BASIC TELEVISION MULTIPLE CHOICE – GROB TV

1. Which of the following camera tube uses lead oxide (PbO) for the photoconductive target plate?
A. Vidicon
B. **Plumicon**
C. Saticon
D. Image Orthicon

2. Camera signal output without sync is called
A. Black burst
B. generator lock video
C. composite video
D. **noncomposite video**

3. A low-contrast picture in which white seems flat and lacking in detail suggest
A. **low beam current**
B. high gain in the amplifier
C. excessive gamma
D. insufficient scanning width

4. Which of the following camera tubes has minimum lag?
A. Vidicon
B. **Plumbicon**
C. Saticon
D. Iconoscope

5. The part of the visible spectrum where camera pickup tubes have the greatest output is
A. red
B. blue
C. **yellow-green**
D. infrared

6. Precise scanning size and linearity are most important in
A. a black-and-white camera
B. a plumbicon
C. **a single-tube color pickup**
D. a saticon

7. Beam alignment magnets for the camera tube are adjusted while rocking which control?
A. Optical focus
B. **Electrical focus**
C. Beam current
D. Shading

8. Special effects and production switching are done by the
A. CCU
B. ENG camera
C. **SEG**
D. Sync generator

9. The gamma of the picture tube is
A. 0.4545
B. 1.0
C. 1.4
D. **2.2**

10. If the camera cannot be placed far away enough to include everything in the scene, change the lens to one with a
A. lower f rating
B. higher f rating
C. longer focal length
D. **shorter focal length**

11. A typically value of vidicon dark current is
A. **0.2 uA**
B. about 200 uA
C. 8 mA
D. 800 mA

12. A lens has an 8-cm focal and 4-cm diameter. Its f rating is
A. **2**
B. 4
C. 8
D. 32

13. Which of the following is FALSE?
A. The lens inverts the optical image on the faceplate of the camera tube.
B. **The composite video signal includes the camera signal and sync not blanking**
C. The standard composite video from a camera is 1V p-p with negative sync.
D. The plumbicon uses a lead oxide layer for the target plate.

14. Which of the following is TRUE?
A. The diameter of the vidicon image plate is about 5 in. (127 mm)
B. The plumbicon camera tube uses a silicon target plate.
C. The composite video signal includes the camera signal and sync but not blanking.
D. **the lens inverts the optical image on the faceplates of the camera tube.**

15. Which of the following produces the signal variations for G4 of the vidicon.
A. **Target plate** C. Muzzle
B. Wire mesh D. Beam control

16. What is the gamma required for the camera tube?
A. 2.2 B. **0.4545** C. 4.545 D. 0.22

17. _____ is more important for the gamma correction for the camera tube.
A. **Color** C. Both Color and monochrome
B. Monochrome D. Either of Color or monochrome

18. In gamma correction the _____ is stretched by the picture tube.
A. Black B. gray C. **white** D. red

19. To how many lax units is the illuminator of 3 fs, approximately equal?
A. 650 B. 225 C. 65 D. **30**

20. What is the diagonal screen size for the 19CP4 picture tube?
A. 12 in. B. 16 in. C. **19 in.** D. 24 in.

21. To what deflection angle does a maximum deflection angle of 45 deg either side center correspond?
A. 30° B. **90°** C. 120° D. 360°

22. What is the usual heater voltage for picture tube?
A. 1.6 v B. 5.6 V C. **6.3 V** D. 9.3V

23. What is the typical anode voltage for a 25-in color picture tube?
A. 10 kV B. **30 kV** C. 1 kV D. 30 V

24. Typically, the anode capacitance for a 25-in tube is _____ pT.
A. 2 B. 20 C. 205 D. **2000**

25. When the TV set was turned on, full power was applied to the heater and the picture appeared within a fraction of a second.
A. Ultor C. **Instant-on operation**
B. Implosion D. Screen persistence

26. What are the phosphor numbers, respectively, for monochrome and color picture tubes?
A. P1 and P4 C. **P4 and P22**
B. P1 and P22 D. P4 and P1

27. What is the color of P1 screen phosphor?
A. Red B. Blue C. White D. **Green**

28. Which of the following is the most negative (or least positive) electrode is the electron gun?
A. Cathode C. Screen grid
B. **Control grid G1** D. Focus grid

29. Which is the most position element in the electron gun?
A. Ultor C. Cathode
B. Anode D. **Ultor or anode**

30. Most of the electrons in the beam flow out of which terminal?
A. Ultor C. Cathode
B. Anode D. **Ultor or anode**

31. The crossover point for focusing is formed by the _____ electron lens.
A. **first** C. Cathode
B. second D. fourth

32. In which method in a G3 voltage of 200 V. used for?
A. **low-voltage focus** C. either low or high voltage focus
B. high-voltage focus D. none of these

