**MATRIX**

**MATLAB CODING EVENT**

**Instruction:** Email the answers to the questionnaire to **probe.events2020@gmail.com** with “Matrix\_<*your team name*>” as the subject. Also mention the **names** and **Probe IDs** of **all the team members** in the Email. **Deadline: 24th January 2020**.

**For help, refer** <https://www.mathworks.com/help/matlab/> (The official documentation of MATLAB from MathWorks)

To practise, make use of MATLAB Live Editor <https://in.mathworks.com/products/matlab/live-editor.html>

Questions 1-4 are Multiple Choice Questions. Indicate the correct option against “Answer:”.

1. **Which of the following is not a pre-defined variable in MATLAB?**
   1. pi
   2. inf
   3. i
   4. epsilon
   5. nan

**Answer:**

1. **Which one of the following are legal MATLAB variable names?**
2. probe-2020, time
3. itsmyTime, 1stPlace
4. MyScore1, probe\_ID
5. 2nd\_Team, my'country
6. Matrix\_, 1S\_Reloaded

**Answer:**

1. **Which command lists the Graphic Processor details present in your PC (if it exists)?**
2. gpuList
3. GPUdevice
4. list\_gpu\_devices
5. gpuDevice
6. listCUDA

**Answer:**

1. **Which of the following is used to see if two elements are equal in MATLAB?**
2. !=
3. ==
4. isequal
5. =
6. =?

**Answer:**

1. **Write a MATLAB code to perform convolution of x[n] = {1, 2, 1, 2, 1} and h[n] = {1, -2, 0, 1} using only one loop.**

**Code:**

1. **a=60, b=43, then bitor(a,b)+bitshift(a,2)+bitshift(b,-2) gives:**

**Answer:**

1. **a = [9 8 7; 6 5 4; 3 2 1]**

**b = [1 2 3; 4 5 6; 7 8 9]**

**c = [2 3 1; 4 7 8; 3 9 0]**

**Concatenate all these three matrices into a three-dimensional array and name it as d. Then what will be the result of expression d(1,:,3)?**

**Answer:**

1. **A = [1 2 3 4; 4 5 6 7; 7 8 9 10]**

**Which MATLAB expression is used to print submatrix containing the intersection of second and third rows, second and third columns?**

**Answer:**

1. **x = [58 -58 58 -58]**

**y = [10 10 -10 -10]**

1. **Write expression to concatenate x,y,rem(x,y) and mod(x,y).(result is 4x4 matrix)**
2. **State TRUE or FALSE: rem(x,y) and mod(x,y) produce the same result if x and y have the same sign; the result also has that sign. But if x and y have opposite signs, then rem(x,y) has the same sign as y, while mod(x,y) has the same sign as x.**

**Answer:**

1. **2x - y + z = 3**

**5x + 2y - 3z = 1**

**2x + y -z = 2**

**Solve the above linear equations using MATLAB code.**

**Code:**

1. **Compute the value of the following function**

**using only one loop.**

**Code:**

1. **Write MATLAB code to do the following:**

**Step 1: Read an image**

**Step 2: Shrink the image by factor of 2**

**Step 3: Display the original and modified image**

**Code:**

1. **Write MATLAB code for producing a 3d plot for the equation z = sin(x) + e^(y) where -pi <= x <= pi; -2 <= y <= 2**

**Code:**

1. **Write a single line code to generate a matrix of complex numbers with 20 evenly spaced points between 1+2i and 3+4i**

**Code:**

1. **Write a single line code to produce the following result.**

**Input A = [0.9157 0.7922 0.9595 0.6557 0.0357 0.8491 0.9340]**

**Result = [0.0357 0.8491 0.9340 0.9157 0.7922 0.9595 0.6557]**

**Code:**

Best of Luck!

**For queries, mail us at probe.events2020@gmail.com**