D 70934 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION NOVEMBER 2019

Computer Science

CSS 3E 04 (A)—DATA COMPRESSION

Time : Three Hours Maximum : 36 Weightage

Part A

Answer **all** *questions.*
Each question carries 1 *weightage.*

1. Define the term Entropy.
2. What are weak entity sets ?
3. Differentiate between lossy and lossless compression schemes.
4. What do you mean by compression ratio ?
5. What is the need for an image transform in data compression ?
6. Define Fourier transform.
7. What do you mean by Signal-to-Noise Ratio ?
8. What are fractals ?
9. Mention any three audio compression standards.
10. What is meant by dictionary coding ?
11. What is Kraft-McMillan inequality ?
12. Define the term View in database.

(12 × 1 = 12 weightage)

Part B

Answer any **six** *questions.*
Each question carries 2 *weightage.*

13. What are the implementation challenges of audio compression ?
14. What is an analog video? How it differs from a digital video ?
15. What are the important criteria used for evaluating audio compression algorithms ?
16. Explain briefly the progressive image compression scheme.

Turn over

17. Describe the use of ER diagram with the help of an example.
18. What are the important roles of a database administrator ?
19. What is Haar transform ? How it can be effectively utilized for data compression ?
20. What do you mean by diagram by coding ? Explain.
21. What are the additional challenges to be faced in video compression compared to image compression ?

(6 × 2 = 12 weightage)

Part C

Answer any **three** *questions.*
Each question carries **4** *weightage.*

22. Compare and contrast file system versus database management system.
23. Describe how CWT can be effectively used for data compression.
24. What do you mean by vector quantization? Explain LBG algorithm.
25. What are iterated function systems? Explain their role in data compression.
26. Illustrate the working principle of JPEG 2000.
27. Discuss in detail the steps involved in MPEG-1 audio compression standard.

(**3** × **4** = 12 weightage)