Department of Data Science & Computer Applications,

Manipal Institute of Technology, Manipal

**DSE 3159 DEEP LEARNING LAB**

OBSERVATION BOOK

**Name:**

**Registration No:**

**Batch No: B2**

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**Q1)** Accurate measurement of body fat is inconvenient/costly and it is desirable to have easy methods of predicting Body Fat. Using the Body Fat dataset, write a Neural Network to predict body fat:

a. Number of Hidden layers = 3 and number of units are 128,64,32

b. Use RELU activation function, let learning rate be 0.1

Split the data into (80,20) split and tabulate the performance in terms of RMSE for100 epochs and comment on performance.

The attributes of the dataset are :

1. Density determined from underwater weighing

2. Percent body fat from Siri's (1956) equation

3. Age (years)

4. Weight (lbs)

5. Height (inches)

6. Neck circumference (cm)

7. Chest circumference (cm)

8. Abdomen 2 circumference (cm)

9. Hip circumference (cm)

10. Thigh circumference (cm)

11. Knee circumference (cm)

12. Ankle circumference (cm)

13. Biceps (extended) circumference (cm)

14. Forearm circumference (cm)

15. Wrist circumference (cm)

**Code:** <font size: 14>

<paste your well documented code with answers to the questions, asked in the exercise, written as comments> <font size: 12>

**Results & Discussion:** <font size: 14>

<Paste your best training validation plots, testing results and confusion matrices here. Also discuss the results obtained.> <font size: 12>