St John Baptist De La Salle Catholic School, Addis Ababa

Grade 9 Mathematics Entrance Examination

July, 2023

Name:_____ Roll Number:_____ Section:____Time Allowed: **30 minutes**

Multiple Choice Questions

1. Which one of the following statements is not true?
   A. The square of a real number is always positive   B. The cube of a real number can be negative
   C. The cube root of a number can be negative   D. The square of a real number can be negative

2. Consider an integer n, such that $-3 < n < 7$. What is the probability that when n is selected at random, n is 0?
   A. $\dfrac{1}{9}$ B. $\dfrac{1}{8}$ C. $\dfrac{1}{10}$ D. $\dfrac{1}{7}$

3. A right angled triangle also happens to be isosceles, what are the measures of its interior angle?
   A. $90^0, 30^0, 60^0$ B. $90^0, 45^0, 45^0$ C. $60^0, 60^0, 60^0$ D. $90^0, 10^0, 80^0$

4. A quadrilateral is inscribed in a circle. If one of its angles measures 100^0, what is the value of the angle opposite to it?
   A. 70^0 B. 80^0 C. 90^0 D. 100^0

5. What is the value of $\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{1024}}}}}$?
   A. 2   B. $\sqrt{2}$ C. $2\sqrt{2}$ D. $\sqrt{32}$

6. A 12m high pole casts a shadow of 5m. What is the distance from the top of the pole to the tip of the shadow?
   A. 12 m   B. 13 m   C. 5 m   D. 17 m

7. Which one of the following set of numbers can't be assigned to the lengths of the sides of a right angled triangle?
   A. 4,3,5   B. 6,8,10   C. 12,3,15   D. 2,2,4

8. Which of the following is true?
   A. $\sqrt{a} = a^2$ B. $\sqrt{a} = a^{\frac{1}{3}}$ C. $a^{xy} = a^{xy}$ D. $a^x a^y = a^{\frac{y}{x}}$

9. For the expression $\dfrac{2y}{x}$, what are the limitations we have?
   A. $x \neq y$ B. $y \neq 0$ C. $x \neq 0$ D. $x \neq 1$

10. If $a^{\frac{-1}{2}} = x$, where a ¿ 0 and x ¿ 0, which of the following equations gives a in terms of x?
    A. $a = \dfrac{1}{\sqrt{x}}$ B. $a = \dfrac{1}{x^2}$ C. $a = \sqrt{x}$ D. $a = -x^2$

11. A farmer can pick 12 cabbages in 1 hour. Working at the same rate, how long in hours would it take two farmers to pick 48 cabbages?
    A. 1   B. 2   C. 6   D. 4   E. 8

12. Which of the following is NOT a positive multiple of $9 + 3$?
    A. 3   B. 12   C. 24   D. 48   E. 60

13. Lydia can run at a pace of 6 miles per hour. Running at the same rate, how many miles can she run in 90 minutes?
    A. 4   B. 6   C. 8   D. 9   E. 12

14. Two consecutive integers m and n are prime numbers. Which of the following is equal to mn?
    A. 1   B. 2   C. 6   D. 9   E. 15

15. If $x + 1 = 23$, what is the value of $3x + 3$?
    A. 22   B. 46   C. 66   D. 69   E. 72

Answer Sheet

1._____   6._____   11._____

2._____   7._____   12._____

3._____   8._____   13._____

4._____   9._____   14._____

5._____   10._____   15._____