

Real Numbers

MM 20

Time 45 minutes

1 Mark Each

1. State Euclid's Division Lemma
2. Explain why $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ is a composite number:
3. $\frac{p}{q}$ is a rational number ($q \neq 0$), which is the condition on q so that representation of $\frac{p}{q}$ is terminating?
4. Show with one example each that sum of two irrational numbers may be rational or irrational.
5. HCF of 12576 and 4052 is 4. Find its LCM.

2 Marks Each

6. Using Euclid's Division algorithm, find the HCF of 135 and 714
7. Find the greatest integer which on dividing 398, 436 and 542 leaves the remainders 7, 11 and 15 respectively.
8. The length, breadth and height of a room are 16m 256cm, 12m 75cm and 8m 50cm, respectively. Determine the longest rod which can measure the three dimensions of the room exactly.

3 Marks Each

9. Show that the square of any positive odd integer is of the form $8m + 1$ for some integer m .
10. Prove that one of every three consecutive positive integers is divisible by 3.
11. Prove that $\sqrt{2} + \sqrt{3}$ is irrational.