1. One method commonly employed to extract Doppler information in a form suitable for
display on
the PPI scope is with a [01D01]
a. Power Amplifier
b. A-Scope display
c. Delay line canceller
d. Coherent oscillator
2. The characteristic feature of coherent MIT Radar is that the [01D02]
a. Transmitted signal must be out of phase with reference signal in receiver
b. The transmitted signal must be equal in the magnitude with reference signal
c. The transmitted signal must be coherent with the reference signal in the receiver
d. Transmitted signal must not be equal to reference signal in the receiver
3. In the following which are produce, with time a butterfly effect on the 'A' scope [01M01]
a. Fixed Targets
b. PPI scope
c. Moving Targets
d. Phase Detector
4. The stalo, coho and the mixer in which they are combined plus any low-level amplification
are
called the [01M02]
a. Transmitter-Oscillator
b. Transmitter-Exciter
c. Receiver-Amplifier
d. Receiver-exciter
5. The Doppler frequency shift produced by a moving target may be used in a pulse radar to
[01S01]
a. Combine moving targets from desired stationery objects
b. Determine the relative velocity of a target
c. Separate desired moving targets from desired stationery objects
d. Determine the displacement of a target
6. To operate with unambiguous Doppler pulse repetition frequency is usually [01S02]
a. Low
b. Very low
c. High
d. Very High
7. MTI stands for [01S03]
a. Moving Transmitter Indicator
b. Moving target interval
c. Moving target indication
d. Modulation Transmitting Interval
8. Echoes from fixed targets [01S04]
a. Vary in amplitude
b. Vary in frequency
c. Vary in pulse interval
d. Remains constant
9. The limitation of pulse MTI radar which do not occur with cw radar [02D01]
a. Blind speeds
b. Delay lines
c. Requires more operating powers
d. Requires complex circuitry
10. The presence of blind speeds within the Doppler frequency band reduces the [02D02]
a. Output of the radar
b. Detection capabilities of the radar
c. Unambiguous range
d. Ambiguous range
11. The capability of delay line canceller depends on the [02M01]
a. Quality of signal
b. Pulse Interval
c. Quality of the medium used as the delay line.
d. Delay time of the delay line
12. The output of the MTI receiver pahse detector be quantized into a sequence of digital words
by
using [02M02]
a. Digital quantizer
b. Digital Phase detector
c. Digital delay lines
d. Digital filter
13. A transmitter which consists of a stable low power oscillator followed by a power amplifier
is
called [02S01]
a. POMA
b. MOPA
c. MTI Radar
d. CW radar
14. A simple MTI delay line canceller is an example of a [02S02]
a. Frequency domain filter
b. High pass filter
c. Active filter
d. Time domain filter
15. The delay line must introduce a time delay equal to the [02S03]
a. Time interval
b. Pulse repetition interval
c. Pulse width
d. Phase shift
16. The delay line canceller [02S04]
a. Rejects the ac component of clutter
b. Rejects the dc component of clutter
c. Allows the ac as well as dc
d. It rejects all components
17. In pulse MTI radar, Doppler is measured by [02S05]
a. Continuous signals
b. Discrete samples
c. Constant period
d. Constant amplitude
18. The output of the two single delay line cancellers in cascade is the [02S06]

a. Double of that from a single canceller
b. U times that from a single canceller
c. Square of that from a single canceller
d. Same as that from a single canceller

19. To operate MTI radar with high pulse repetition frequencies [03D01]
a. λ fp must be small
b. λ fp must be unity
c. λ fp must be zero
d. fp must be large

20. If the first blind speed were 600 knots, the maximum unambiguous range would be ----- at a frequency of 300MHz [03D02]
a. 140 nautical miles
b. 600 knots
c. 140 knots
d. 130 nautical miles

21. The maximum unambiguous range [03D03]
a. Runamb = c /2
b. Runamb = (cT)2
c. Runamb = cT/4
d. Runamb = (cT/2)1/2

22. To operate MTI radar at low frequencies [03M01]
a. λ fp must be small
b. λ fp must be zero
c. fp must be large
d. λ fp must be unity

23. The effect of blind speed can be significantly reduced in [03M02]
a. Pulse MTI radar
b. Delay line canceller
c. Staggered - prf MTI
d. Pulse canceller

24. The blind speeds are present in pulse radar because [03S01]
a. Doppler is measured by discrete samples at the prf
b. Doppler is measured by continuous signal
c. Doppler is assumed to be zero
d. Doppler frequency remains constant

