Assignment 2: Numpy Exercises

Solve the following and submit the answers on moodle. (Single pdf file)

1. Import the numpy package under the name np
2. Print the numpy version and the configuration
3. Create a null vector of size 20 and show the output.
4. Create a null vector of size 10 but the fifth value should be 1. Show the output.
5. Create a vector with values ranging from 10 to 49
6. Reverse a vector (first element becomes last)
7. Write code to create a 4x3 matrix with values ranging from 2 to 13.
8. Find indices of nonzeroelements from [1,2,0,0,4,0]
9. Create a 3x3 identity matrix
10. Create a 3x3x3 array with random values
11. Create a 10x10 array with random values and find the minimum and maximum values
12. Create a random vector of size 30 and find the mean value
13. Create a 2d array with 1 on the border and 0 inside
14. Create a 8x8 matrix and fill it with a checkerboard pattern
15. Multiply a 5x3 matrix by a 3x2 matrix (real matrix product)
16. Given a 1D array, negate all elements which are between 3 and 8, in place.
17. What is the output of the following script?
18. Create a random vector of size 10 and sort it
19. Create random vector of size 10 and replace the maximum value by 0
20. Perform the following operations on an array of mobile phones prices 6999, 7500, 11999, 27899, 14999, 9999.
    a. *Create a 1d-array of mobile phones prices*
    b. Convert this array to float type
    c. Append a new mobile having price of 13999 Rs. to this array
    d. Reverse this array of mobile phones prices
    e. Apply GST of 18% on mobile phones prices and update this array.
    f. Sort the array in descending order of price
    g. What is the average mobile phone price
    h. What is the difference b/w maximum and minimum price