Physics Sample Paper - Answer Key

1) Explain why the number 7 × 11 × 13 + 13 is a composite number.

[Marks: 2]

Solution:

The given number can be written as 7 × 11 × 13 + 13. By taking 13 as a common factor, the expression becomes: 13 × (7 × 11 + 1). On simplifying, we get: 13 × (77 + 1) = 13 × 78. Since the number can be expressed as a product of two integers (13 and 78), it has factors other than 1 and itself. A composite number is defined as a number that has more than two factors. Therefore, 7 × 11 × 13 + 13 is a composite number.

Difficulty: Medium