25. If the first blind speed is to be greater than the maximum radial velocity expected from the target, the product fp must be [03S02]
a. Small
b. Zero
c. Large
d. Infinity

26. The clutter-rejection notches may be widened by passing the output of the delay line canceller through a [03S03]
a. Coho
b. Stalo
c. Second delay line canceller
d. Pulse canceller

27. The frequency response of double delay line canceller is [03S04]
a. 4 Sin πfd1T
b. 4 π Sin πfd1T
c. 4 Sin2 πfd1T
d. (2 π Sin πfd1T)2

28. MTI radar primarily designed for the detection of aircraft must usually operate with [03S05]
a. Unambiguous Doppler
b. Unambiguous blind speed
c. Ambiguous Doppler
d. Ambiguous range

29. The blind speeds of two independent radars operating at the same frequency will be different if their [04D01]
a. Amplitudes are different
b. Blind speeds are different
c. Pulse repetition frequencies are different
d. Puse intervals are different

30. A disadvantage of the staggered prf is its inability to [04D02]
a. Cancel second-time around echoes
b. Cancel second-time around clutter echoes
c. Provide variable prf
d. Provide pulse to pulse incoherence

31. Second-time around clutter echoes can be removed by use of a [04M01]
a. Stalo
b. Coho
c. Constant prf
d. Delay canceller

32. The loss of range information and the collapsing loss may be eliminated by [04M02]
a. Sampling the range
b. Shaping the range
c. Quantizing the range
d. Keeping constant range

33. Range gating is a process of [04M03]
a. Sampling the range into various samples
b. Quantizing the range into small intervals
c. Getting constant range
d. Removing the range intervals

34. When the switching is pulse to pulse. It is known as a [04S01]
a. Delay canceller
b. Staggered prf
c. MTI radar
d. Pulse radar

35. Pulse to pulse coherence is provided by use of [04S02]
a. Stalo
b. Coho
c. Constant prf
d. Delay canceller

36. The output of the range gates is stretched in a circuit called [04S03]
a. Clutter rejection filter
b. Clutter filter
c. Box car generator

d. Sampler
37. The clutter rejection filter is a [04S04]
a. Band stop filter
b. Bandpass filter
c. Lowpass filter
d. Highpass filter
38. The bandwidth of clutter rejection filter depends upon the extent of the [04S05]
a. Spectrum
b. Expected clutter spectrum
c. Filter characteristic
d. Clutter characteristic
39. By quantizing the range [05D01]
a. Loss of range Information is eliminated
b. Loss of range information is increased
c. Range becomes constant
d. Range becomes sampled
40. Clutter visibility factor provides [05D02]
a. Attenuation
b. Probabilies of detection and false alarm
c. Cancellation ratio
d. Decrease in clutter residue
41. In box car generator [05D03]
a. Output of range gates is quantized
b. Output of range gates is sampled
c. Output of range gates is stretched
d. Range gate output remains constant
42. The clutter power remaining at the output of MIT system is [05M01]
a. Clutter pulse
b. Clutter residue
c. Clutter Attenuation
d. Clutter power ratio
43. Amplitude limiting cannot be employed in [05M02]
a. Coherent MTI receiver
b. Pulse Doppler radar
c. Non-coherent MTI receiver
d. CW radar
44. It provides stated probabilities of detection and false alarm [05S01]
a. Clutter attenuations
b. Clutter ratio
c. Cancellation ratio
d. Clutter visibility factor
45. MTI radar which uses amplitude fluctuations is [05S02]
a. Coherent
b. Pulsed Doppler
c. Non coherent
d. CW radar
46. Constant prf is helpful to provide [05S03]
a. Pulse to pulse coherence
b. Stalo
c. Delay
d. Coho
47. Clutter residue is [05S04]
a. Clutter input power
b. Clutter power remaining at output of MTI system
c. Clutter output power ratio
d. Clutter output attenuation
48. By using constant prf [05S05]
a. Clutter factor is minimized
b. Clutter input power is increased
c. Clutter echoes can be removed
d. Range gate output can be sampled
49. This radar designates targets to the tracking radar by providing the coordinates where the targets are to be found. [06D01]
a. TWS radar
b. Sequential radar
c. Acquisition radar
d. CW radar
50. The antenna pattern commonly employed with tracking radar is the [06D02]
a. Symmetrical beam
b. Symmetrical Pencil Beam
c. Asymmetrical Pencil beam
d. Asymmetrical beam
51. One of method of obtaining the direction and magnitude of the angular error in one coordinate is by alternately switching the antenna beam between two positions. This is called [06D03]
a. Lobe switching
b. Asymmetrical switching
c. Symmetrical switching
d. Sequential tracking
52. When the outout from more than one radar are automatically combined to provide target tracks, the processing is called [06S01]
a. ADIT
b. IDAT
c. GCA
d. PPI
53. A surveillance radar that provides target tracks is sometimes called a [06S02]
a. Track acquisition radar
b. Track-while-scan radar
c. Integrated ADT
d. ADT
54. Landing radars used for [06S03]
a. ADT
b. IADT
c. GCA
d. ADIT
55. ADIT stands for [06S04]
a. Automatic Decode Interlink Track
b. Automatic Decode Integrated Track
c. Automatic Detection and Integrated Track
d. Automatic Demodulation and Interlink Track
56. The difference between the target position and the reference direction is the [06S05]
a. Lobe error
b. Tracking error
c. Angular error

