QUESTION 8.

ANS :-

% Define image size

imageSize = [256, 256];

% Create a grid of coordinates

[~, y] = meshgrid(1:imageSize(2), 1:imageSize(1)); % Adjusted for horizontal direction

% Define frequencies

frequencies = [1, 10, 20];

% Generate sinusoidal waves

sinusoidalWaves = zeros([imageSize, numel(frequencies)]);

for idx = 1:numel(frequencies)

sinusoidalWaves(:,:,idx) = sin(2 \* pi \* frequencies(idx) \* y / imageSize(1)); % Adjusted for horizontal direction

end

% Display the generated waves

figure;

for idx = 1:numel(frequencies)

subplot(1, numel(frequencies), idx), imshow(sinusoidalWaves(:,:,idx), []), title(['Frequency ', num2str(frequencies(idx))]);

end