

WEEKLY TEST

STD: - 10TH CBSE

SUBJECT: - MATHEMATICS

CHAPTER:- 1

DATE: -

MARKS: 40

DURATION: - 1:30 HR

1.) Select the correct alternative. Each question carries one mark.

(04)

- $119^2 - 111^2$ is.....number
(a) prime (b) composite (c) odd (d) an odd composite number
- Given that H.C.F. (2520, 6600), L.C.M. (2520, 6600) = $252 \times k$ then $k = \dots$
(a) 550 (b) 66000 (c) 165 (d) 1625
-of the following numbers has terminating decimal expansion
(a) $\frac{37}{45}$ (b) $\frac{21}{2^3 5^6}$ (c) $\frac{17}{49}$ (d) $\frac{89}{2^2 3^3}$
- Euclid's division lemma states that a & b are any two positive integers, then there exists unique integers p & q such that
(a) $a = bq + r, 0 < r < b$ (b) $a = bq + r, 0 \leq r \leq b$
(c) $a = bq + r, 0 \leq r < b$ (d) $a = bq + r, 0 < b < r$

2.) Attempt the following questions. Each question carries two marks

(10)

- Use Euclid's Division Algorithm to find the HCF of 105 and 245
- Show that every positive even integer is in the form of $2n$, and every positive odd integer is of the form of $2n + 1$
- Check if 15^n end with digit 0
- Find the prime factors of 4825
- Show that $3\sqrt{2}$ is an irrational number

3.) Attempt the following questions. Each question carries three marks

(18)

- An army contingent of 616 members is to march behind an army band of 32 members in a parade. The two groups are to march in the same number of columns. What is the maximum number of columns in which they can march?
- Find the LCM and HCF of the following pairs of integers and verify that $\text{LCM} \times \text{HCF} = \text{product of the two numbers}$ 26 and 91
- Prove that $\sqrt{2} + \sqrt{3}$ is an irrational number
- Find the H.C.F. and L.C.M. of 25152 and 12156 by using the fundamental theorem of arithmetic
- Show that square of any positive integer can be expressed as $3m$ or $3m + 1$

6. Without actually performing the long division method, state whether the following rational numbers will have a terminating decimal expansion or not

(i) $\frac{12}{75}$

(ii) $\frac{7}{300}$

(iii) $\frac{11}{5^3 \times 2^3 \times 7^5}$

4.) Attempt the following question. Each question carries five marks

(08)

1. Find the H.C.F. of 65 and 117 and express it in the form of $65m + 117n$
2. Prove that $\sqrt{2}$ is an irrational number by contradiction method

ALL THE BEST