

Unit Test 2

For Standard Level

Multiple-Choice Questions

(MM 30)

(1 mark each)

Choose the correct answer out of the given four options in the following questions:

- If the HCF of 65 and 117 is expressible in the form $65m - 117$, then the value of m is
 (a) 4 (b) 2 (c) 3 (d) 1
- $0.\overline{57}$ can be written as $\frac{p}{q}$, $q \neq 0$ as
 (a) $\frac{26}{45}$ (b) $\frac{13}{27}$ (c) $\frac{13}{29}$ (d) $\frac{57}{99}$
- What is the smallest positive integer which should be multiplied with 6^n , (where n is a natural number) so that it ends with the digit 0?
 (a) no possible digit (b) 3
 (c) 5 (d) 25 [CBSE SP 2013]

Short Answer Type-I Questions

(2 marks each)

- Which of the following is a rational number? Justify your answer.
 $0.101001000\dots$, $0.131313\dots$, $0.1521511525\dots$, π
- Is 23.123456789 rational or irrational? If it is rational and of the form $\frac{p}{q}$, what can you say about the prime factors of q ?

Short Answer Type-II Questions

(3 marks each)

- Prove that $(2\sqrt{3} - 1)$ is an irrational number. [CBSE 2010]
- A positive integer is of the form $3q + 1$, q being a natural number. Can you write its square in any form other than $3m + 1$, i.e. $3m$, $3m + 2$ for some integer m ? Justify your answer.
- If $y^2 = 7$, $x^2 = 25$, $z^2 = 0.09$ and $u^3 = 125$, then write the variable which represents an irrational number. Justify your answer.
- If d is the HCF of 45 and 27, find x, y , satisfying $d = 27x + 45y$.
- (i) The numbers 525 and 3000 are both divisible only by 3, 5, 15, 25 and 75. What is HCF (525, 3000)? Justify your answer. [NCERT EXEMPLAR]
 (ii) Can two numbers have 18 as their HCF and 380 as their LCM? Give reasons. [NCERT EXEMPLAR]

Long Answer Questions

(4 marks each)

- Show that the square of any positive integer cannot be of the form $6m + 2$ or