



RAN - 2103000206020096

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**T. Y. B. Sc. (Sem. - VI) Examination April - 2025**

**Electronics (Paper - 11) Simulation using MATLAB**

**Time: 2 Hours ]**

**[ Total Marks: 50**

**સૂચન : / Instructions**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:  
T. Y. B. Sc. (Sem. - VI)

Name of the Subject :  
Electronics (Paper - 11) Simulation using MATLAB

Subject Code No.: 2103000206020096

Seat No.:

Student's Signature

- (2) Q. 1 is compulsory.
- (3) Figures at extreme right indicate full marks.
- (4) Draw figures/diagrams to support your answer.
- (5) Assume data, if required.

**Q. 1. Answer in brief**

**08**

1. What is command history
2. What is the use of 'y' label command?
3. Explain the sin and cos functions in MATLAB?
4. Create a vector t with 10 elements: 1, 2, 3,... 10 using MATLAB

**Q. 2. A.** What is MATLAB desktop, explain the command window, command history pane, current directory pane, Workspace pane.

**07**

**B. Write commands for the following**

**07**

1. Plotting cosine wave from 0 to 360°.
2. Squaring individual elements of a given matrix  $\begin{bmatrix} 4 & 6 \\ 5 & 7 \end{bmatrix}$

**OR**

**Q. 2. A.** Discuss the method of entering matrix in MATLAB as a variable. Discuss any two matrix operations.

**07**

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**[ 1 ]**

**[ P.T.O. ]**

**P0131**

- B.** Write a series of commands to show that given two  $3 \times 3$  matrix A and B, Matrix addition is commutative. **07**
- Q. 3. A. Discuss the following graph commands** **07**
1. Plot
  2. Xlabel
  3. Ylabel
  4. Title
  5. Grid
- B.** Plot  $y = \cos^2 x$ , for  $0 < x < 2\pi$ , taking 100 linearly spaced points in the given interval. Label the axes and put "Plot  $\cos^2(x)$  vs x" in the title. **07**
- OR**
- Q. 3. A.** Discuss the use of trigonometric and logarithmic functions in MATLAB **07**
- B.** The equation of a straight line is  $y = m \cdot \log(x) + c$ , where m and c are constants. Compute the y-coordinates of a line with slope  $m = 2.5$  and the intercept  $c = 3$  at the following x-coordinates:  $x = 0, 1.5, 3, 4, 5, 7, 9$  and 10. **07**
- Q. 4. A. Write short notes** **14**
1. Arithmetic operators of MATLAB
  2. Getting help in MATLAB
  3. Simulink
  4. Creating and executing MATLAB script files
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