

T-111.2400 Basics of Digital Media

Exam 18.12.2014

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

1. Basics of Digital Media

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) Animation is time-continuous media type
- b) Modality describes the relationship between multimedia element and time dimension
- c) The internal synchronization of media elements is called isochronous
- d) Multimedia presentation always follows a linear plot
- e) In reactive interaction, the user affects to the content of the multimedia presentation
- f) Orchestration handles the high level synchronization of multimedia resources

2. Digital Rights Management

What is the purpose of the following DRM-techniques?

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

3. Motion compensation

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

4. Audio Coding

Describe how audio coding is implemented in the following use cases:

- a) audio CD
- b) MP3
- c) 3rd generation mobile phone speech codecs

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?