

Hall Ticket Number:

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Code No.: 5121 M

VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
M.E. I Year (ECE) I-Semester (Make Up) Examinations, March-2016
(Communication Engineering & Signal Processing)

Signal Compression Theory and Methods

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE questions from Part-B

Part-A (10 X 2=20 Marks)

1. Define entropy.
2. State source coding theorem.
3. Distinguish between scalar quantization and vector quantization.
4. Define wavelet.
5. Explain the need for sub-band coding in signal compression.
6. Write any two properties of discrete sine transform.
7. Distinguish between analysis filter and synthesis filter.
8. List the properties of scaling function.
9. Mention the need for Video compression.
10. List the applications of transform coding in audio compression.

Part - B (5 X 10=50 Marks)

(All bits carry equal marks)

11. a) Explain run length coding with an example.
b) State and prove kraft inequality.
12. a) Describe and calculate the rate distortion for Binary source.
b) Choose any one differential encoding scheme and explain in detail.
13. a) With a neat sketch, Explain the two-stage sub-band coding.
b) Explain the properties of discrete cosine transform.
14. a) Describe about the speech compression in detail.
b) In detail explain about the KarhunenLoeve transform.
15. a) Compare the audio compression standards.
b) Summarize the H.263 – video compression standard in detail.
16. a) State Walsh transform and give its properties.
b) Explain the principle of compression using wavelet transform.
17. Write a short notes on the following
 - i. Arithmetic coding.
 - ii. Uniform and non-uniform quantization.
