{\frac{2}{4}} \times x^{\frac{6}{4}}$

Q.6. The value of $\frac{64^{\frac{3}{4}}}{64^{\frac{-1}{4}}}$ is

	A	64	**B**	16	**C**	32	**D**	8

Q.7. Find $4\sqrt{5} + 16\sqrt{3} - 13\sqrt{3} + 11\sqrt{5}$

	A	$5\sqrt{5} + \sqrt{3}$	**B**	$-3(5\sqrt{5} + \sqrt{3})$	**C**	$3(5\sqrt{5} + \sqrt{3})$	**D**	$16\sqrt{5} + 27\sqrt{3}$

Q.8. The decimal expansion of rational number is

	A	Non-terminating and recurring	**B**	Non-terminating and non-recurring	**C**	Terminating	**D**	Both A and C

Q.9. 0 .12333……. can be expressed in rational form as

	A	$\frac{900}{111}$	**B**	$\frac{123}{10}$	**C**	$\frac{121}{900}$	**D**	$\frac{37}{300}$

Q.10.	If $4^{44}+4^{44}+4^{44}+4^{44}=4^{x}$, then x is							
	A	4	**B**	45	**C**	44	**D**	43
Q.11.	Simplify $\sqrt{45}-3\sqrt{20}+4\sqrt{5}$							
	A	$3\sqrt{5}$	**B**	$\sqrt{5}$	**C**	$13\sqrt{5}$	**D**	$7\sqrt{5}$
Q.12.	Rationalizing factor of $\frac{1}{21-4\sqrt{7}}$.							
	A	$4\sqrt{7}$	**B**	$21+4\sqrt{7}$	**C**	$-21-4\sqrt{7}$	**D**	$3-4\sqrt{7}$
Q.13.	Value of y satisfying $\sqrt{y+3}+\sqrt{y-2}=5\ is$							
	A	6	**B**	7	**C**	8	**D**	9

ASSERTION AND REASONING

DIRECTION: A statement of **Assertion (A)** is followed by a statement of **Reason (R).**

Choose the correct option.

(a)Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

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

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false but Reason (R) is true.

Q.14. Assertion(A): $5-\sqrt{2}=5-1.41\ldots\ldots\ldots=3.586\ldots\ldots\ldots$ is an irrational number.

Reason(R): The difference of a rational number and an irrational number is an irrational number.

Q.15. Assertion(A): Rational number lying between two rational numbers a and b is $\frac{a+b}{2}$.

Reason(R): There is one rational number lying between any two rational numbers.

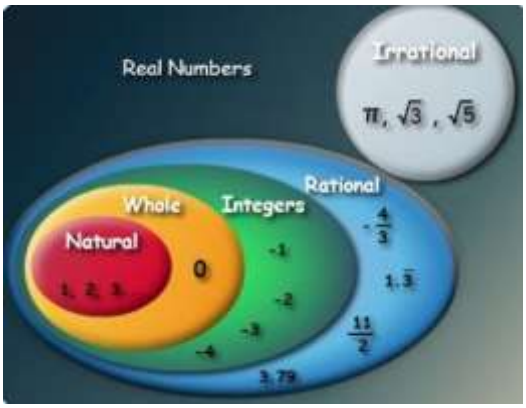
Q.16. Assertion(A): 0.271 is a terminating decimal and we can express this number as $\frac{271}{1000}$ which is of the form $\frac{p}{q}$, where p and q are integers and q ≠ 0.

Reason(R): A terminating or non-terminating with recurring decimal expansion can be expressed as rational number.

Case study- based questions

CASE STUDY QUESTION A:

Real numbers are the numbers which include both rational and irrational numbers. Rational numbers are the numbers which can be written in the form $\frac{p}{q}$ Where p and q are integers and q ≠ 0. Irrational numbers are those numbers which cannot be expressed as a ratio of two integers.



Q.17. Write two irrational numbers between $\frac{1}{2}$ and $\frac{1}{3}$.

Q.18. What is the value of x , when $(2)^{x+4} \times (3)^{x+1} = 288$?

Q.19. Find the number obtained on rationalising the denominator of $\frac{1}{\sqrt{7}-2}$.

Q.20. Find the value of $\frac{\sqrt{32}+\sqrt{48}}{\sqrt{8}+\sqrt{12}}$.

ANSWERS

Q.1.	C	**Q.2.**	A	**Q.3.**	C	**Q.4.**	B
Q.5.	D	**Q.6.**	A	**Q.7.**	C	**Q.8.**	D
Q.9.	D	**Q.10.**	B	**Q.11.**	B	**Q.12.**	B
Q.13.	A	**Q.14.**	a	**Q.15.**	c	**Q.16.**	c
Q.17.	Any two 0.3434434443… 0.3513551355513……	**Q.18.**	1	**Q.19.**	$\frac{\sqrt{7}+2}{3}$	**Q.20.**	2

****