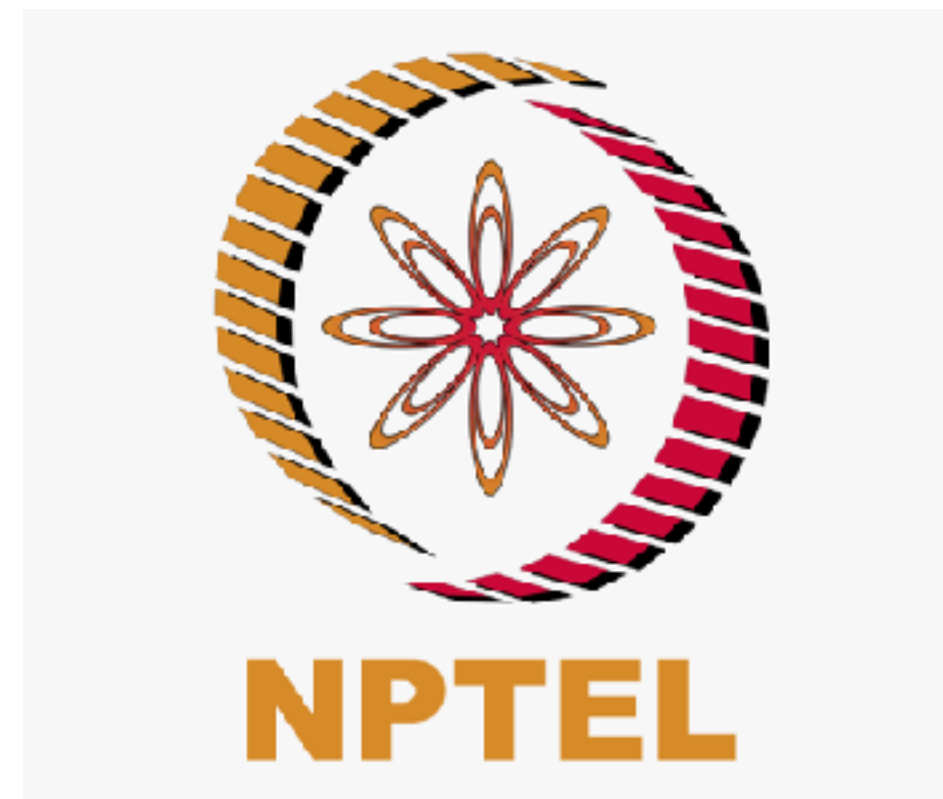


Scientific Computing using Matlab

Live session - Week 1



Anu V. S. Nath
PMRF Research Scholar
Department of Applied Mechanics
IIT Madras, Chennai

1. What does Matlab stand for ?

A. Math Laboratory

B. Matrix Laboratory



C. Mathworks

D. None of these

NPTEL

2. Which of the following will correctly define x, y and z as symbols ?

A. `sym(x, y, z)`

B. `syms x y z`



C. `syms x, y, z`

D. `sym x, y, z`

NPTEL

3. Which statement below will result in the variable `y` containing `[1 3 5 7]`?

A. `y = linspace(1,7,4)`



B. `y = oddnums(1,7)`

C. `y = 1:4:7`

D. `y = 1:2:7`



NPTEL

4. After the code below executes , what does the variable y contain?

```
x = linspace(0,pi,10);
```

```
y = cos(x(10));
```

A. -1



B. 0

C. +1

D. Some number that is not -1, 0 or +1

NPTEL

5. Which of the following is not an acceptable name for a Matlab variable ?

A. 2index



B. INDEX

C. index_2

D. index2

NPTEL

6. How many errors will Matlab show if the following code entered?

```
A = [1;2;3];
```

```
B = [1 2];
```

```
C = A .* B;
```

```
D = C * A;
```

A. 2

B. 1




C. No error

D. 4

NPTEL

7. Find the error in the following code?

```
x = -10 : 1 : 10; y = -10 : 2 : 10; plot(x,y)
```

- A. Plot is not available in Matlab
- B. Syntax of plot is wrong
- C. Length of x and y should be same 
- D. No error

NPTEL

8. What are the functions to see the graph of a continuous and a discrete function ?

A. plot() & stem()



B. cont() & disc()

C. plot() & disc()

D. cont() & stem()

NPTEL

9. Suppose you have a matrix

$$\mathbf{x} = \begin{pmatrix} 1 & 2 & 3 & 4 \\ 3 & 4 & 5 & 6 \end{pmatrix}$$

Which of the following will evaluate to $\begin{pmatrix} 3 \\ 5 \end{pmatrix}$

A. $\mathbf{x}(3)$

B. $\mathbf{x}(3, :)$

C. $\mathbf{x}(:, 3)$




D. None of these

NPTEL

10. Which of the commands below you use to define this function

$$f(x) = \frac{e^x}{x} + \sqrt{x}$$

A. `f = (x) exp(x)/x+sqrt(x)`

 B. `f = @(x) exp(x)/x+sqrt(x)`

C. `f = @(x) e^x/x+sqrt(x)`

D. `f = (x) e^x/x+x^1/2`

NPTEL

11. What will be the output of the following code in Matlab?

```
a = 2 : 4 : 11
```

A. `a = [2 6 10]`



B. `a = [2 5 8]`

C. `a = [2 4 11]`

D. None of these

NPTEL

12. Consider the matrix A,
 $A = [3, 1, 4; 0, -2, 1; 0, 4, 5]$

Which Matlab command for the matrix A, will lead to some error?

A. `size(A)`

B. `[A,A]`

C. `[A;A]`

D. `det(A)`

NPTEL

Ans: none of these

13. Consider the matrix A,

$$A = [8,4;-3,6;7,9]$$

What will be the output of the command A(3, 2).

A. 7

B. 6

C. 9

D. -3



NPTEL

14. Which command will give the inverse of a square matrix X in Matlab?

A. `inv X`

B. `X^-1`

C. `inv (X)`

D. `1/X`

E. `1./X`



NPTEL

15. How many errors are in the following Matlab code?

```
sym x;  
f = x^5 + x^3 - 2 x + 1;  
factor(f ), solve(f );
```

A. 3

B. 0

C. 2

D. 4



NPTEL