4E 2114

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B.Tech. IV Semester (Main/Back) Examination - 2012
Electrical Engineering
4EE6 Advanced Mathematics

Time : 3 Hours

Maximum Marks : 80

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **Five questions** selecting **one question** from **each unit**. All questions carry **equal marks**. (Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.) Units of quantities used/calculated must be stated clearly.*

Unit - I

1. a) The following table gives the population of a town during the last six census. Estimate using any suitable interpolation formula, the increase in the population during the period from 1946 to 1948. **(8)**

Year :	1911	1921	1931	1941	1951	1961
Population :	12	15	20	27	39	52

b) Obtain the value of $\sqrt{12}$ to four places of decimals by Newton-Rapson method. **(8)**

OR

1. a) Using Langranges's formula for inverse interpolation to obtain the value of x for which $y = 7$ from the following data : **(8)**

x :	1	3	4
y :	4	12	19

b) Solve :

$$a_1 x + b_1 y + c_1 z = d_1$$
$$a_2 x + b_2 y + c_2 z = d_2$$
$$a_3 x + b_3 y + c_3 z = d_3$$

by Gauss - Seidal Method. **(8)**