33. Small magnets embedded in the yoke housing is correct for _____.
A. yoke position C. **pinoushion distortion**
B. magnetic deflection D. centering adjustments

34. The coils above and below the electron beam of the picture tube are for _____.
A. V scanning C. Either V or H scanning
B. **H scanning** D. None of these

35. Neck shadow result when the deflection yoke is _____.
A. too near back C. **too far back**
B. too near forward C. too far forward

36. In color picture tube, degaussing should be done _____ the color purity adjustments.
A. after C. either way
B. **before** D. none at all

37. In color picture tube, degaussing is done with _____.
A. direct current C. **60 Hz alternating current**
B. alternating current D. 90 Hz alternating current

38. When the receiver is first turned on, what current does the ADG circuit have?
A. **High** C. Both high and low
B. Low D. Neither high nor Low

39. In color picture tube, what does a solid red raster checked for?
A. **good color purity** C. Degaussing
B. Convergence D. Resetting the yoke

40. Where do the small, white dots in the picture used for?
A. good color purity C. Degaussing
B. **convergence** D. Resetting the yoke

41. What does the color fringing on the edge of the picture shows?
A. **Misconvergence** C. Turned off guns
B. Insufficient signal drive D. Red cloud

42. Static convergence is done for the _____ of the screen.
A. **center** B. edges C. left D. right

43. Where the permanent magnets used?
A. **static convergence** C. automatic degaussing
B. dynamic convergence D. resetting the yoke

44. In picture, the basic waveform for dynamic convergence is the _____.
A. parabola C. full sine wave
B. half a sine wave D. **parabola or half of sine wave**

45. Pincushion magnets are used for _____ picture tubes.
A. **monochrome** C. both color and monochrome
B. color D. either color or monochrome

46. The abbreviation TW is for _____ pincushion correction.
A. diagonal C. horizontal
B. **vertical** D. either way

47. The typical dc grid bias for a 19-in, picture tube.
A. -4 V B. -40V C. -6 V D. **-60 V**

48. Typical ac signal drive for a 19-in, picture tube.
A. 8 Vp-p C. 120 Vp-p
B. 40 Vp-p D. **140 Vp-p**

49. For the picture tube, the brightness control varies the ___ bias signal drive.
A. **dc** C. either ac or dc
B. ac D. both ac and dc

50. The R, G, and B screen grid adjustments are set for ___ in the picture.
A. **visual cutoff** C. brightness control
B. white highlights D. gray-scale tracking

51. The R, G, and B video drive controls are set for ___ in the picture.
A. dark gray C. black
B. **white** D. green

52. Background controls of many picture tubes are for the
A. ac bias C. ac video signal
B. **dc bias** D. dc video signal

53. The G2 master screen control of picture tubes vary the _____.
A. ac voltage
B. **dc voltage**
C. ac video signal
D. dc video signal

54. In the sawtooth waveform for linear scanning
A. the linear rise if for flyback
B. **the complete cycle includes trace and retrace**
C. the sharp reversal in amplitude produces trace
D. the beam moves faster during trace than retrace.

55. Given a 635 us vertical retrace time, the number of complete horizontal lines scanned during vertical flyback is
A. **10**
B. 20
C. 30
D. 63

56. One-half line spacing between the start position for scanning even and odd fields produces
A. linear scanning
B. line pairing
C. fishtailing
D. **exact interlacing**

57. The number of lines scanned per frame in the raster on the picture tube screen is
A. **525**
B. 262
C. 20
D. 10

58. In the frame for which interlaced scanning is used, alternate lines are skipped during vertical scanning because
A. the trace is slower than the retrace
B. **the vertical scanning frequency is doubled from 30 to 60 Hz**
C. The horizontal scanning is slower than vertical scanning
D. the frame has a 4 : 3 aspect ratio

59. If the horizontal flyback is 10 percent, this time equals
A. 10 us
B. 56 us
C. **6.4 us**
D. 83 us

60. Which of the following is NOT true?
A. line pairing indicates poor interlacing.
B. People look too tall and too thin on a square raster on the picture tube screen.
C. A person can appear to have one shoulder wider than the other because of nonlinear horizontal scanning.
D. **the keystone effect produces a square raster.**

61. The width of a vertical sync pulse with its narrations includes the time of
A. **sux half-lines, or three lines**
B. five lines
C. three half-lines
D. five half-lines

62. Sawtooth generator circuits produce the scanning raster, but the sync pulses are needed for
A. linearity
B. **timing**
C. keystoning
D. line Pairing

63. Which of the following frequencies is wrong?
A. 15,750 Hz for horizontal sync and scanning
B. 60 Hz for vertical sync and scanning
C. 31,500 Hz for equalizing pulses and serrations in the vertical sync pulses
D. **31,500 Hz for the vertical scanning frequency**

64. Which of the following is faster in horizontal scanning?
A. trace C. flyback
B. retrace D. **retrace or flyback**

65. Which of the following takes more time?
A. H retrace C. **V retrace**
B. H trace D. V trace

66. What does an interlaced scanning require for the number of the horizontal lines?
A. **odd** C. Both odd and even simultaneously
B. Even D. Either odd or even

67. How many horizontal lines are in the odd or an even field?
A. 10 ½ C. 525 lines
B. **262 ½ lines** D. 600 lines

68. How many H lines are there in a complete frame?
A. 19 lines C. 262 ½ lines
B. **21 lines** D. 600 lines

69. How many H lines are there in each field?
A. 8 ½ lines C. 262 ½ lines
B. **10 ½ lines** D. 325 lines

70. How many H lines are there in each V retrace?
A. **One** C. three
B. two D. four

71. What are the frequencies of V scanning, V sync, and V blanking?
A. 30 Hz B. **60 Hz** C. 90 Hz D. 360 Hz

72. What are the frequencies of H scanning, H sync and H blanking?
A. **15,750 Hz** C. 31,500 Hz
B. 16,750 Hz D. 30,050 Hz

73. In video signal analysis, what are the three parts of the composite video signal, for two horizontal lines in the picture?
A. Camera signal C. H blanking
B. H sync D. **all of the above**

74. In the IRE scale for composite video signal, list the number of IRE units used for sync, black setup, and the camera signal?
A. **40, 7.5, 92.5 respectively**
B. 92.5, 40, 7.5 respectively
C. 7.5, 40, 92.5 respectively
D. 92.5, 7.5,40 respectively

75. What are the approximate time periods for the width of H blanking pulse in microseconds?
A. 5 B. 0.93 C. **10.2** D. 53.5

76. What are the approximate time periods for the visible H trace?
A. 5 B. 0.93 C. 10.2 D. **53.5**

77. What are the approximate time periods for the width of H sync pulse?
A. **5** B. 0.93 C. 10.2 D. 53.5

78. Which pulses in V blacking correspond to the 3H lines wide?
A. **V sync** C. Equalizing
B. V blanking D. all of the above

79. Which pulses in V blanking correspond to the 21H lines wide?
A. V sync C. Equalizing
B. **V blanking** D. all of the above

80. Which pulses in V blacking correspond to the 31,500 Hz?
A. V sync C. **Equalizing**
B. V blanking D. all of these

81. Give the maximum number of picture details for each horizontal line.
A. 338 C. 125,000
B. **426** D. 144,000

82. Give the maximum number of picture details for total picture area.
A. 338 C. 125,000
B. 426 D. **144,000**

83. The average dc level is close to the blanking level for a _____ scene?
A. light C. either dark or light
B. **dark** D. neither dark nor light

84. In what condition does the picture tube reproduce black?
A. maximum beam current C. **zero beam current**
B. minimum beam current D. none of these

85. The gamma effects the _____ of the picture tube.
A. **contrast** C. dullness
B. Brightness D. either the brightness or contrast

86. Picture tube has games which is _____.
A. **greater than 1** C. infinity
B. less than 1 D. zero

87. Brightness variations of the picture information are in which signal?
A. 1 B. Q C.**Y** D. R-Y

88. The hue 180º out of phase with red is
A. **cyan** C. green
B. yellow D. blue

89. Greater p-p amplitude of the 3.58MHz chrominance signal indicates more
A. white C. hue
B. yellow D. **saturation**

90. The interfering beat frequency of 920 kHz is between the 3.58 MHz color subcarrier and the
A. **4.5 MHz intercarrier sound** C. lower adjacent sound
B. picture carrier D. upper adjacent picture

91. The hue of color sync phase is
A. red B. cyan C. blue D. **yellow-green**

92. Which signal has color information for 1.3 MHz bandwidth?
A. **I** B. Y C. R-Y D. B-Y

93. Which of the following is false?
A. the I video hues are orange or cyan
B. The transmitter matrix output includes Y, I, and Q video
C. A three-gun picture tube that can serve as a matrix.
D. **a fully saturated color is mostly white**

94. The color with the most luminance is
A. red B. **yellow** C. green D. blue

95. What is the hue of a color 90º leading sync burst phase?
A. yellow B. **cyan** C. Blue D. Orange

96. The average voltage value of the 3.58 MHz modulated chrominance signal is
A. zero for most colors
B. close to black for yellow
C. **the brightness of the color**
D. the saturation of the color

97. The second IF value for color in receivers, for any station, is
A. 0.5 MHz **C. 3.58 MHz**
B. 1.3 MHz D. 4.5 MHz

98. if the 3.58-MHz C amplifier in the receiver does not operate, the result will be
A. **no color** C. too much blue
B. no red D. too much yellow

99. How many octaves is the frequency range 1 to 8MHz?
A. 1 B. 2 C. **3** D. 8

100. Which system can be used for both recording and playback?
A. CEO C. Laser disk
B. VHD D. **VHS**

101. How many TV fields are recorded on one slant track of tape?
A. **1** B. 2 C. 4 D. 60

102. The video heads rotate at high velocity to increase the
A. tape speed C. reel rotation
B. **writing speed** D. tape tension

103. A typical frequency for the FM luminance signal inVCR recording is
A. 0.1 MHz C. 10 MHz
B. **1.7 MHz** D. 680 kHz

104. Which of the following applies to the color-under technique?
A. chroma amplitude are decreased
B. **chroma frequencies are reduces**
C. luminance frequencies are decreased
D. chroma and luminance frequencies are reduced

105. What oscillator frequency is needed to heterodyne 329 kHz up to 3.58 MHz?
A. 3 MHz C. 6.3 MHz
B. **4.21 MHz** D. 10 MHz

106. A comb filter is used to
A. **cancel chroma crosstalk**
B. separate white from black
C. clip the sync from blanking
D. separate alternating from direct current

107. Switching for each field is required for the
A. audio head
B. control-track head
C. **video heads**
D. erase head

108. Servocontrol of speed and phase is used for the
A. control head
B. erase head
C. audio head
D. **video head scanner**

109. The part that rotates to meter out the tape at constant speed is the
A. control head
B. erase head
C. entrance guide
D. **capatan**

110. To make the tape speed the name in playback as in recording, the tape speed is regulated by the
A. audio track
B. **control-track pulses**
C. video silent tracks
D. erase head

111. tilting the viseo head gaps is necessary with the
A. color-under
B. **zero guard bands**
C. FM luminance signal
D. long-play tubes

112. Which system uses a laser light beam for playback?
A. CED
B. VHD
C. Betamax
D.**VLF**

113. In the CED system, the disk capacitance varies with the
A. **pit depth**
B. disk size
C. speed of rotation
D. wavelength of the scanning light

114. The modulated picture carrier wave includes the composite video signal as the
A. average carrier level
B. **asymmetric envelope of amplitude variations**
C. lower sideband without the upper sideband
D. upper envelope without the lower envelope

115. Which of the following statements is true?
A. Negative transmission means that the carrier amplitude decreases for black.
B. **Negative transmission means that the carrier amplitude decreases for white**
C. Vestigial sideband transmission meand that both upper and lower sidebands are transmitted for all modulating frequencies.
D. Vestigial sideband transmission means that the modulated picture carrier signal has only the upper envelope.

116. With a 2 MHz video signal modulating the picture carrier signal for channel 4 (66 to 72 MHz) which of the following frequencies are transmitted?
A. 66 MHz carrier frequency and 68 MHz upper side frequency
B. 71.5 MHz carrier frequency with 69- and 73 MHz side frequencies
C. 67.25 Mhz carrier frequency with 65.25 and 69.25 MHz side frequencies
D. **67.25 MHz carrier and 69.25 MHz upper side frequency.**

117. With a 0.5 MHz video signal modulating the picture carrier.
A. **both upper and lower side frequencies are transmitted**
B. only the upper side frequency is transmitted
C. only the lower side frequency is transmitted
D. no side frequencies are transmitted

118. In all standard television broadcast channels, the difference between the picture and sound carrier frequencies is
A. 0.25 MHz
B. 1.25 MHz
C. **4.5 MHz**
D. 6 MHz

119. The difference between the sound carrier frequencies in two adjacent channels is
A. 0.25 MHz
B. 1.25 MHz
C. 4.5 MHz
D. **6 MHz**

120. Line-of-sight transmission is a characteristic of propagation for the
A. **VHF band and higher frequencies**
B. VHF band but not the UHF band
C. radio frequencies below 1 MHz
D. AM picture signal but not the FM sound signal

