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**D. K. M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1**

**SEMESTER EXAMINATIONS**

**NOVEMBER - 2017 15CMA1A / CMA1A**

**ALGEBRA**

**Time : 3 Hours Max. Marks : 75**

**Section – A (10 x 2 = 20)**

**Answer ALL the questions.**

1. *If and are the roots of , find*
2. *Multiply the roots of by 10.*
3. *Write down the formula for Newton’s method.*
4. *State Descartes rule of signs.*
5. *Find the coefficient of in the expansion of*
6. *Show that*
7. *Prove that .*
8. *Find the eigen values of*
9. *Find the number of integers less than 500 and prime to it.*
10. *Find the number of divisors of 140 and their sum.*

**Section – B ( 5 x 5 = 25 )**

**Answer any Five of the following questions.**

1. *Solve the equation given that is a root.*
2. *If and are the roots of find the value.*
3. *Evaluate to four decimal place by Newton’s method.*
4. *Sum of the series.*
5. *Find the sum to infinity the series .*
6. *Find the rank of the matrix .*
7. *Find the eigen values of*
8. *Find the highest power of 2 in 1000.*

**Section – C ( 3 x 10 = 30 )**

**Answer ALL the questions.**

1. *(a) Diminish the roots of by 2 and solve the transformed equation.*

*(Or)*

*(b) Solve*

1. *(a) Find the negative root of the equation correct to two decimal places by*

*Horner’s method.*

*(Or)*

*(b) Show that*

1. *(a) Verify Cayley Hamilton theorem for*

*(Or)*

*(b) Prove that is divisible by 437.*

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