Errata

January 23, 2020

Errata is given below for the various questions and solutions provided in the course - Engineering Mathematics for Higher Studies - Autumn 2019, IIT Dharwad.

Note - Either the corrections were told during the examination or those questions were given full credits during grading

1. LinA Final Exam Q10:

$$T(\alpha u_1 + \beta u_2) = \alpha T(u_1) + \beta T(u_2)$$

2. LinA Final Exam Q11 a): Required answer for $\vec{e}$

$$\vec{e} = \vec{b} - \vec{p}$$

where $\vec{p}$ is projection vector.

$$e = \begin{bmatrix} -\frac{2}{3} \\ \frac{1}{3} \\ \frac{1}{3} \end{bmatrix}$$

3. LinA Final Exam Q6: Typo in Answer

$$L = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 1 & 0 \\ 1 & 1 & 1 \end{bmatrix}$$

4. ODE Q8: Answer multiplies by polar form of $(1 + 8i)$instead of $1/(1+8i)$. Correct final answer :

$$y_p = \frac{1}{\sqrt{65}} e^{i(8t-\theta)}$$

where $\theta = tan^{-1}(8)$

5. ODE Quiz 01 Soln Q5 : $M = \frac{-13}{41}$ $\quad$ $N = \frac{-6}{41}$

6. Vector Calc. A02 Q4 : Direction derivative $\frac{7}{3}$

7. Numerical Method Final Exam Q6a) : TRUE

8. Numerical Method Final Exam Q7 : half band width is 3

9. Numerical Method Final Exam Q14 : This question is incorrectly posed. If second and third derivatives are assumed to be same and higher order terms are neglected in the error, then one can say Central Difference method is more accurate for approximating first derivative.

10. Numerical Methods Assignment 02 Q4 : In solutions -> Last equation should be $y_4' = 3y_3 - y$