d. Sequential error
57. When the target is located along the reference direction [06S06]
a. Lobe error is zero
b. Lobe error is maximum
c. Angular error is maximum
d. Angular error is zero
58. GCA stands for [06S07]
a. General Control of Approach
b. Ground Connection of Approach
c. Ground Control of Approach
d. General Connection of Approach
59. In this technique the RF signals received from two offset antenna beams are combined so
that
both the sum and the difference signals are obtained simultaneously [07D01]
a. Monopulse
b. Pulse to pulse comparison
c. Fixed lobing
d. Sequential lobing
60. The mono pulse antenna must generate a sum pattern with [07D02]
a. Minimum boresight gain
b. Maximum boresight gain
c. Minimum pulse gain
d. Maximum pulse gain
61. This is used to rotate continuously an offset antenna beam [07M01]
a. rotating Feed
b. rotational scanning
c. conical scanning
d. nutating feed
62. The process of stretching the pulses before low-pass filtering is called [07M02]
a. Sampling
b. Quantizing
c. Sample and hold
d. Detecting
63. A conical scan-on-receive-only tracking radar radiates a [07M03]
a. Scanning transmit beam
b. Scanning non-transmit beam
c. Non scanning receive beam
d. Non scanning transmit beam
64. The angle between the axis of rotation and the axis of the antenna beam is called the
[07S01]
a. Lobe Angle
b. Conical Angle
c. Squint Angle
d. Rotation Angle
65. If the feed maintains the plane of polarization fixed as it rotates it is called a [07S02]
a. Rotating Feed
b. Fixed feed
c. Nutating Feed
d. Flexible feed
66. When the antenna is an target, the line of sight to the target and the rotation axis coincide,
and
the conical scan modulation is [07S03]
a. Maximum
b. Zero
c. Constant
d. Infinity
67. Extracting the modulation imposed on a repetitive train of narrow pulses is called [07S04]
a. Scanning
b. Conical scanning
c. Box caring
d. Sampling
68. LORO stands for [07S05]
a. Lobe of radiation only
b. Lobe on radiation only
c. Lobe on receive only
d. Lobe on radar only
69. The difference in amplitudes in the several antenna positions was proportional to the
[08D01]
a. Angle of arrival
b. Phase
c. Angular error
d. Tracking accuracy
70. A tracking radar which operates with phase information is similar to an active inter
ferometer and
might be called a [08M01]
a. Amplitude comparison monopulse radar
b. Phase monopulse radar
c. Simultaneous phase comparison radar
d. Hybric Tracking
71. The antenna beams not offset in [08M02]
a. Amplitude comparison monopulse radar
b. Phase comparison monopole radar
c. Hybrid tracking radar
d. Automatic tracking radar
72. The monopulse radar used [08S01]
a. Single beam
b. Time shared beam
c. Two or more timeshared beams
d. Two or more simultaneous beams
73. High sidelobes are the result of [08S02]
a. Sequential lobes
b. Grating lobes
c. Simultaneous lobes
d. Symmetrical lobes
74. Hybrid tracking system is a [08S03]
a. Monopulse system
b. Conical scan system
c. Combination of monopulse and conical scan
d. Sequential lobing
75. In this technique, target amplitude fluctuations do not affect the tracking accuracy [08S04]
a. Cono pulse system
b. Monopulse system