121. In channel 14 (470 to 76 MHz), the 3.58 MHz color signal is transmitted at
A. 471.25 MHz
B. 473.25 MHz
C. **474.83 MHz**
D. 475.25 MHz

122. The difference between the sound carrier and color subcarrier frequencies is
A. 4.5 MHz
B. 1.25 MHz
C. **0.92 MHz**
D. 0.25 MHz

123. The maximum deviation of the FM sound signal, in kilohertz, is
A. 10
B. **25**
C. 75
D. 100

124. Which of the following applies for a monochrome picture?
A. chroma amplifier on
B. **chroma amplifier off**
C. picture tube off
D. color demodulator input

125. Which of the following is NOT tuned to 3.8 MHz?
A. Burst amplifier
B. **video preamplifier**
C. chroma amplifier
D. color demodulator input

126. The contrast control is in the
A. chroma amplifier
B. color killer
C. **T video amplifier**
D. delay line

127. The color level control is in the
A. demodulator C. AFPC
B. **BPA** D. G-Y amplifier

128. The color oscillator does not operate. The trouble in
A. incorrect hues C. **no color**
B. excessive confetti D. no picture

129. The balance for Y video signals to the three guns in the picture tube is set by the
A. screen controls C. contrast control
B. tint control D. **drive controls**

130. Which signal needs a 0.6-us time delay?
A. 3.58 C. **Y video**
B. B-Y video D. Color burst

131. The output of the burst separator feeds the
A. color demodulator C. **AFPC for color oscillator**
B. G-Y adder D. Y video amplifier

132. The output of the color oscillator feeds the
A. chroma BFA C. picture tube
B. **color demodulator** D. burst separator

133. Drifting color bars in the picture indicate trouble in the
A. Y video amplifier C. color killer
B. chroma BFA D. **AFPC for color oscillator**

134. The best frequency between the 3.8 MHz color subcarrier and the 4.5 MHz sound signal is
A. **0.92 MHz** C. 4.8 MHz
B. 3.0 MHz D. 4.5 MHz

135. Which control varies the phase angle of the demodulated color video signal
A. color level C. drive
B. **tint** D. picture

136. Which of the following stages must be on during horizontal flyback time?
A. Y video amplifier C. **burst separator**
B. chroma BPA D. R-Y video amplifier

137. Which of the following stages has bias from the ACC and color killer circuits?
A. R-Y demodulator C. **chroma BPA**
B. R-Y video amplifier D. Color oscillator

138. A crystal-ringer circuit is used for the
A. Y video amplifier C. color demodulator
B. **AFPC on color oscillator** D. chroma BPA

139. Which of the following is a midband cable TV channel?
A. 6 B. 7 C. **A or 14** D. J or 23

140. Coaxial cable for distribution systems has an impedance of
A. 50 ohms B. **75 ohms** C. 150 ohms D. 300 ohms

141. The cable converter output for the TV receiver is usually on channel
A. **3** B. 6 C. 7 D. 9

142. The VSWR for a line terminated in its Zo is
A. 0 B. **1** C. 1.5 D. 2

143. How many dBmV units correspond to a 1-mV signal level?
A. **0** B. 1 C. 3 D. 6

144. A tap for the subcarrier drop line has a
A. high insertion loss C. low tap loss
B. **high tap loss** D. 300 ohm impedance

145. The most popular plug for RG-590 coaxial cable is the
A. RCA phonograph plug C. **F connector**
B. 4-pin DIN connector D. banana pin

146. Which of the following is TRUE?
A. Excessive signal causes in the picture
B. A weak signal causes-modulation distortion
C. **A weak signal causes snow in the picture**
D. A scrambled signal has excessive sync amplitude

147. The upstream signal in two-way cable systems has the frequency of
A. **5 to 30 MHz** C. 500 MHz
B. 3 to 300 MHz D. 13 GHz

148. A typical value for the IF signal, in megahertz, for up-down cable converter
A. 45.75 C. 500.75
B. 300.75 D. **612.75**

149. Frequency synthesis is used for
A. **VCO in the up converter** C. fiber-optic cable
B. the trunk amplifier D. microwave

150. For in-band descramblers, the decoding pulses are sent on the
A. color subcarrier C. picture carrier
B. **sound carrier** D. H sync pulses

151. Which of the following is NOT true?
A. Microwave links can use FM.
B. **Fiber-optic cables have very high losses**
C. Supertrunk lines use large cable for low losses
D. The value 13 GHz is in the microwave band.

152. A trunk cable run a loss of -20 dBmV. To make up for this loss, the voltage gain of the next amplifier should be at least
A. **10** B. 100 C. 200 D. 300