

LEMLEM KG-PREPARATORY SCHOOL FOR HIGHER EDUCATION APTITUDE
MATHEMATICS MODEL EXAM FOR GRADE 12, 2012 EC **TIME-1hr**

DIR.1 CHOOSE THE CORRECT ANSWER FROM THE GIVEN ALTERNATIVES

- The square of a natural number is between 1400 and 1500 the number must be between?
 A. 30 and 35 B. 35 and 40 C. 40 and 45 D. 45 and 50
- Which of the following is the smallest?
 A. 40% of 450 B. 25% of 800 C. 60% of 900 D. 55% of 600
- What is the value of $(2+7^2) \div 17 - (x - 2)$ when $x=3$ is?
 A. 0 B. 1 C. 2 D. 3
- What is the decimal equivalence of $(\frac{1}{3})^4$?
 A. 0.002351 B. 0.000124 C. 0.143 D. 0.0123
- How many multiples of 3 are there between 11 and 106, inclusive?
 A. 30 B. 32 C. 34 D. 31
- If $B=5x+8$, and x is increased by 3, what will be the corresponding increase in B?
 A. 15 B. $3x$ C. $6x$ D. 12
- If $x>0$, $\frac{x}{30} + \frac{x}{60}$ is what per cent of x ?
 A. 15% B. 6% C. 5% D. 9%
- Which of the following is the correct comparison of the quantities given below

QUANTITY A	QUANTITY B
$\frac{75x^2+30x+3}{(5x+1)^2}, x \neq \frac{-1}{5}$	3

- Quantity A > Quantity B B. Quantity A < Quantity B
 - cannot be determined D. Quantity A = Quantity B
- 15% of 64 are equal to 5% of what number
 A. 282 B. 192 C. 96 D. 32
 - What is the permutation of the word "ADDIS" taking all of them at a time?
 A. 60 B. 120 C. 48 D. 24
 - If $-2x+12=22$, what is the value of the fifth root of $-2x+22$?
 A. 3 B. 4 C. 2 D. 5

12. Consider the following two quantities.

Quantity A	Quantity B
$5^{26} + 5^{26} + 5^{26} + 5^{26}$	5^{27}

- A. Quantity A is less than Quantity B
- B. The two quantities are equal
- C. Quantity A is greater than Quantity B
- D. The relationship cannot be determined from the information given

13. When 11 is divided by a natural number q , then the remainder is $11-q$. Which of the following could be the value of q ?

- A. 6 B. 5 C. 4 D. 7

14. If $(\frac{1}{4})^m = \sqrt{3}$ and $(\frac{1}{3})^n = 2$, then $\frac{mn}{5}$ is equal to

- A. $\frac{1}{15}$ B. $\frac{1}{20}$ C. $\frac{1}{5}$ D. $\frac{1}{2}$

15. What is the sum of $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \dots + \frac{1}{59049}$?

- A. $\frac{59032}{118098}$ B. $\frac{59024}{118098}$ C. $\frac{59048}{118098}$ D. $\frac{59012}{118098}$

16. The population of a certain city increased from 160,000 to 240,000 in a decade. The average per cent increase of the population per year is?

- A. 5% B. 5.25% C. 8.02% D. 7%

17. Which of the following is the largest fraction?

- A. $\frac{2}{3}$ B. $\frac{5}{9}$ C. $\frac{3}{5}$ D. $\frac{2}{5}$

18. Which of the following is equal to $\frac{6^5 - 6^4}{5}$?

- A. $\frac{1}{5}$ B. $\frac{6}{5}$ C. 6 D. 6^4

19. On an exam containing 80 questions, Tigist answered 75% of the first 60 questions correctly. What per cent of the other 20 questions does she need to answer correctly for her grade on the entire examination to be 80 %?

- A. 80% B. 95% C. 90% D. 100%

20. If $\frac{1}{6}$ of a certain number is $8\frac{1}{4}$ the same number is?

