Wydział Informatyki i Telekomunikacji Faculty of Computing and Telecommunications

Kierunek studiów: Field of study

ELEKTRONIKA I TELEKOMUNIKACJA

Electronics & Telecommunications

Studia stacjonarne pierwszego stopnia prowadzone w języku angielskim Undergraduate studies in English

ZAGADNIENIA NA EGZAMIN DYPLOMOWY INŻYNIERSKI ISSUES AND PROBLEMS ON GRADUATION EXAM

Lp.	Zagadnienie
Item	Issues and problems
1.	Basic metrological definitions and terminology
2.	Methods of measuring the parameters of periodic signals
3.	Electrical circuits analysis
4.	Impulse response and transmittance of LTI system
5.	Mobile radio communication channel
6.	Cellular networks
7.	Distribution of frequency signal in the network physical layer
8.	Network synchronization in the packet layer
9.	Digital phase loop realizations
10.	Parameters of synchronization signals
11.	Digital Filters
12.	Filter design algorithms
13.	A/D and D/A signal conversion
14.	Spectral analysis
15.	The transmission properties of optical fiber
16.	Active and passive elements of optical link
17.	Assessment of the range of the fiber optic link limited by power and band
18.	Multiplexing technologies in fiber optic links
19.	Fiber optic links measurement methods
20.	Design a fiber optic link
21.	Interfaces in measuring systems
22.	Sensors and measuring circuits
23.	Analog and digital modulations of harmonic carrier
24.	Analog and digital pulse modulations
25.	Digital transmission over baseband and bandpass channels
26.	Sequential and combinational logic circuits
27.	Boolean algebra
28.	Design of finite state machines
29.	Complement arithmetic

 30. Internet services 31. Searching in the Internet 32. Local Area Networks 33. Conversion of integer or real numbers from decimal to binary and from binary to decimal system 34. Methods of solving nonlinear equations: bisection, falsi, Newton's 35. Numerical solving of sets of linear equations: accurate methods – Gauss-Jordan; approximate solutions – Jacobi, Gauss-Seidl and gradient methods 36. Numerical calculation of integrals – rectangles, trapezoids and Simpson's methods 37. Methods of discrete-event simulation 38. Data structures that can be used to construct the simulation agenda 39. Generation of pseudo-random numbers: uniform and other distributions 40. Transient phase length estimation in simulations 41. Android application components 42. Way of defining user interface for Android application 43. Android application project structure in AndroidStudio 44. Codd's postulates 45. Entity relationship diagrams (ERD) 46. DDL, DQL, DML, DCL and TCL commands 47. SQL extensions – PL/SQL, T-SQL 48. Database mornalization 49. Database models 50. Major pillars of object oriented programing in C# 51. C# - Interfaces and abstract classes 52. C# - Exception handling 53. C# - Control statements 54. Memory management and Garbage Collection in C# 55. Major pillars of object oriented programing in Java. 56. Java - Interfaces and collections 57. Java - Exception handling 58. Java - Control statements 59. Types of JDBc drivers 60. Object programming in C++ 61. IPv4 and IPv6 addressing 62. ISO/OSI and TCP/IP layer models 63. Protocols and data transmission in networks 64. Switching in LAN networks 65. Signaling systems in telecommunication networks 66. Integrated services in telecommunication netw	Lp.	Zagadnienie Issues and problems
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Lp.	Zagadnienie Issues and problems
71.	Access networks' technologies
72.	Design of logical topology of local area networks (VLAN)
73.	Planning networks with OSPF, ISIS and BGP protocols
74.	Metro(Carrier) Ethernet, MPLS and GMPLS
75.	Design of virtual private networks
76.	Network testing
77.	Model for computer networks based on layers
78.	Logical addresses in computer networks (IPv4/IPv6)
79.	Basic routing algorithms used in computer networks
80.	Hardware Oriented Network Operating Systems
81.	Application Oriented Network Operating Systems
82.	Mechanisms in IP addressing
83.	Rules in protocols, mechanisms and devices from link layer in computer networks
84.	Rules in protocols, mechanisms and devices from network layer in computer networks
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85.	Features and functions of operating systems (tools and commands)
86.	Services and their realization in Data Center
87.	Programmability in computer networks
88.	Topologies of telecommunication networks
89.	Information transfer modes in telecommunication networks
90.	Layered network models, network architectures
91.	Telecommunication services
92.	Numbering and addressing in telecommunication networks
93.	Switching nodes' functions and architectures
94.	Routing in switching nodes and telecommunication networks
95.	Functions, properties and operation of switching networks (switching fabrics)
96.	Signalling in telecommunication networks
97.	Connection setup process in a mobile network
98.	Buffering in packet switching nodes
99. 100.	Systemy ze stratami i z oczekiwaniem Podzaje pierścieni w cięciech optyczny
100.	Rodzaje pierścieni w sieciach optyczny Circuits with Zener diodes, rectifiers and switching diodes
104.	Bipolar transistors - circuits and applications
106.	Operational amplifier - principles of operation and typical circuits
107.	Antenna parameters
107.	Antennas for radiocommunication systems
100.	EM wave propagation
110.	Resonance in electrical circuits
111.	Power in DC and AC circuits
112.	Transient states in electrical circuits
113.	Vision systems optics
114.	Image segmentation methods
115.	Image features
110.	minge rendred

Lp. Item	Zagadnienie Issues and problems
116.	Signal representation with harmonic components
117.	Processing of signals by linear and time invariant (LTI) systems
118.	Frequency characteristics of LTI systems
119.	Analog filter requirements
120.	Stability of systems
121.	Automatic Control Systems
122.	Representation of systems in the state space
123.	General structure of programmable devices
124.	Basic functional primitives in FPGA devices
125.	Verilog hardware description language
126.	Acquisition, perception by humans, representation and display of multimedia data in
120.	digital systems
127.	Compression of multimedia data
128.	Video and audio processing
129.	Standardization in multimedia communications
130.	Impulse response and transmittance of LTI system
131.	Mobile radio communication channel
132.	Cellular networks