

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Lab Quiz - 01 (Set-A)
Course Number: EEE 4416
Course Title: Simulation Lab

Summer Semester - 2025
Full Marks: 30
Time: 25 minutes

1. What is the role and functionality of 'workspace' in MATLAB?

Ans:

2. What is the value range of the int8 data type?

Ans:

3. What is the difference between the 'mod' and 'rem' functions in MATLAB?

Ans:

4. What do you understand by the term 'heterogeneous' datatype in MATLAB? Give a few examples.

Ans:

5. **(True/False)** In MATLAB, *zeros(3)* and *zeros(3,3)* produce identical 3×3 matrices of zeros.

Ans:

6. $X = [4, 6, 8; 2, 5, 10]$

$Y = [10, 100]$

Write the code to append Y to X (row-wise/horizontally and column-wise/vertically).

Ans:

7. $X = [4, 6, 8; 2, 5, 10]$

$Y = [10, 100]$

Which of the following is valid?

- i. $X * Y$
- ii. $X .* Y$
- iii. $X * Y'$
- iv. $X' * Y$
- v. $X' .* Y$
- vi. $X' .* Y'$
- vii. $X' * Y'$

Ans:

8. $X = [4, 6, 8; 2, 5, 10]$

$Out = X(X/2 == 1)$

What will be the output?

Ans:

9. $v = 'Bruce Wayne'$

$v[end] = ?$

Ans:

10. Give some examples of non-linear data structures.

Ans:

11. To calculate how many months have passed between two dates, which data type would you use in MATLAB?
Ans:
12. $B = \{ 'Gandalf', 'the', 'gray', 'white' \}$
Write the code to remove 'gray' from B.
Ans:
13. $S = \text{"Kratos"}$
Write the code to extract the elements that are vowels.
Ans:
14. $x = [2 \ 4 \ 5 \ 11 \ 81 \ 12 \ 81 \ 80]$
 $[val, ix] = \max(x)$
what will be the output?
Ans:
15. $r = \text{'rice'}$
 $r(\text{end}:-1:1)$
what will be the output?
Ans:
16. Consider the MATLAB commands below. What is the value of `idx` after execution?
 $A = [0 \ 3 \ 0 \ 5; -7 \ 0 \ 1 \ 4];$
 $idx = \text{find}(A > 1);$
Ans:

17. *A1 = 'MATLAB';*
A2 = "MATLAB";
var=length(A1)-length(A2)
what is the value in *var*?

Ans:

18. What does *strcmpi('Hello', 'hello')* return?

Ans:

19. Write a MATLAB command to create a column vector with elements 3, 6, 9, and 12 using the colon operator.

Ans:

20. What is the size of the matrix created by *randi(100, 4)*?

Ans:

21. *I= [30, 50, 55, 65]*
While t>0
 If mod(I, 2)
 S= 50^i
 break;
 end
 continue
end

Find the errors in the above code.

Ans:

22. *For i=1:4*
 For j= 7:-1:4
 *X= i*j;*
 end
end

What is the output X?

Ans:

23. What does *numel([1, 2, 5; 4, 5, 5])* return?

Ans:

24. Write the code that will take 'n' as input and create a matrix representing 'T' using 0 and 1.

For odd values of n, say, n=3,

```
[1 1 1
 0 1 0
 0 1 0]
```

For even values of n, say, n=4,

```
[1 1 1 1
 0 1 1 0
 0 1 1 0
 0 1 1 0]
```

Ans:

25. What will be the output of the following code?

```
sum = 0;
for i = 1:2:5
    sum = sum + i;
end
disp(sum)
```

Ans:

26. Categorize the following variable names as 'invalid', 'valid', or 'should avoid'.

- i. 12a
- ii. Val
- iii. prod
- iv. FOR
- v. hello
- vi. 1st_val
- vii. Value of a
- viii. i
- ix. j

Ans:

27. How do you convert a 2D array into a 1D array/vector?

Ans:

28. What is the linear index and subscript of element 8 in matrix $A = [6 \ 8 \ 1; 6 \ 9 \ 0]$?

Ans:

29. Write the matlab code to find the row-wise sum of matrix A without using a loop?

Ans:

30. What is the output of $\text{fix}(-\pi)$?

Ans: