Lesson Based Assessment Test
Chapter : Real Numbers

Marks : **20** Subject : **Mathematics** Time : **40 Minutes**

General Instructions :

- This question paper has a total of 11 questions; questions have been selected and prepared from the comprehensive question bank of lesson-based assessment.
- Any missing data may be suitably assumed and follow the instructions given for the questions.
- No space is provided for rough work in this question paper.
- The time allotted for answering the question paper is given at the top of the question paper and the numbers given on the right side indicate the full marks for the questions.

I. For each of the following questions/incomplete statements, four alternatives are given. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer with its letter. **3 × 1 = 3**

1. $\sqrt{7}+\sqrt{7}+\sqrt{7}$ is a/an

(A) Rational number **(B)** Irrational number

(C) Integer **(D)** Natural number

2. Any composite number can be expressed as the product of

(A) Even numbers **(B)** Odd numbers

(C) Prime numbers **(D)** Square numbers

3. The H.C.F of any two consecutive natural numbers is,

(A) 0 **(B)** 1 **(C)** 2 **(D)** 3

II. Answer the following questions. **3 × 1 = 3**

4. If $200 = 2^m \times 5^n$, then find the value of m and n.

5. If the L.C.M of two co-prime numbers is 391, write their H.C.F.

6. Express 140 as the product of prime numbers.

III. Answer the following questions. **2 × 2 = 4**

7. Prove that $4\sqrt{3}$ is an irrational number.

8. Prove that $3 + 2\sqrt{5}$ is an irrational number.

IV. Answer the following questions. **2 × 3 = 6**

9. According to fundamental theorem of arithmetic, if $40 = x^y z$, then find the value of *x*, y and z.

10. $a = 2^x \times 3^2$ and $b = 2^3 \times 3^y$. If their H.C.F is $2^2 \times 3^2$ and their L.C.M is $2^5 \times 3^4$, find *x* and y.

V. Answer the following questions. **1 × 4 = 4**

11. Prove by contradiction that $15\sqrt{7}$ is an irrational number.