This question paper contains 7 printed pages]

Code No. : 15(I) *Roll No. .....*

0(CCEM)9

MATHEMATICS

Paper : I

Time Allowed : 3 hours] *[Maximum Marks : 300*

Note : *(i) Answers must be written in* ***English****.*

(ii) Number of marks carried by each question are indicated at the end of the question.

(iii) Part/Parts of the same question must be answered together and should not be interposed between answers to other questions.

(iv) The answer to each question or part thereof should begin on a fresh page.

(v) Your answers should be precise and coherent.

(vi) Attempt any ***five*** *questions. Question No.* ***1*** *is* ***compulsory****.*

1. (a) Show that $T : R^3 \to R^3$ defined by is a linear transformation. Find the matrix representation of T with respect to the basis :

$$B = \{(1,0,1), (0,1,1), (0,1,0)\} \text{ of } R^3 .$$ 30

P. T. O.