c. Conical scan system
d. Phase comparison monopulse
76. The sequential lobing and conical scan techniques used [08S05]
a. Simultaneous beam
b. Two or more simultaneous beams
c. Single time shared antenna beam
d. Two or more time shared beam
77. The phase and amplitude comparison principles can be combined in a single radar to produce [08S06]
a. Two dimensional angle tracking with four antenna beams
b. One dimensional angle tracking with four antenna beams
c. Two dimensional angle tracking with only two antenna beams
d. One dimensional angle tracking with only two antenna beams
78. The problem of high side lobes can be reduced by [08S07]
a. Reducing antenna apertures
b. Reducing the angular error
c. Overlapping the antenna apertures
d. Reducing angle sensitivity
79. This scan covers an angular search volume with circular symmetry [09D01]
a. Palmer scan
b. Spiral scan
c. Helical scan
d. Circular scan
80. This scan suffer from the disadvantage that all parts of the scan volume do not receive the same energy unless the scanning speed is varied during the scan cycle [09D02]
a. Helical scan
b. Palmer scan
c. Lowpass filter
d. Conical scan
81. The range gating [09M01]
a. Isolates on target, excluding targets at other ranges
b. Does not permits the box cargenerator
c. Antenna is continuously rotated
d. Can cause noise in an analogous manner
82. The range gating [09M02]
a. Isolates on target, excluding targets at other ranges
b. Does not permits the box cargenerator
c. Antenna is continuously rotated
d. Can cause noise in an analogous manner
83. These are used to obtain hemispheric coverage with a pencil beam [09M03]
a. Spiral and palmer scan
b. Spiral and helical scan
c. Helical and nodding scan
d. Helical and conical scan
84. The random wandering of the apparent radar reflecting center gives rise to [09S01]
a. Target glint
b. Random noise
c. Radar fluctuations
d. Center fluctuations
85. This type of noise depends on the length of the target and its shape [09S02]
a. Random Noise
b. Gating Noise
c. Range-tracking noise
d. Radar-tracking noise
86. In this scan the antenna is continuously rotated in azimuth while it is simultaneously raised or lowered in elevation [09S03]
a. Plamer scan
b. Spiral Scan
c. Circular scan
d. Helical scan
87. It consists of a rapid circular scan about the axis of the antenna combined with a linear movement of the axis of the rotation [09S04]
a. Palmer Scan
b. Spiral Scan
c. Helical scan
d. Circular scan
88. When the axis of rotation is held stationary, the palmer scan reduces to the [09S05]
a. Stationary scan
b. Spiral scan
c. Conical scan
d. Helical scan
89. It is used with high-finding radars [09S06]
a. Helical scan
b. Nodding scan
c. Palmer scan
d. Conical scan
90. When the target is being tracked, the signal-to-noise ratio available from the monopulse radar is [10D01]
a. Less than that of a conical scan radar
b. Equal to that of a conical scan radar
c. Greater than that of a conical scan radar
d. Zero
91. This radar first makes its angle measurement and then integrates a number of pulses to obtain the required signal-to-noise ratio and to smooth the error [10D02]
a. Conical scan radar
b. Monopulse radar
c. Sequential lobing
d. Helical scan radar
92. This radar integrates a number of pulses first and then extracts the angle measurement [10M01]
a. Conical scan radar
b. Monopulse radar
c. Helical scan radar

d. Spiral scan radar

93. With the monopulse tracker it is possible to obtain a measure of the angular error in two coordinates on the basis of [10M02]

a. Four pulses

b. Single Pulses

c. Dual Pulses

d. Many Pulses

94. The side lobe levels are higher than desired in this radar [10S01]

a. Sequential lobbing

b. Conical scan

c. Amplitude comparison monopulse

d. Phase comparison monopulse

95. It suffers less loss and the antenna and feed systems are usually less complex [10S02]

a. Sequential lobing

b. Conical scan

c. Helical scan

d. Spiral scan

96. This radar having more tracking accuracy [10S03]

a. Conical scan radar

b. Helical scan radar

c. Monopulse radar

d. Sequential lobing

97. It is the preferred technique for precision tracking [10S04]

a. Conical scan

b. Monopulse radar

c. Circular scan

d. Spiral scan

98. It is not degraded by amplitude fluctuations [10S05]

a. Conical scan radar

b. Monopulse radar

c. Helical scan

d. Spiral scan

99. It is less costly and less complex [10S06]

a. Conical scan radar

b. Surveillance radar

c. Monopulse radar

d. Phased array radar

100. North filter frequency response function is [11D01]

a. H(f) = GaS*(f) exp (j2&pift1)

b.

c.

d. H(f) = GaS*(f) exp ($-j2\pi ft1$)

101. The matched filter may also be specified by [11D02]

a.

b.

c.

d.

