جامعة المنصورة
كلية الهندسة
قسم هندسة الحاسبات و النظم

ثالثة قديم
امتحان مادة: تطبيقات حاسب
الزمن: ٣ ساعات

Please answer the following questions:

Q1: Write short notes for the following:

1. Aspects of Image Processing
2. Image compression importance and techniques.
3. Evaluation of the segmentation results.
4. Feature extraction.
5. Zollner lines.
6. Image interpretation.
7. Applications of color image segmentation.
8. Two dimensional thresholds.
9. VOC2010.
10. Circuit board inspection.

Q2: Write the differences between the following:

1. Stereo vision and high resolution.
2. Color and multiband images, draw an example.
3. Split-and-merge method and region-growing method, draw an example.
4. Image enhancement and image restoration.
5. Importance of image processing for humans and for machines.
6. Brightness, hue, and saturation.
7. Oversegmentation and undersegmentation, draw an example.
8. Object recognition for human and for computer vision.
9. Detection and segmentation tasks in PASCAL2 challenge.
10. Indexed image and RGB image.

Q3: Write the differences between the following:

1. Waterfall development and parallel development.
2. Planning phase steps and analysis phase steps.
3. LAN and WAN.
4. Clustered architecture and multicomputer architecture.
5. Technical requirements and Security requirements.
6. Analysis activities and design activities.
7. Prototyping and throwaway prototyping.

Q4: Write MATLAB codes for the following:

1. Reads a color image "car.tif " and convert it to a grayscale image, then display both side by side.
2. Read in 8 bit intensity image of cell "cell.tif", then examine the grey scale image in interactive viewer.
3. Resize an image "big.jpg " by 50%, then rotate it by 30 degrees.

Q5: List two applications of color image segmentation. Explain them in details according to importance and usage.

Good luck. *Dr. Abdelhameed Fawzy (9/1/2013)*