Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov/Dec– 2017**

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| **Code :** | **14EC2060** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MULTIMEDIA COMPRESSION TECHNIQUES** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Explain the significance of compression techniques for real-time multimedia applications. | CO1 | 10 |
| b. | Bring out the different specific concepts of text, audio, image and video data. Comment briefly on the merits and demerits. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | With mathematical equations, enumerate the different performance measures used to judge the quality of compression techniques. | CO1 | 10 |
| b. | With neat diagrams, illustrate the concepts behind scalar quantization techniques. | CO1 | 10 |
|  |  |  |  |  |
| 3. | a. | Differentiate lossy and lossless compression techniques | CO1 | 10 |
|  | b. | Using Shannon Fano coding technique, encode the data A={g, m, n, k, h, t} with the following probabilities (0.1, 0.25, 0.05, 0.3, 0.25, 0.05) respectively. | CO2 | 10 |
| (OR) | | | | |
| 4. |  | Encode the data A={a, b, c, d, e, f} with the probabilities (0.05, 0.2, 0.2, 0.1, 0.3, 0.15) respectively using Huffman coding technique. Repeat the same problem using minimum Huffman coding technique and determine the performance measures. | CO2 | 20 |
|  |  |  |  |  |
| 5. | a. | Encode the data “abbaabbaacceabbaacceabbaabbaabbaacceaccea” using LZ78 algorithm. | CO2 | 10 |
|  | b. | Encode the data “wabbawabbawabbawabbawoowoowoowoow” using LZW algorithm. Assume a suitable initial dictionary. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | With neat diagrams, summarize the concepts of channel vocoder used in speech compression approaches. | CO2 | 10 |
|  | b. | Analyze the G.722 algorithm used in audio compression applications with neat block diagram. | CO2 | 10 |
|  |  |  |  |  |
| 7 |  | With neat sketches, explain the compression techniques used in JPEG algorithm. | CO3 | 20 |
| (OR) | | | | |
| 8. |  | With a numerical example, show the step-by-step procedure of SPIHT algorithm used for image compression. | CO3 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | With neat block diagram, illustrate the H.261encoder used for video applications. | CO3 | 20 |

ALL THE BEST