1. What kind of device is an electronic amplifier, and what is its main function?
2. What are the main technical parameters of amplifiers?
3. How is the amplification coefficient determined, and why is it important?
4. Why are cascades connected in series in multi-cascade amplifiers?
5. List the three types of connection schemes for bipolar transistors and explain their main differences.
6. What are the main characteristics and application areas of the common emitter (CE) configuration?
7. For what kind of amplification is the common base (CB) configuration used, and what is its input resistance?
8. What are the main functions and advantages of the common collector (CC) configuration?
9. What characteristics does the common source connection scheme of a field-effect transistor have?
10. In which areas is the common drain connection scheme of a field-effect transistor used?
11. What are the main differences between the operating modes of amplifiers (A, B, AB, C, D)?
12. What are the distinctive features of Class D amplifiers?
13. What types of transistors are used in impulse amplifiers, and what are their advantages?
14. What advantages does obtaining a feedback signal after the output filter provide?
15. What is the efficiency of an amplifier operating in Class A, and what are its disadvantages?
16. What is the main disadvantage of an amplifier operating in Class B, and where is it used?
17. How does pulse-width modulation work in Class D amplifiers?
18. Why is the common emitter configuration widely used in high-frequency amplifiers?
19. How do external voltage-controlled amplifiers work, and what are their advantages?
20. What are the main functions and classifications of radio transmission devices?
21. What is the concept of a signal, and what types does it include?
22. What is the importance of radio communication in wireless communication systems?
23. What are the main differences between analog, discrete, and digital signals?
24. Describe the general principles of shaping high and low frequency oscillations.
25. Where are radio frequency and microwave signal generators used?
26. List and explain the main indicators of electrical signals (period, frequency, amplitude).
27. What is a sinusoidal signal, and in which fields is it used?
28. What are the main characteristics and applications of rectangular signals?
29. What is the difference between triangular and sawtooth signals?
30. Explain the main differences between digital and discrete signals.
31. What functions do signal generators perform, and what are their main components?
32. What types of oscillators are there, and what is their operating principle?
33. What are the main differences between an autogenerator and a self-excited generator?
34. What is the general structure and application of quartz generators?
35. What are the main characteristics of klystron generators?
36. How does a traveling-wave tube work, and what are its practical applications?
37. How do piezoelectric-filtered generators work, and in which fields are they used?
38. What capabilities do digital signal generators have, and where are they used?
39. What are the main differences between analog and digital amplifiers?
40. How are radio transmitters classified?
41. What does the simplest circuit of a radio transmission device look like?
42. What is the circuit configuration of an analog mobile phone transmitter?
43. What is the circuit configuration of a digital mobile phone transmitter?
44. What does the circuit configuration of a direct quadrature modulator look like?
45. What is the circuit configuration of a digital transmitter using quadrature integral modulation?
46. What is the circuit configuration of a multi-frequency multi-mode transceiver (base station)?
47. What is the general circuit configuration of a UHF CHM radio broadcasting transmitter?
48. What is the circuit configuration of a digital television system?
49. What are the functions of a radio transmitter?
50. What are the main components of radio transmission devices?
51. What is the difference between meter and decimeter waves?
52. How is radio signal amplification achieved?
53. How is frequency selection carried out in mobile communication systems?
54. What are the types of modulation used in radio transmitters?
55. What methods are used to convert a signal into digital form?
56. What are the operating modes of radio transmitters?
57. What are the main advantages of digital communication systems?
58. What are the main functions of radio reception devices?
59. How is the classification of radio receivers carried out?
60. How can the sensitivity of radio receivers be determined?
61. What is selectivity in radio receivers, and how is it measured?
62. How is frequency accuracy evaluated in radio receivers?
63. How do speed and frequency change in radio reception devices?
64. What elements are present in the circuit diagram of radio reception devices?
65. How does a resonant circuit work, and what are its functions?
66. How is the interference immunity of radio receivers ensured?
67. What does electromagnetic compatibility in radio receivers mean?
68. How is signal amplification achieved in radio receivers?
69. What is the operating principle of superheterodyne receivers?
70. What is a heterodyne, and what role does it play in radio reception?
71. What is intermediate frequency (IF), and how is it selected?
72. What are the main indicators of radio reception devices?
73. How is the stability of radio receivers evaluated?
74. What are the necessary components of radio reception devices?
75. What methods are available to improve the sensitivity of radio receivers?
76. How are disturbances in radio receivers detected and eliminated?
77. What are the main technological aspects of radio reception devices?
78. What are the types of digital modulation methods?
79. How does amplitude modulation (ASK) work?
80. What is frequency modulation (FM), and how is it applied?
81. How does phase modulation (PM) work?
82. What methods are used for logical manipulation of signals in digital communication systems?
83. What is the difference between analog and digital signals?
84. What is the process of regenerating an analog signal?
85. How is the quantization process carried out?
86. How is a digital signal converted into a high-frequency form?
87. What encoding algorithms are used in digital communication systems?
88. How do BPSK and QPSK modulation types differ?
89. How does QAM modulation work, and what are its advantages?
90. How can the efficiency of digital modulation be assessed?
91. What is a polar modulator, and how does it work?
92. How does a square modulator work, and what are its functions?
93. What are the advantages of digital modulation methods?
94. How is the signal decoding process carried out in digital communication systems?
95. What maneuvering methods are used in digital communication systems?
96. Why is it important to avoid losing the phase of a signal?
97. What difficulties exist in the digital signal transmission process?
98. How is digital signal processing carried out?
99. What is Software Defined Radio (SDR) technology?
100. What role do filters play in digital communication systems?