# NEB-GRADE XI 2076 (2019)

## Mathematics

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Time: 3 hrs.

Full Marks: 100

Pass Marks: 35 (For partial students only)

Attempt all questions.

$$5 \times 3 \times 2 = 30$$

- a. Find the truth value of the biconditional statement of p and q where p represents '2 is an even number' and q represents '4 is an even number'.
  - b. If  $f: \Re \rightarrow \Re$  be defined by f(x) = 2x 3, find  $f^{-1}$
  - c. Test the even or odd nature and symmetricity of the function  $y = 8x^2$
- a. Express tan-1x in terms of inverse of sin function.
  - b. Prove by mathematical induction:  $l+3+5+...+(2n-1)=n^2$
  - c. Find the adjoint of the matrix  $\begin{pmatrix} 2 & 5 \\ 3 & -7 \end{pmatrix}$
- 3. a. Using Cramer's rule, solve: 3x + 2y + 9 = 0, 2x 3y + 6 = 0
  - b. Express  $\sqrt{3} + i$  in polar form.
  - c. If one root of the equation  $ax^2 + bx + c = 0$  be twice the other, show that  $2b^2 = 9ac$
- 4. a. Find the equation of the straight line that has y- intercept '2' and is parallel to 4x-8y+3=0
  - Find the equation of the circle which passes through origin and makes equal intercepts on both axes.

c. Evaluate:  $x \to 0$  1-cos nx

# **Mathematics Question Paper March 2memo Grade 11**

**R Sandford** 

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