102. Peak signal-to-mean noise ratio of the matched filter [11D03]

a.

b.

c.

d.

103. The amplitude spectrum of the matched filter is [11M01]

a. Obtained by its frequency response

b. Negative of the amplitude spectrum of signal

c. Same as the amplitude spectrum of signal

d. Depends on phase spectrum of signal

104. The noise power per hertz of bandwidth, N0 is equal to [11M02]

a.

b.

c.

d.

105. A network whose frequency response function maximizes the output peak-single-to mean Noise ratio is called a [11S01]

a. Envelope Detector

b. Matched Detector

c. Matched Filter

d. Optimum filter

106. If the band width of the receiver passband is wide compared with that occupied by the signal energy [11S02]

a. Extraneous noise is introduced

b. Noise is reduced

c. Increases the signal to noise ratio

d. Frequency response is improved

107. If the receiver bandwidth is narrower than the bandwidth occupied by the signal [11S03]

a. Extraneous noise is introduced

b. Noise energy is reduced

c. Increases the signal-to-noise ratio

d. Frequency response is improved

108. When there is optimum bandwidth [11S04]

a. Signal to noise ratio is minimum

b. Signal to noise ratio is maximum

c. Noise energy is maximum

d. Noise energy is reduced

109. Phase spectrum of the matched filter is [11S05]

a. Inversely proportional to frequency

b. Negative of the phase spectrum of signal

c. Same as the phase spectrum of signal

d. Proportional to amplitude

110. The cross correlation function R(t) of two signals y( ) and s( ) each of finite duration is defined as [12D01]

a.

b.

c.

d.

111. The matched filter forms the [12D02]

a. Cross correlation between transmitted signals

b. Cross correlation between signal corrupted by noise and replica of transmitted signal

c. Correlation between signal corrupted by noise and replica of transmitted signal

d. Cross correlation between received signal corrupted by noise and a replica of the transmitted signal

112. The output y0(t) matched filter with impulse response h(t) when the input is yin(t) = s(t)+n(t) is [12D03]

a.
b.
c.
d.

113. When the input noise is stationary and white the peak signal to mean noise ratio is [12M01]

a.
b.
c.
d.

114. The maximum ratio of the peak signal power to the mean noise power is [12M02]

a.
b.
c.
d.

115. The Output of the matched filter is [12S01]

a. Replica of the input signal
b. Proportional to input signal to noise ratio
c. Not a replica of the input signal
d. Not preserving the shape of the input signal

116. The output of the matched filter proportional to [12S02]

a. Input signal
b. Input signal correlated with a replica of transmitted signal
c. Input signal correlated with a replica of transmitted signal except for time delay t1
d. Input signal cross correlated with a replica of the transmitted signal except for the time delay t1

117. The auto correlation function of a rectangular pulse of width is a [12S03]

a. Square whose base is of width T
b. Triangular whose base is of width T
c. Triangular whose base is of width 2
d. Square whose base is of width 2T

118. If the input signal yin(t) were the same as the signal s(t) for which the matched filter was designed, the output would be the [12S04]

a. Correlation function
b. Cross correlation function
c. Auto correlation function
d. Replica of the transmitted signal

119. When the input signal s(t) is a rectangular sine wave pulse the output peak-signal to mean noise ratio is [12S05]

a. Same as signal to noise power ratio
b. Twice the signal to noise power ratio
c. Same as average signal to noise power ratio
d. Twice the average signal to noise power ratio

120. This equation describes the output y0(t) of the matched filter as the [13D01]

a. Correlation between the input signal and transmitted signal
b. Cross correlation between the input signal and a delayed replica of the transmitted signal
c. Frequency response function
d. Correlation function

121. This requires a longer search time [13D02]

a. Test for presence of a target at a single time delay
b. Test for presence of targets at time delays founds by varying Tr
c. Test for target at Tr
d. Test for target at (t-Tr)

122. The cross correlation receiver tests for the presence of a target at [13M01]

a. Only a single time delay
b. Various time delays
c. Two time delays T1 and T2
d. Two time delays by means of the mixer

123. In cross correlation detection the input signal y(t) is multiplied by a delayed replica of the transmitted signal s(t-Tr) and the product is passed through [13M02]

a. Mixer to get integrated output
b. Delay Tr
c. Lowpass filter to perform the integration
d. High pass filter to perform the differentiation

