

LAGOS CITY POLYTECHNIC, IKEJA
SCHOOL OF MANAGEMENT AND BUSINESS STUDIES
DEPARTMENT OF GENERAL STUDIES
2015/2016 SEMESTER EXAMINATION

COURSE TITLE: TRIGONOMETRY AND	ANALYTICAL GEOMETRY
NO OF COURSE CODE: MTH 112B	QUESTION: 6
FOR WHOM: ND CE, EE	TIME: ALLOWED: 2HRS
	FT INSTRUCTIONS:

Answer any

- 4 Questions**
1. (a) In how many ways can a boy and a girl be selected from a group of five boys and 8 girls.
 - (b) In many automobile licence plate can be made if an inscription on each contain four different letters followed by three different digits.

E A L G 4 6 8
 2. (a) Simplify $\frac{45 \times 5 \times 7 \times 2}{3 \times 21}$
 - (b) $\frac{18 \times 20 \times 24}{8 \times 30 \times 9}$
 - (c) $3 \times 50 \times 5 \times 32 + 4 \times 8$
 3. (a) Simplify $\sqrt[3]{\frac{38.32 \times 2.964}{8.637 \times 6.285}}$
 - (b) Evaluate $6D^3 = \frac{0.53F \times 35R^2 \times 4.5J}{13V \times 8.43T \times 0.04S}$
 where $D = 40, F = 100, R = 6, J = 16, V = 10, T = 5, S = 200$
 4. (a) Evaluate (i) $\log_2 4$ (ii) $\log_{10} 100$ (iii) $\log_5 25$ (iv) $\log_{16} 0.25$ (v) $\log_9 \frac{1}{27}$
 - (b) Assuming only that $\log_{10} 2 = 0.3010, \log_{10} 3 = 0.47$
 $\log_{10} 7 = 0.8451$ evaluate
 (i) $\log_{10} 35$ (ii) $\log_{10} 42$ (iii) $\log_{10} 3.75$
 5. (a) The sum of a consecutive terms of a arithmetical progression is $17\frac{1}{2}$, the first term is $14\frac{1}{2}$ and the common difference is 5. Find the number of terms.
 [Hint : $S_n = \frac{n}{2} \{2a + (n - 1) d\}$]
 - (b) The Geometrical progression, has the sum of the second and third terms to be 8, and the sum of the third and fourth is 32, find the first term and the common ratio.
 6. (a) Evaluate $(3x + y)^5$
 - (b) Solve $\frac{3}{x} = 2x + 7$
 - (c) Find $\sin (120^\circ + 45^\circ)$ without using calculator.