

University of Mumbai

Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Rev2016

Examination: Third Year Semester VI

Course Code: ECCDLO 6022 and Course Name: Radar Engineering

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	What is the frequency range for L Radar frequency band
Option A:	1-2GHz
Option B:	2-4 GHz
Option C:	4-8 GHz
Option D:	8-12 GHz
Q2.	A radar signal takes 200 μ s to travel towards the target and back find the range of the target.
Option A:	40km
Option B:	50km
Option C:	35km
Option D:	30km
Q3.	Noise bandwidth is measured in the receiver in block
Option A:	mixer
Option B:	Video amplifier
Option C:	IF amplifier
Option D:	Second detector
Q4.	A radar measures an apparent range of 8nmi when prf is 4000Hz but it measure an apparent range of about 19 nmi when prf is 3500Hz what is the true range?
Option A:	97nmi
Option B:	78nmi
Option C:	99nmi
Option D:	88nmi
Q5.	The maximum range R of detection of target is proportional to ? of the transmitted power.
Option A:	square root
Option B:	square
Option C:	fourth root
Option D:	one-fourth
Q6.	What is V_r related to Doppler frequency shift
Option A:	Relative voltage
Option B:	Relative velocity
Option C:	Repeller voltage
Option D:	Repeller velocity
Q7.	Staggered pulse concepts is used to remove

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Option A:	In equality
Option B:	Blind speed
Option C:	Matching
Option D:	Blind range
Q8.	The minimum range of detection by a pulse radar depends on
Option A:	pulse width
Option B:	average transmitter power
Option C:	beam width of the antenna
Option D:	bandwidth
Q9.	The coho in MTI radar operates at the
Option A:	intermediate frequency
Option B:	transmitted frequency
Option C:	received frequency
Option D:	pulse repetition frequency
Q10.	Blind speed causes target to appear
Option A:	moving uniformly
Option B:	moving irregularly
Option C:	stationary
Option D:	intermittently
Q11.	STALO' stands for
Option A:	standard local oscillator
Option B:	stable L-band output
Option C:	stabilized local oscillator
Option D:	saturated and linear oscillator
Q12.	When P is the peak transmitted pulse power, the maximum range of the radar is proportional to
Option A:	P
Option B:	$(P)^{1/2}$
Option C:	$(p)^{1/4}$
Option D:	$(1)^{1/4}$
Q13.	MTI radar operates at 10 GHz with PRF of 3000 ppps. The lowest blind will be
Option A:	44km/hr
Option B:	66km/hr
Option C:	81km/hr
Option D:	162km/hr
Q14.	The tracking technique that derives angle error information on the basis of a single pulse is known as
Option A:	Lobe switching or serquential switching
Option B:	Monopulse
Option C:	Conical Scan
Option D:	Low angle tracking

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Q15.	Lobe switching gives
Option A:	angular error
Option B:	Range
Option C:	Velocity
Option D:	Target Size
Q16.	In conical scan, radar the beam is
Option A:	Rotated continuously
Option B:	Rotated in 2 steps
Option C:	Rotated in 4 steps
Option D:	Rotated in 360degree
Q17.	Monopulse is a method
Option A:	Simultaneous lobing
Option B:	sequential lobing
Option C:	Conical Scanning
Option D:	Random lobing
Q18.	The main advantage of TWT over a multi-cavity klystron is
Option A:	greater bandwidth
Option B:	more efficient
Option C:	higher number of modes
Option D:	higher output power
Q19.	Which one of the following can be used for the amplification of microwave energy
Option A:	traveling-wave tube
Option B:	magnetron
Option C:	Reflex Klystron
Option D:	Gunn diode
Q20.	Which of the following is solid state device
Option A:	Magnetron
Option B:	Travelling wave Tube
Option C:	Klystron
Option D:	GaAs MOSFET
Q21.	One of the following is a crossed field device
Option A:	Magnetron
Option B:	Travelling wave Tube
Option C:	Two cavity klystron
Option D:	Reflex klystron
Q22.	Phase difference between adjacent resonators in an N-resonator travelling magnetron is given by, where n is an integer
Option A:	$(2\pi/N)$ radians
Option B:	$(2\pi n/N)$ radians

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Option C:	$2\pi n$ radians
Option D:	n/N radians
Q23.	The intensity modulated map like circular display that gives target location in polar coordinates
Option A:	F-scope
Option B:	A-scope
Option C:	B-scope
Option D:	PPI
Q24.	Noise figure for a receiver is defined as the ratio of
Option A:	(S/N) ratio at the input to (S/N)ratio at the output
Option B:	(S/N) ratio at the output to (S/N)ratio at the Input
Option C:	S/N ratio at the input
Option D:	S/N ratio at the output
Q25.	Noise Factor(F) and Noise Figure(NF) are related as
Option A:	$F = 10 \log_{10}(NF)$
Option B:	$NF = 10 \log_{10}(F)$
Option C:	$. NF = 10 (F)$
Option D:	$F = 10 (NF)$

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	B
Q2.	D
Q3.	C
Q4.	D
Q5.	C
Q6.	B
Q7.	B
Q8.	A
Q9.	A
Q10.	C
Q11.	C
Q12.	C
Q13.	D
Q14.	B
Q15.	A
Q16.	A
Q17.	A
Q18.	A
Q19.	A
Q20.	D
Q21.	A
Q22.	B
Q23.	D
Q24.	A
Q25.	B