124. The matched filter receiver can be replaced by this receiver that performs the same Mathematical operation [13S01]

a. Correlation receiver
b. Cross correlation receiver
c. Super Hetrodyne receiver
d. Non matched filter receiver

125. By adding parallel channels search time can be [13S02]

a. Increased
b. Reduced
c. Remains constant
d. Zero

126. In correlation detection mixer produces [13S03]

a. Integrated output of input
b. Product of input and delayed replica of transmitted signal
c. Delayed replica of input signal
d. Delayed replica of transmitted signal

127. In proportion to the number of time delay intervals Tr that are to be tested. The play back speed is [13S04]

a. Decreased
b. Increased
c. Independent of time delay
d. Twice that of Tr

128. Cross correlation receiver and the matched filter receiver are [13S05]

a. Not equivalent
b. Equivalent practically
c. Equivalent mathematically
d. Not equivalent mathematically

129. The frequency response function of the linear time invariant filter [13S06]
a. Minimizes that output peak signal to noise ratio
b. Maximizes the output peak signal to mean noise ratio
c. Doubles the output peak signal to noise ratio
d. Minimizes the output peak signal to mean noise ratio

130. The maximum efficiency of the single tuned filter occurs for [14D01]
a. B = 0.4
b. BT = 0.6
c. BT = 1.37
d. BT = 0.72

131. For Gaussian pulse input, the maximum efficiency of the Gaussian filter occurs for
[14D02]
a. B = 0.44
b. BT = 0.67
c. BT = 1.37
d. BT = 0.72

132. In matched filter the measure of efficiency is taken as [14M01]
a. Peak signal to noise ratio from the matched filter divided by the peak signal to noise ratio from matched
filter
b.
c. Peak signal to noise ratio from the non-matched filter divided by the peak to noise ratio from matched filter
d.

133. The maximum efficiency of the rectangular filter occurs (when input is rectangular pulse) for
[14M02]
a. B = 1.37
b. BT = 0.72
c. BT = 0.44
d. BT = 0.67

134. In Gaussian pulse input rectangular filter loss in SNR compared with matched filter
[14M03]
a. 0.49dB
b. 0.85dB
c. 0dB
d. 0.56dB

135. For rectangular pulse input Gaussian filter have loss in SNR compared with matched filter
[14S01]
a. 0.49dB
b. 0.88dB
c. 0.56dB
d. 0.5dB

136. The loss in SNR incurred by use of the non matched filter is [14S02]
a. large
b. Small
c. Zero
d. Same as matched filter

137. If filter consists of S cascaded single tuned stages with rectangular input, loss in SNR
compared
with matched filter is [14S03]
a. 0.88 dB
b. 0.49 dB
c. 0.5 dB
d. 0.9 dB

138. The loss in SNR incurred by use of these filters is small [14S04]
a. Matched filters
b. Non matched filters
c. Single tuned filters
d. Gaussian filters

139. If filters consisting of 2 cascaded single tuned stages with rectangular pulse input loss in
SNR
compared with matched filter is [14S05]
a. 0.88 dB
b. 0.49 dB
c. 0 dB
d. 0.56 dB

140. For white noise non white noise matched frequency response function reduces to [15D01]
a. H(f) = Ga S*(f) exp (j2πft1)
b. H(f) = Ga S*(f) exp (-j2πft1)
c. H(f) = Ga S(f) exp (-j2πft1)
d. H(f) = Ga S(f) exp (j2πft1)

141. The non white noise matched filter can be considered as the [15D02]
a. Cascade of whitening and non whitening filters
b. Cascade of whitening and matched filters
c. Cascade of non whitening filters
d. Cascade of matched, non matched filters

142. When NWN matched filter can be considered as cascade of two filters. The first filter is
[15D03]
a. Whitening filter
b. Non whitening filter
c. Gaussian filter
d. Matched filter

143. When noise is non white, this filter maximizes output signal to noise ratio [15D04]
a. Whitening filter
b. NWN Matched filter
c. Gaussian filter
d. Matched filter

144. If the input power spectrum of the interfering noise is given by [Ni(f)]2 the frequency
response
function of the filter which maximizes the output signal to noise ratio is [15M01]
a.
b.

