UNIT I - ALGEBRA

Number Theory

1

1m	2m	3m	4m	5m	Total
1(K)	3(1A+2A)	1	–	–	10

1 MARK QUESTIONS

1. Give the canonical representation of 96.
2. Give the canonical representation of 306.
3. Give the canonical representation of 5005.
4. Define prime number.
5. Define composite number.
6. If $Z_1 = 2 + 3i$, $Z_2 = 1 - i$. Find $Z_1 + Z_2$.
7. If $Z_1 = 6i + 3$, $Z_2 = i - 3$. Find $Z_1 - Z_2$.
8. Find the real part of $3 + 5i$.
9. Find the imaginary part of $\dfrac{2}{3} - \dfrac{4i}{5}$.
10. Find the imaginary part of $4 - i$.
11. Find the conjugate of $Z = 3 - 2i$.
12. Express $\dfrac{8}{125}$ as decimals.
13. Find the HCF of 16, 24, 48.

2 MARKS QUESTIONS

1. Find the number of divisors of $3^4 \times 5^3 \times 7^2$.   **(1-Application, 2-Knowledge)**
2. Find the number of divisors of 1644.
3. Find the least integer divisible by 18 and 24.
4. If the product of two numbers is 216 and their LCM is 36. Find their HCF.
5. If the HCF of two numbers is 42 and their product is 52920. Find their LCM.
6. Find the largest integer which divides 105 and 315.
7. Find the LCM of $\dfrac{6}{7}, \dfrac{5}{14}, \dfrac{8}{21}$.

8. Find the HCF of $\dfrac{8}{9}, \dfrac{32}{81}, \dfrac{16}{27}$.

9. Find the real and imaginary part of $6i - 2$.

10. Find LCM of 36, 40 and 48.

11. Find LCM of 30, 60 and 90.

12. Find HCF of 165, 225 and 435.

13. Find HCF of 60, 72 and 84.

14. Find real and imaginary part of $\dfrac{1}{4+3i}$.

15. Express $\dfrac{1+2i}{3-4i}$ in $a+ib$ form.

16. Find HCF of 55 and 210.

17. Find LCM of 48, 96 and 74.

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3 MARKS QUESTIONS

1. Find the number which when divided by 36, 40 and 48 leaves the same remainder 5.

2. Find the number which when divided by 16, 20 and 40 leaves the same remainder 4.

3. Find the greatest number which divides 39, 48 and 90 leaving remainder 6, 4 and 2 respectively.

4. Prove that $\sqrt{2}$ is irrational number.

5. Prove that $\sqrt{5}$ is irrational number.

6. Prove that $2 + \sqrt{3}$ is irrational number.

7. Three bells call at intervals 30 sec., 40 sec., 50 sec. respectively. They start together. After how many minutes will next bell fall together.

8. The cost of a chair is ₹600 and the cost of a table is ₹900. Find the least sum of money that a person must posses in order to purchase a whole number of chairs or tables.

9. Three scales are 65cm, 85cm and 95cm is length. What is the length of the cloth that can be measured exact number of times using any one of these three scales.

10. Find the number of positive divisors and the sum of all positive divisors of 825.

11. Find the number of positive divisors and the sum of all positive divisors of 1024.

12. Find the number of positive divisors and the sum of all positive divisors of 960.

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