



B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL



PRE MID TERM EXAMINATION 2025-26 APPLIED MATHEMATICS

Class: XI B
Date: 04/08/25
Admission no:

Time: 1hr
Max Marks: 25
Roll no:

General Instructions:

Question 1 to 5 carries ONE mark each. Questions 6 to 9 carries TWO marks each.
Questions 10 to 13 carries THREE marks each.

1. The value of $2[3 \times 7(7 - 5) - 37]$ in binary number system is:
a) $(1011)_2$ b) $(1001)_2$ c) $(1010)_2$ d) None of these
 2. The sum of $(10111)_2$ and $(1111)_2$ is :
a) $(111111)_2$ b) $(101111)_2$ c) $(100110)_2$ d) $(01010101)_2$
 3. $(256)^{0.16} \times (256)^{0.09}$ is equal to:
a) 4 b) 16 c) 32 d) 64
 4. If $\sqrt{2^n} = 64$, then the value of n is :
a) 2 b) 4 c) 8 d) 12
 5. The value of $\log_5 \left(\frac{1}{125} \right)$
a) 1 b) 3 c) -3 d) $1/3$
 6. Divide: 101010 by 110.
 7. Solve for x: $\log_{27} x = \frac{4}{3}$.
 8. Find the value of $\log_{0.5} 256$.
 9. Solve for x: $\log_{10}(10x + 5) - \log_{10}(x + 4) = \log_{10} 2$.
 10. Find the product of 45 and 107 using binary numbers and check the answers.
 11. Express as the logarithm of a single number: $\frac{2}{3} \log 8 - 2 \log 3$
 12. If $a^x = b^y = c^z$ and $b^2 = ac$, prove that $y = \frac{2xz}{x+z}$
 13. Evaluate with the help of logarithm: $\frac{0.9876 \times (16.42)^2}{(4.567)^{1/3}}$.
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