**Model Questions**

SKR/KW/24/2672/2685

**Faculty of Science & Technology**
**Eighth Semester B.Tech. (Computer Science and Engineering/IT) (CBCS) Examination**
**COMPUTER VISION**
**PROG ELE–VII**

Time : Three Hours]      [Maximum Marks : 70

### INSTRUCTIONS TO CANDIDATES

(1) Solve Question **1 OR** Question No. **2**.

(2) Solve Question **3 OR** Question No. **4**.

(3) Solve Question **5 OR** Question No. **6**.

(4) Solve Question **7 OR** Question No. **8**.

(5) Solve Question **9 OR** Question No. **10**.

(6) Due credit will be given to neatness and adequate dimensions.

(7) Assume suitable data wherever necessary.

(8) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) State and explain Fundamental Operation of Image Processing.    7

   (b) Explain the term Convolution Multiplication Property.    7

**OR**

2. (a) Explain Image Transform. State and explain the need of image transform.    7

   (b) Explain Direct Linear Transformation Method.    7

3. (a) Explain in detail about epipolar geometry.    7

   (b) State and explain various properties of fundamental matrix.    7

**OR**

4. (a) Define Skew Symmetric. State and explain Skew Symmetric with example.    7

   (b) Describe three approaches of triangular triangulation approach.    7

5. (a) Explain feature matching. State the techniques for feature matching.    7

   (b) Explain K-D tree in feature matching.    7

**OR**

6. (a) State and explain technique of random sample consensus.    7

   (b) Explain RANSAC algorithm with its advantages and disadvantages.    7

**Model Questions**

7.  (a)  State the difference between supervised and unsupervised learning.    7

    (b)  Explain K-means clustering algorithm with example.    7

**OR**

8.  (a)  Explain Back-Propagation technique with diagram.    7

    (b)  Explain Naive Bayes Classifier with its advantages and disadvantages.    7

9.  (a)  Explain Principle Component Analysis (PCA) technique with its applications.    7

    (b)  What is Sparse representation ? Explain two major approaches of it.    7

**OR**

10.  (a)  State and explain Recurrent Neural Network (RNN) with its applications.    7

    (b)  Write short notes on :

    (1)  Convolution layer

    (2)  Pooling layer.    7

Model Questions

PRS/KS/24/2949/2961

**Faculty of Science and Technology**
**B.Tech. (Computer Science and Engineering / IT) Eighth Semester (C.B.C.S.) Examination**
**COMPUTER VISION**
**Prog Elective–VII**

Time : Three Hours]                                             [Maximum Marks : 70

**INSTRUCTIONS TO CANDIDATES**

(1)  All questions carry marks as indicated.
(2)  Solve Question **1 OR** Question No. **2.**
(3)  Solve Question **3 OR** Question No. **4.**
(4)  Solve Question **5 OR** Question No. **6.**
(5)  Solve Question **7 OR** Question No. **8.**
(6)  Solve Question **9 OR** Question No. **10.**
(7)  Due credit will be given to neatness and adequate dimensions.
(8)  Assume suitable data wherever necessary
(9)  Illustrate your answers wherever necessary with the help of neat sketches.

1.  (a)  Explain different properties of Homography.                              7
    (b)  Discuss the properties of the projective camera matrix.                  7

**OR**

2.  (a)  Discuss following terms in detail :                                     10
         (1)  Noise filtering
         (2)  Gausian smoothing
         (3)  Media filtering.
    (b)  Explain properties of projective transformations.                        4

3.  (a)  Describe in detail about epipolar geometry.                              7
    (b)  Describe 3 approaches of triangular triangulation approach.              7

**OR**

4.  (a)  Illustrate terms :                                                       7
         (1)  Epipoles
         (2)  Epipolar lines
         (3)  Epipolar planes.
    (b)  What is detection of features ? Explain feature points.                  7

5.  (a)  Describe K-D tree in feature matching.                                   7
    (b)  Explain efficient computation of feature matching.                       7

**OR**

6.  (a)  What is RANSAC algorithm ? State advantages and disadvantages.           7
    (b)  Discuss function of eye in our visual system.                            7

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**Model Questions**

7.  (a)  Describe K-means Clustering. Also give one example.                                    7
    (b)  What is difference between class and cluster. Also explain clustering and Classification.   7

**OR**

8.  (a)  Explain Naïve Bayes classifiers with advantages and disadvantages.                     7
    (b)  Explain Back propogation method with neat diagram.                                       7

9.  (a)  Explain features of convolution layer.                                                  7
    (b)  Describe recurrent neural network with its application.                                 7

**OR**

10. Write short notes :                                                                          14
    (1)  KS-VD algorithm
    (2)  Principle component analysis
    (3)  Deep neural architecture
    (4)  Fully convolution neural network.