

T-111.2400 Basics of Digital Media

Exam 17.12.2013

Please, write the course name, date, and your name and student number in each answer paper.
Maximum for each answer is six points.

1. Digital Rights Management

What's the purpose of the following DRM-techniques?

- a) Access Control
- b) Protected Sessions
- c) Encryption
- d) Tamper Resistance
- e) Watermarking
- f) Digital Fingerprints

2. Audio

Are the following claims true or false? Right answer gives you +1 point, but false answer -1 point.
Unanswered claim equals 0 points. Total points can be 0-6.

- a) Masking effect happens in both frequency and time domain
- b) A/D conversion often requires antialiasing filtering
- c) Directional hearing is immune to frequency properties
- d) Folding results when the sampling rates are too high
- e) mp3-codecs use sub-band coding
- f) Subwoofers are used in side and back channels of multichannel audio

3. Motion compensation

What is the basis behind motion compensation in video compression? Describe how the motion compensation algorithm works in practice.

4. Linked data

Compare 303 URI and Hash URI. How the RDF information is referenced in both URIs? What are the communication steps between client and server? Which use cases each URI fits better?

5. Streaming protocols

Internet streaming uses RTP, RTCP, and RTSP protocols. Please, tell the following items from each protocol:

- What is the full name of the protocol?
- What is the main purpose of the protocol?
- What other functions does the protocol have?
- What other protocol is commonly used with the protocol?