Sample questions for Computer Vision

True (T) or False (F):

1. Image registration consists of computing the geometric transformation between two data sets   T
2. Good interest point detectors should detect most of the inliers' set of points   T
3. In RS, the sensed image is transformed over the reference one according to a mapping model   T
4. CBIR systems support search by either an example or a sketch or both of them together with text search   T
5. Local feature detection means extracting feature vector descriptor surrounding each interest point   F
6. Nearest neighbor and linear or cubic interpolation are examples of feature extraction methods   F
7. Outliers represent the true matches between two sets of detected points   F
8. The similarity check between two feature descriptors can be done using Manhattan distance as a metric   T
9. Control points is another name for interest keypoints   T
10. When both Eigen values are small and **E** is almost constant in all directions, the point represents an edge   F
11. Satellite imagery includes panchromatic and multispectral images   T
12. Image transformation means removing some features or components of the image   F
13. SIFT Algorithm is robust against illumination changes but not against noise   F
14. Haar Wavelets decomposition can be used to extract texture feature from images   T
15. NNS algorithm is used to match two key-point descriptors   T
16. Image fusion is required for obtaining good image registration   F
17. Multimodal registration includes overlaying images taken from different view points   F
18. Human perception is one problem of text-based image and video retrieval   T
19. Aircraft and satellites are major platforms for the sensors   T
20. The use of simple features like color, shape or texture is usually enough for good images matching   F

Important topics:

1. Aperture problem
2. Gradient vector & magnitude
3. Computer vision applications
4. Global and local features
5. CBIR and Text-based image retrieval
6. Convolution and Correlation
7. Feature detection and description
8. Optical and radar images
9. Interest point detector.
10. Eigen values and Eigen vectors
11. Image registration
12. Image fusion
13. Remote sensing
14. SIFT and Harris detectors
15. Precision and Recall

Matching:

1	OpenCV	A	is the overlaying two or more images of the same scene taken at different times
2	Active sensing	B	is used to build an automatic extraction of features from images
3	Image Fusion	C	smooth function that has infinite number of derivatives
4	CBIR	D	emitted and reflected radiation is detected and measured
5	Passive sensing	E	is the problem of finding a related meaning between high & low level image features
6	Image matching	F	should be robust against noise and illumination changes
7	Panchromatic	G	a library of programming functions mainly aimed at real-time computer vision
8	Gaussian Filter	H	the acquisition of information about an object without physical contact
9	Multi-temporal registration	I	a high resolution grayscale image
10	Semantic gap	J	finding correspondence between descriptors in two views
11	Remote sensing	K	sun's energy that is reflected as thermal infrared wavelengths
12	Interest point detectors	L	putting together information coming from different sources / data

Some MCQ will be sent to you later

1 - G
2 - D
3 - L
4 - B
5 - K
6 - J
7 - I
8 - C
9 - A
10 - E
11 - H
12 - F