

Faculty of Engineering & Technology
M.C.A. Second Year Semester-II (C.G.S.) Examination

MULTIMEDIA TECHNOLOGIES

(15530)

Paper—4 MCA 3

Time : Three Hours]

[Maximum Marks : 80

INSTRUCTIONS TO CANDIDATES

- (1) Answer any **six** questions.
- (2) Q. No. 1 is compulsory.
- (3) Due credit will be given to neatness and adequate dimensions.
- (4) Assume suitable data wherever necessary.
- (5) Illustrate your answers wherever necessary with the help of neat sketches.
- (6) Use pen of Blue/Black ink/refill only for writing the answer book.

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|-----------|------|---|---|
| 1. | (a) | What is 8-Bit-Gray-Level Image ? Explain in detail. | 8 |
| | (b) | Explain Externalization various Linearization. | 7 |
| OR | | | |
| 2. | (a) | Write and explain in brief Graphics and Image Editing Software. | 7 |
| | (b) | Explain the concept of Colour Lookup Tables. | 8 |
| 3. | (a) | Explain in detail YUV colour model in video. | 7 |
| | (b) | Explain the video signals : | |
| | (i) | Component video | |
| | (ii) | Composite video. | 6 |

OR

4. (a) Explain the analog video format :
(i) PAL
(ii) SECAM. 6
(b) Explain in detail Gamma Correction. 7
5. What is Nyquist Theorem ? Explain in detail. Explain how will you build up a complex signal by superposing sinusoids. 13

OR

6. (a) What is MIDI ? Explain in detail the hardware aspects of MIDI. 9
(b) What is sound ? Explain. 4
7. (a) Give and explain Shannon-Fano Algorithm for Compression. 7
(b) Explain distortion measures for lossy compression algorithms. 6

OR

8. (a) Explain the JPEG standard in brief. Give the main steps in JPEG image compression. 9
(b) Explain Run-Length coding. 4
9. (a) What is Video Compression ? Explain Video Compression based on motion compensation. 8
(b) Give and explain scalabilities supported by MPEG-2. 5

OR

10. (a) Explain quantization in H. 261. 7
(b) Explain MPEG-1 audio/video digital compression standard. 6
11. (a) Explain ADPCM in speech coding. 7
(b) Explain the concept of psychoacoustics. 6

OR

12. (a) What is channel vocoder ? Explain. 7
(b) Explain the concept of the threshold of human hearing. 6