Topics for exam 2019

Lecture 1
1. Developing applications - from concept to implementation (slides 10-12)
2. DSP Development Tools (slides 14-17)
3. Applications of DSP. Applications classic (slides 20-23)
4. List some advanced applications DSP (slides 26-32)

Lecture 2
1. Digital processing of analog information. Processing system. Features of DSP (slides 2-4)
2. What is DSP? Cases of application of DSP. Time and frequency domains (slides 5-10)
3. DSP - generational characteristics (slides 23-26)
4. DSP - definitions. Common features and applications. (Slides 28-29)
5. Evaluation criteria. DSP processor types (slides 32-37)

Lecture 3
1. Definition of media processors (slides 3-6)
2. Predecessors of media processors - TMS320C80 (slides 11-12)

Lecture 4
1. High Performance DSP (main features). Types of architecture. (Slides 2-3)
2. Accelerating the parallel processors. Amdahl's Law (slide 6)
3. Architecture - basic units of C6000 (slides 7-9)
4. FIR filters. Steps computing (slides 12-13)
5. Floors pipeline in C6000. Description (slides 20-23)

Lectures 5-6
1. Block diagram General C6000 DSP (slide 3)
2. loading instructions. Description. Syntax versions (slides19-22)
3. Instructions MVKH and MVKL (slides 24-26)
4. conditional loops. Registers used (slides 37-38)
5. looping instructions. Loops relative to relative and register (slides 40-41)
6. Pointers in C6000 (slides 44-48)
7. What are the paths cross? Data and addresses (slides 58-60)
8. paths crossed. Summary (slide 76)
9. Types of operands (slides 79-81)
10. Transfers of data register-register (slide 89)
11. The final block diagram for 'C6x (slide 99)
12. Data packed (quad and dual) at C64x. Examples of possible operations (slides109-110)
13. Encoding issues (slides 127-128)
14. Encoding issues (slides 129-132)

Lectures 7-8
1. DSP programming in C and assembly language. Their effectiveness (slide 4)
2. What is DSP / BIOS and its components (slides 6-9)
3. What is a scheduler? (slides 19-20)
4 levels of priorities in DSP / BIOS (slide 30)
5. The difference between software interrupts and task (slide 46)
6. LOG difference between printf and printf (slide 56)
7. Summary of RTDX (slides 66-67)
8. Summary of DSP / BIOS (slides 70-71)

Lecture 9
1. FIR filters. Characteristic equation. Structure (slides 4-5)
2. Direct form FIR (slide 27)
3. Elements encoding / decoding JPEG (slides 43-44)
4. DCT transform. The calculation using 1D DCT for 2D DCT

Lecture 10
1. Integrated Peripherals in TMS320DM642 (slide 8)
2. OMAP. Definition and structure (slide 11)
3. Application development with TI Media Processors (slide 24)
4. Elements of eXpress DSP (slide 25)
5. Specific Roles in MP/DSP domain (slide 35)

Lecture 11
1. Media processing cores: types (slide 3)
2. Peripherals - video in and video out (slide 12-13)
3. Peripherals - audio in and audio out (slide 14-15)
4. Variable Length Decoder Nexperia- (functions, capabilities) (slide 16)
5. Tools and debugging tools for Nexperia - NDK (slides 32-33)

Lecture 12
1. ARM memory architecture: types and variations (slides 12-13)
2. ARM Addressing Modes for operands (slide 16)
3. ARM Pipeline (slides 17-18)
4. Details of the ARM architecture (slides 35-36)
5. Tools and development model for ST20cc (slides 28-29)

Important notice - all topics included in the course are important. The indication of slides (slide), displayed in parentheses, is approximate. Clear identification of the subject is based on the statement and its contents !!!!!