c.
d.
145. When the noise is non white, non white noise matched filter [15M02]
a. Minimizes the output SNR
b. Maximizes the output SNR
c. Doubles the output SNR
d. Doubles the output SNR divided by F0
146. For white noise the input power spectrum of the interfering noise is [15S01]
a. Constant
b. Zero
c. Increases
d. Decreases
147. The whitening filter acts to make [15S02]
a. Noise spectrum is zero
b. Noise spectrum uniform
c. Noise spectrum non uniform
d. Finite noise spectrum
148. When NWN matched filter can be considered as cascade of two filters. The second filter is
[15S03]
a. Whitening filter
b. Non whitening filter
c. Gaussian filter
d. Matched filter
149. If the spectrum of the noise accompanying the signal was assumed to be white it indicates
that
the matched filter characteristic was [15S04]
a. Dependent of frequency
b. Independent of frequency
c. Improved
d. Remains constant
150. The noise figure Fn of a linear network is defined as
[16D01]
a.
b.
c.
d.
151. The output noise from two circuits in cascade is N0, the noise figure F0 is [16D02]
a.
b.
c.
d.
152. If the receive effective noise temperature is Te, then operating noise temperature is
[16D03]
a. ToFs
b. T0/Fs
c. To/1+Fs
d. To / 1-Fs
153. Effective noise temperature is defined as [16M01]
a. Te = (Fn-1)T0
b. Te = FnT0
c. Te = Fn-1/T0
d. Te = (Fn+1)T0
154. The noise figure of 'N' networks in cascade may be shown to be [16S01]
a. F0 = F1+F2+F3+ Fn-1
b.
c.
d.
155. It is defined as the effective noise temperature of the receiver system including the
effects of
antenna temperature [16S02]
a. Effective noise temperature
b. Noise figure
c. System noise temperature
d. Antenna noise temperature
156. The effective noise temperature of receiver consisting of a number of networks in cascade
[16S03]
a.
b.
c.
d.
157. System noise temperature is given by [16S04]
a. Ts = Ta + Tf
b. Ts = Ta + Te
c. Ts = Ta - Tf
d. Ts = Ta - Te
158. The expression for noise figure interms of additional noise introduced by network it self is
[16S05]
a.
b.
c.
d.
159. The noise figure is commonly expressed in [16S06]
a. Hertzs
b. Decibels
c. Hz/W
d. W/Hz
160. When a long persistence is needed the required phosphor is [17D01]
a. P7
b. P19
c. P1
d. P39
161. This is universally used as the radar display [17M01]
a. Raw Video
b. Blip display
c. CRT display
d. Synthetic display
162. Where no persistence is needed as when the frame time is less than the response time of
the eye.
This phosphor is commonly used [17M02]
a. P7
b. P19
c. P1
d. P39

163. It is appropriate for PPI presentations where the frame times are several seconds
[17M03]
a. P19
b. P39
c. P29
d. P7
164. When the display is connected directly to the video output of the receiver the information
displayed is called [17S01]
a. Raw video
b. Synthetic video
c. CRT video
d. Blip video
165. In this type of video, receiver video output is processed by automatic detection and
tracking
processor [17S02]
a. Synthetic Video
b. Raw Video
c. CRT Video
d. Blip Video
166. An intensity modulated rectangular display with azimuth angle indicated by horizontal
coordinate
and elevation angle by the vertical coordinate is [17S03]
a. A Scope
b. B Scope
c. C Scope
d. R Scope
167. This is the device that allows a single antenna to serve both the transmitter and the
receiver
[17S04]
a. Dual Pulse generator
b. Duplexer
c. Multiplexer
d. Demultiplexer
168. This is based on the short-slot Hybrid function
[17S05]
a. Balanced Demodulator
b. Balanced Duplexer
c. Unbalanced Duplexer
d. ATR Tube
169. The power handling capability is greater in the
[17S06]
a. Balanced Duplexer
b. Branch Duplexer
c. ATR Tube
d. Receiver protector
170. Phased array is made up of [18D01]
a. Non radiating antennas
b. Radiating Antennas
c. Loop Arrays
d. Non Resonant arrays
171. The linear array generates a fan beam such that radiation of pattern [18D02]
a. Perpendicular to array
b. Parallel to array
c. Lies in same plane as array
d. Not lies in array plane
172. It offens separation of transmitter and receiver without need for conventional duplexer
configurations [18M01]
a. ATR Tube
b. Ferrite Circulator
c. TR Tube
d. Diode Limiter
173. The ferrite circulator with receiver protector is attractive for radar applications because of
its
[18M02]
a. Narrow Bandwidth
b. Long life
c. Solid state configuration
d. Low VSWR
174. The ferrite circulator have [18S01]
a. Less life time
b. Narrow bandwidth
c. Wider bandwidth
d. Complex designing
175. The phased array is a [18S02]
a. Directive Antenna
b. Resonant Antenna
c. Non Resonant Antenna
d. Non Directive Antenna
176. It consists of elements arranged in a straight line in one dimension [18S03]
a. Non linear array
b. Loop Array
c. Linear Array
d. Planar Array
177. It is a two dimensional configuration [18S04]
a. Non linear array
b. Loop Array
c. Linear Array
d. Planner Array
178. The VSWR is a measure of the amount of power
[18S05]
a. Incident by Antenna
b. Radiated by Antenna
c. Reflected by Antenna
d. Isolated by Antenna
179. It is a good absorber device as compared to gas tube TR [18S06]
a. Reflective limiter
b. Circulator
c. Ferrite limiter
d. TR limiter
180. When directive elements are used, the resultant array antenna radiation pattern is
[19D01]
a. G( ) = Ge( ) Ga( )
b. G(θ) = Ge(θ)+Ga(θ)
c. G(θ) = Ge(θ) - Ga(θ)
d. G(θ) = 2Ge(θ) + Ga(θ)

