



Ministry of Higher Education and
Scientific Research
University of Technology
Computer Sciences Department



Date: /6/2016
Time: 3 hours
Lecturer: Dr. Abdulameer

Final Exam 1st trail 2015-2016

Subject: **Multimedia**
Class: **fourth**
Branch: **networks**

Note answer five questions where each question is of 10 degrees

Q1. Answer only **three**.

- List the types of distance learning.
- Briefly describe the video streaming methods.
- How does latency time effected on live video streaming, explain.
- Describe in details the audio filtering.

Q2. Scale the square (2,3), (10,3), (2,11), (10,11) so that it's new area will be **0.25** as it's original area and the **center** of the square being the **fixed point**.

Q3. enlarge the below image so that it's new size will be 5×7 (i.e. 5 rows and 7 columns).

20	50	65
90	60	45
40	10	25

Q4. a. apply the image translation to the below subimage , so that the new subimage will be shifted three pixels to the left. Assume that the first pixel (shaded pixel) coordinates is (10,12), give the value and the coordinate for each pixel after translation.

5	8	12
19	14	16
20	21	25

b. Given a TV uses NTSC standards, calculate :

- The number of pixels this TV emit per frame.
- The number of lines this TV emit per second.
- The number of pixels this TV emit per second.

Q5. A video uses PAL standard , where the video duration is (0.5) hour, if you know that this video required 450,000 Mbit to be stored on the hard disk. Calculate the bit per frame (BF) for this video.

Q6. a. A sound signal with sampling rate of 12000 sample\second , if you know that the lowest frequency is (0.1) times of the highest frequency, find Highest and lowest frequency.

b. if the frequency spectrum of a signal has a bandwidth of (5) MHz with lowest frequency of (0.5) KHz. What should be the sampling rate according to the Nyquist theory.

Do WELL