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Odd Semester Examination 2022

Paper Name: IT Workshop (Sci Lab/ MATLAB) (Lateral Entry)
Time: 3 Hours

Paper Code: BTCSE 305
Maximum Marks: 75

Course Outcomes:

CO1: Demonstrate programming in Scilab/MATLAB.

CO2: Apply simulation for the verification of mathematical functions.

CO3: Utilize main features of the MATLAB program development environment to enable their usage in the higher learning.

CO4: Develop simple mathematical functions/equations in Scilab.

CO5: Synthesize simple mathematical functions and operations using plots/display in Scilab.

Section-A				
ALL questions are compulsory in this Section (7 x 5 = 35 Marks)				
Q.No	Question	Marks	CO	BL
1.	What is Octave? Write some applications of it.	5	1	L2
2.	Assuming M to be a 5 x 8 matrix, which of the following are valid commands for Scilab? If not, write the correct command. i) M (1:, 5) ii) M (:, 5) iii) M (1:3, \$-1:\$) iv) M (:\$, 3:6) v) M (:, :)	5	4	L4 L3
3.	Write a script in Scilab to check if a number is odd or even.	5	4	L3
4.	i) M is a 5 x 5 matrix consisting only of even numbers. Write the code in Octave to create the matrix M (Assume values). ii) What is a row vector? What will be the output of below command: N=M(5,:)	5	3	L3 L1 L4
5.	Differentiate between Scilab and Octave in five points.	5	1	L2
6.	Write a program in Octave with output to do the following: i) Create a row vector <i>agevector</i> consisting of ages of five family members. ii) Display the age of third family member from row vector <i>agevector</i> . iii) Update <i>agevector</i> to display all ages after 10 years. iv) Remove the oldest family member from <i>agevector</i> . v) Display remaining members of the family using the :(colon) operator.	5	3	L3

7.	Explain the following for Scilab or Octave: i) who command ii) Variable Browser iii) ans iv) : (colon) Operator v) ; (semicolon) Operator	5	1	L2
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Section-B

Attempt any **FOUR** Questions from this Section (4 x 10 = 40 Marks)

1.	i) Using Scilab write a function to test whether a given number is odd or even. ii) Using Scilab write the code to plot a graph of Date versus Minimum Temperature for the data given in the table below: <table><tr><td>Day</td><td>6 Mar</td><td>7 Mar</td><td>8 Mar</td><td>9 Mar</td><td>10 Mar</td></tr><tr><td>Temperature(C)</td><td>18</td><td>16</td><td>17</td><td>17</td><td>17</td></tr></table>	Day	6 Mar	7 Mar	8 Mar	9 Mar	10 Mar	Temperature(C)	18	16	17	17	17	10	5	L3 L6
Day	6 Mar	7 Mar	8 Mar	9 Mar	10 Mar											
Temperature(C)	18	16	17	17	17											
2.	Write a program in Scilab with output to do the following: i) Create a matrix M of dimensions 6 x 4 (Assume values). ii) Display the fourth column and store it in a row vector N. iii) Display the odd numbers present in the matrix M. iv) Display the sum of last number of every row using the \$ sign. v) Delete the row vector N. -	10	4	L3												
3.	Differentiate between the following by writing example code in Octave or Scilab: i) For Loop & While Loop ii) Switch case & if..else condition	10	1	L2 L3												
4.	Describe any 5 matrix arithmetic operations in Octave with an example for each.	10	3	L1 L3												
5.	i) Explain the various types of loops used in Octave. ii) Using a loop write a script in Octave to display the table till 10 of any number entered by the user.	10	1,3	L1 L3												
6.	Give reasons why you <i>agree</i> or <i>disagree</i> with the following statements: i) When generating a series of numbers a zero increment can be specified. ii) We can use <i>ans</i> as a variable name. iii) Graphs can be created in Octave but not in Scilab. iv) Semicolon operator ';' can be used to write multiple statements in SciNotes. v) Scilab is a case sensitive but Octave is not.	10	1	L2												

BL- Bloom's Taxonomy Levels (1 Remembering, 2 Understanding, 3 Applying, 4 Analysing, 5 Evaluating, 6 Creating)

CO- Course Outcome