General Class Things to Know #4

1. One use for a DSP in an amateur station is to remove noise from received signals.

2. An oscilloscope may be used to measure the output of a single-sideband transmitter when performing a two-tone test of amplitude linearity.

3. An Analog to Digital Converter, a Digital to Analog Converter and a Digital Processor Chip are all needed for a DSP IF filter.

4. An advantage of a receiver IF filter created with a DSP as compared to an analog filter would be a wide range of filter bandwidths and shapes can be created.

5. DSP filtering is accomplished by converting the signal from analog to digital and using digital processing.

6. A pronounced dip reading on the plate current meter of a vacuum tube RF power amplifier indicates correct adjustment of the plate tuning control.

7. The correct adjustment for the "Load" or "Coupling" control of a vacuum tube RF power amplifier is the maximum power output without exceeding maximum allowable plate current.

8. Negative feedback is the technique used to neutralize an RF amplifier.

9. A neutralizing circuit in an RF amplifier cancels the effects of positive feedback.

10. The reason for neutralizing the final amplifier stage of a transmitter is to eliminate self oscillations.

11. a two-tone test analyzes the linearity of a transmitter's performance.

12. Two non-harmonically related audio signals are the type of signals used to conduct a two-tone test.

13. A DSP filter performs automatic notching of interfering carriers.

14. An oscilloscope is the item of test equipment that contains both horizontal and vertical channel amplifiers.

15. An advantage of an oscilloscope versus a digital voltmeter is that it can measure complex waveforms.

16. A signal tracer would normally be used to identify an inoperative stage in a receiver.

17. A noise bridge is normally used by connecting it between a receiver and an antenna of unknown impedance and is adjusted for minimum noise.

18. A monitoring oscilloscope is the best instrument to use to check the keying waveform of a CW transmitter.

19. The attenuated RF output of the transmitter is the signal source connected to the vertical input of a monitoring oscilloscope when checking the quality of a transmitted signal.

20. An advantage of a digital voltmeter as compared to an analog voltmeter is that it has significantly better precision for most uses.

21. A field-strength meter is the instrument that may be used to monitor relative RF output when making antenna and transmitter adjustments.

21. You would have to raise the power output of a transmitter approximately 4 times as much power output to raised or change the "S" meter reading on a distant receiver from S8 to S9.

22. The radiation pattern of an antenna can be determined with the use of a field strength meter.

23. A close-in radio direction-finding might be a use for a field strength meter.

24. One way a noise bridge might be used is to pre-tuning an antenna tuner.

25. One measurement that can be made with a dip meter is the resonant frequency of a circuit.

26. A Receiver, a Transmitter and an Antenna and feedline must be connected to an antenna analyzer when it is being used for SWR measurements.

27. Standing Wave Ratio can be measured with a directional wattmeter.

28. High input impedance is desirable for a voltmeter because it decreases the loading on circuits being measured.

29. A bypass capacitor might be useful in reducing RF interference to audio-frequency devices.

30. An RFI filter should be installed at the affected telephone if a properly operating amateur station is interfering with a nearby telephone.

31. Distorted speech would be heard from a public-address system if there is interference from a nearby single-sideband phone transmitter.

32. The effect on a public-address system if there is interference from nearby CW transmitter would be on-and-off humming or clicking.

33. The problem might be the ground wire is resonant if you receive an RF burn when touching your equipment while transmitting on a HF band, assuming the equipment is connected to a ground rod.

34. Important reasons to have a good station ground is to reduce the likelihood of RF burns, to reduce the likelihood of electrical shock and to reduce interference.

35. One good way to avoid stray RF energy in an amateur station is to keep the station's ground wire as short as possible.

36. A reason to place ferrite beads around audio cables to reduce common mode RF interference is that they act as a series inductor.

37. A true statements about station grounding is a RF hot spots can occur in a station located above the ground floor if the equipment is grounded by a long ground wire.

38. Electrical safety inside the ham shack is covered in the National Electrical Code.

39. Induced currents in conductors that are in poor electrical contact can cause unintended rectification of RF signal energy and can result in interference to your station as well as nearby radio and TV receivers.

40. One cause of broadband radio frequency interference at an amateur radio station is arcing at a poor electrical connection.

41. A ground loop can be avoided by connecting all ground conductors to a single point.

42. The reason for using a properly adjusted speech processor with a single sideband phone transmitter is that it improves signal intelligibility at the receiver.

43. A speech processor affects a transmitted single sideband signal by increasing the average power.

44. The result of an incorrectly adjusted speech processor can be distorted speech, splatter and excessive background pickup.

45. An S-meter measures received signal strength.

46. An S-meter reading of 20 db over S-9 compare to an S-9 signal, assuming a properly calibrated S meter is 100 times stronger.

47. An S-meter generally be found in a receiver.

48. a Type-N connector is a moisture resistant RF connector that is useful to 10 GHz

49. a good choice for a serial data port connector would be a DB-9.

50. A UHF connector is commonly used for RF service at frequencies up to 150 MHz.

51. An RCA phono connector is commonly used for audio signals in amateur radio stations.

52. The main reason to use keyed connectors over non-keyed types is that they reduced the chance of damage due to incorrect mating.

53. Emission types that are permissible while operating HF mobile are CW, SSB and FM.

54. Alternator whine is a tone or buzz in transmitted or received audio that varies with engine speed.

55. A direct, fused connection to the battery using heavy gauge wire would be the best for a 100-watt HF mobile installation.

56. It is best NOT to draw the DC power for a 100-watt HF transceiver from an automobile's cigarette lighter socket because the socket's wiring may be inadequate for the current being drawn by the transceiver.

57. The HF mobile antenna system is the main factor that most limits the effectiveness of an HF mobile transceiver operating in the 75 meter band.

58. An emergency generator installation should be located in a well ventilated area.

59. a lead-acid storage battery might give off explosive hydrogen gas when it is being charged.

60. Photovoltaic conversion is the name of the process by which sunlight is changed directly into electricity.

61. The approximate open-circuit voltage from a modern, well illuminated photovoltaic cell is 0.5 VDC.

62. Doped Silicon is used as the active element of a solar cell.

63. A disadvantage to using wind power as the primary source of power for an emergency station is that a large energy storage system is needed to supply power when the wind is not blowing.

64. The danger of carbon monoxide poisoning is a primary reason for not placing a gasoline-fueled generator inside an occupied area.

65. It would be unwise to power your station by back feeding the output of a gasoline generator into your house wiring by connecting the generator through an AC wall outlet as it might present a hazard for electric company workers.