Questions 2019

The questions have different points' weight. During the exam a variety of question will be chosen with the total number of points equal to 60.

Question	Points
1. Uncertainty, definition, way of expression	3
2. Types of uncertainties – a, b. c, ways of calculations	7
3. Principle of DC voltmeter – block diagram, what it measures for a complex signal, properties	5
4. Connection of voltmeter to measured circuits, effects and errors in results	5
5. Principle of AC voltmeter – block diagram, what it measures for a complex signal, properties	5
6. Conversion from AC to DC, alternatives, properties, TRMS	10
7. Ammeter, conversion I to V	5
8. Connection of Ammeter to measured circuit, effects and errors in results	5
9. Measurement of DC resistance, principle, 2 and 4 wires connection	5
10. Measuring capacity and inductance	5
11. Block diagram of multimeter, explanation of basic block and functionality	3
12. Oscilloscopes probes, frequency compensation	10
13. Oscilloscope Theory of Operation, basic block and their functionality, bandwidth effect	10
14. Edge triggering, principle, sources, hold-off time	7
15. Smart (advance) triggering, examples	5
16. Displaying data, zooming, persistence,	3
17. Capturing data, modes, processing, sampling	10
18. Pulse measurement – definition of parameters	5
19. Definitions of power, wattmeter, principles, overview	7
20. Physical and fictive models of real electronic components, definition of parameters	5
21. Autobalancing bridge, principle	5
22. Theory of reflection, network analyzer for imitance measurement	3
23. LF generators (sine, function, pulse), block diagram, overview of principles and parameters except DDS	5
24. DDS vs traditional architecture., parameters, memory	10
25. RF generators, block diagram, properties, QAM modulator	7
26. Counter, basic principle, uncertainty	5
27. Measurement of time, delay, period, ratio, accessory	7
28. Reciprocal counter	5
29. LF test methods for quadrupoles	3
30. RF instrumentation - spectrum analyzer with tracking generator, network analyzer	7
31. FFT analyzer, effects, errors, improvements	10
32. Hetodyne filtration, swept tuned spectrum analyzer with digital signal processing.	10
33. Measurement of distortion and amplitude modulation	7