181. If the radiation patterns in the two principal planes are G1(e) and G2(a) the two
dimensional
antenna pattern is [19D02]
a. G1(θe) + G2(θa)
b. 2G1(θe) + G2(θa)
c. G1(e) G2(a)
d. G1(θe)/G2(θa)
182. Grating lobes caused by a widely spaced array be eliminated with [19M01]
a. Directive elements
b. End fire arrays
c. Array elements
d. Lobe factors
183. Radiate little or no energy in the directions of the undesired lobes [19M02]
a. Non radiative elements
b. Non directive elements
c. Directive elements
d. Non resonant elements
184. An array whose elements are distributed on a non planar surface is called [19S01]
a. Electronically scanned array
b. Conformal Array
c. Linear array
d. Loop array
185. The array factor has also been called [19S02]
a. Lobe factor
b. Radiation factor
c. Space factor
d. Element factor
186. This is the pattern of an array composed of Isotropic elements [19S03]
a. Directive factor
b. Lobe factor
c. Element factor
d. Space factor
187. As the beam is scanned off the broad side direction. The half power beam width in the
plane of
scan [19S04]
a. Decreases
b. Remains constant
c. Reduced to zero
d. Increases
188. If the same phase is applied to all elements the relative phase difference between adjacent elements is [19S05]
a. 900
b. 1800
c. 450
d. zero
189. If the spacing between antenna elements is /2, the pattern of uniformly illuminated array is
[19S06]
a. Similar to pattern of continuously illuminated uniform array
b. Different from pattern of continuously illuminated uniform array
c. Same as pattern of non uniform array
d. Similar to pattern of discontinuous illuminated array
190. In order to position the main beam of the radiation pattern at 0 the relative phase shift
between
adjacent elements of the array must be [20D01]
a.
b.
c.
d.
191. In this array the energy to be radiated is divided between the elements by a power splitter
[20D02]
a. Serial feed array
b. Parallel fed array
c. Corporate feed
d. Circular feed
192. The maximum phase change required of each phase shifter in the parallel feed array is
[20M01]
a. π Radians
b. Radians
c. Many times 2π radians
d. 2π radians
193. A two dimensional parallel feed array of MN elements requires [20M02]
a. M+N separate control signals
b. control signals
c. M+N-2 separate control signals
d. separate control signals
194. When a series of power splitters are used to create a tree like structure is called [20S01]
a. Series feed
b. Parallel feed
c. Corporate feed
d. Tree feed
195. In the series feed where the signal is fed from one end the position of the beam will
[20S02]
a. Remains constant
b. Vary with signal strength
c. Vary with frequency
d. Vary with phase shift
196. Each phase shifter in the series fed linear array has
[20S03]
a. Phase shift - 37π Radians
b. Same value of phase shift
c. Phase shift greater than 2π radians
d. Variation in phase with frequency
197. Phase shifter in a series feed array must be of [20S04]
a. Higher loss compared to parallel feed array
b. Lower loss compared to parallel feed array
c. Loss same as that of parallel feed array
d. Zero
198. The proper phase change for beam steering is introduced by [20S05]
a. Power splitters
b. Phase shifters

c. Phase splitters
d. Corporate feed

199. In the parallel feed array energy to be radiated is [20S06]

a. Divided by a power splitter
b. Obtained by phase shifter
c. Obtained by corporate feed

d. Divided by a phase splitter