INDIAN SCHOOL AL WADI AL KABIR
Class X, Mathematics
M.C.Q & CASE STUDY – REAL NUMBERS

OBJECTIVE TYPE (1 Mark)

Q.1. Select the least number that is divisible by all numbers between 1 and 10 (both inclusive).

	A	2520	**B**	5040	**C**	1010	**D**	202

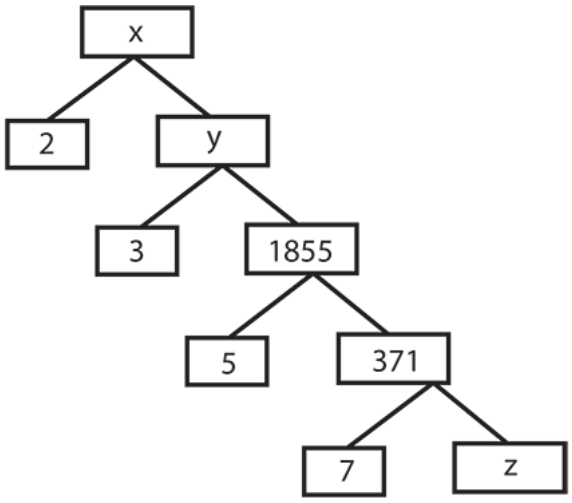
Q.2. The sum of exponents of prime factors in the prime factorisation of 196 is

	A	3	**B**	4	**C**	5	**D**	2

Q.3. The LCM of smallest two-digit composite number and smallest composite number is

	A	12	**B**	2^2	**C**	20	**D**	5

Q.4. In the given factor tree what is the composite number x ?



	A	5565	**B**	11130	**C**	35	**D**	23

Q.5. a and b are two positive integers such that the least prime factor of a is 3 and the least prime factor of b is 5. Then the least prime factor of (a + b) will be

	A	1	**B**	4	**C**	3	**D**	2

Q.6. If $a = 2^3 \times 3,\ b = 2 \times 3^6 \times 5,\ c = 3^n \times 5$ and the LCM (a, b, c) = $2^3 \times 3^8 \times 5$, then find the value of n?

	A	8	**B**	6	**C**	4	**D**	3

Q.7.	The largest number which divides 70 and 125, leaving remainders 5 and 8 respectively, is							
	A	65	**B**	13	**C**	875	**D**	1750
Q.8.	The HCF and LCM of two numbers are 33 and 264 respectively. If the first number is completely divided by 2 the quotient is 33, then the other number is							
	A	33	**B**	264	**C**	164	**D**	132
Q.9.	The number $3^{13} - 3^{10}$ is divisible by							
	A	2 and 3	**B**	3 and 10	**C**	2, 3 and 13	**D**	2, 3 and 10
Q.10.	If two positive integers a and b are written as $a = x^3y^2$ and $b = x\,y^3$, where x, y are prime numbers, then HCF(a, b) is							
	A	xy	**B**	$x\,y^2$	**C**	x^3y^3	**D**	x^2y^2
	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.11.	Assertion(A): For any two positive integers p and q, HCF (p, q) × LCM (p, q) = p × q Reason(R): If the HCF of two numbers is 5 and their product is 150, then their LCM is 40.							
Q.12.	Assertion(A): $\mathbf{12^n}$ ends with the digit zero, where n is any natural number. Reason(R): Any number ends with digit zero, if its prime factor is of the form 2^m x 5^n, where m and n are natural numbers.							
Q.13.	Assertion (A): 3 x 5 x 7 + 7 is a composite number. Reason (R): A composite number has factors one, itself and any other natural number.							

	Case study- based questions
	CASE STUDY QUESTION A: A book seller has 420 Science stream books and 130 Arts stream books. He wants to stack them in such a way that each stack has the same number and they take up the least area of the surface. 
Q.14.	What is the maximum number of books that can be placed in each stack for this purpose?
Q.15.	If the book seller doubles the quantity, then find the maximum number of books that can be placed in each stack.
Q.16.	Find the LCM of the given book stream.
Q.17.	The book seller later found that he has not placed 540 fiction books. If the book seller stacks them in the similar way, then find the maximum number of books that can be placed in each stack? Also, find the total number of stacks.
	CASE STUDY QUESTION B: Nimisha have 66 football cards, 88 volleyball cards and 110 basketball cards and she want to put them in a binder. Each page of the binder should have cards from a single sport, and there should be the same number of cards on each page. 
Q.18.	Find the prime factorisation of 66, 88 and 110.
Q.19.	What is the greatest number of cards, Nimisha can put on a page?
Q.20.	How many pages will Nimisha need for each sport?
Q.21.	Find the total pages required with same number of cards on each page.

	ANSWERS							
	Q.1.	A	**Q.2.**	B	**Q.3.**	C	**Q.4.**	B
	Q.5.	D	**Q.6.**	A	**Q.7.**	B	**Q.8.**	D
	Q.9.	C	**Q.10.**	B	**Q.11.**	c	**Q.12.**	d
	Q.13.	a	**Q.14.**	10	**Q.15.**	20(double)	**Q.16.**	5460
	Q.17.	10,109	**Q.18.**	66 = 2x3x11 88 = 2x2x2x11 110 = 11x2x5	**Q.19.**	22	**Q.20.**	3,4 and 5
	Q.21.	12						

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