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| KLS Gogte Institute of Technology (Autonomous), Belagavi - Department of Mathematics  Subject: **Engineering Mathematics – III** Academic Year: 2016-17 Code: **15MAT31**  Semester: **III** (All Branches) **Internal Assessment Test – II** Date: 07 –10 – 2016  Max. Marks: 25 Duration: 1 Hr **.**  **Instructions: Answer all FIVE questions.** (each question carries FIVE marks)   1. Find a root of the equation correct to three decimal places by fixed point iteration method. [L3,a] 2. Find y(0.2) for using Taylor’s series, given that y(0)= 0. Compare with exact solution. [L2,a] 3. Using fourth order Runge-kutta method find y at x=0.2 in steps of 0.2, if , given that y(0)=1. [L2,a] 4. If is pull required to lift a load by means of a pulley block, find a linear law of the form connecting and , using the following data: [L2,a]  |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | 12 | 15 | 21 | 25 | |  | 50 | 70 | 100 | 120 |  1. An experiment gives the following values:  |  |  |  |  |  | | --- | --- | --- | --- | --- | | (ft/min) | 350 | 400 | 500 | 600 | | t (min) | 61 | 26 | 7 | 2.6 |   It is known that and t are connected by the relation . Find the best values of a and b. [L3,a] |

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