



Ramrao Adik Institute of Technology  
Nerul, Navi Mumbai

Date: 29/09/2020

RAIT/SS/Admn./2020-21

**NOTICE**

**Sample Papers for all branches of R2012 for the examination scheduled on  
01/10/2020**

The sample papers for the online examination to be held in September/October 2020 are attached herewith.

**Please note that, these are the sample papers to indicate the pattern of examination. Questions from these sample paper may or may not appear in the examination.**

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Principal, RAIT

Program: BE Electronics Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code:EXC505 and Course Name: DigitalCommunication

Time: 1hour

Max. Marks: 50

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

Q1. Which system uses digital transmission?

- Option A: ISDN
- Option B: LANs
- Option C: ISDN & LANs
- Option D: ISDN & PSTN

Q2. Analog to digital conversion includes

- Option A: Sampling
- Option B: Quantization
- Option C: Decoding and Sampling
- Option D: Sampling and Quantization

Q3. In digital transmission, signal degradation can be removed using

- Option A: an amplifier
- Option B: a filter
- Option C: a regenerative Repeater
- Option D: a equalizer

Q4. Which one is a Pulse Modulation Technique?

- Option A: PWM
- Option B: PPP
- Option C: PPS
- Option D: PSP

Q5. Sampling theorem is used for converting

- Option A: Continuous time signal to discrete

- Option B: Discrete to continuous time signal
- Option C: Continuous time signal to discrete & vice versa
- Option D: Discrete to Digital signal

Q6. The objective of source coding is

- Option A: to use codes that are long as possible to represent the source signal
- Option B: to use codes that are short as possible to represent the source signal
- Option C: to use messages that are short as possible to represent the source signal
- Option D: to use codes that are lengthy as possible to represent the source signal

Q7. The amount of information received from a message is

- Option A: indirectly related to uncertainty
- Option B: directly related to probability
- Option C: inversely related to probability
- Option D: inversely related to uncertainty

Q8. The average information per message is referred as

- Option A: Probability
- Option B: Channel Capacity
- Option C: Entropy
- Option D: Source Coding

Q9. Average rate at which information is transferred is called information rate and is given by

- Option A:  $R=rH$
- Option B:  $R=rP$
- Option C:  $r=RH$
- Option D:  $R=rE$

Q10. Huffman codes:

- Option A: allow errors to be detected but not corrected
- Option B: allow errors to be detected and corrected
- Option C: allow alphanumeric data to be corrected
- Option D: allow alphanumeric data to be compressed

Q11. Which coding scheme requires DC continuity?

- Option A: AMI
- Option B: Manchester

- Option C: unipolar NRZ  
Option D: bipolar RZ

Q12. In the equation  $I = ktB$ ,  $I$  is measured in:

- Option A: amperes  
Option B: amperes per second  
Option C: bits  
Option D: bits per second

Q13. Inter Symbol Interference is caused by

- Option A: ideal channel that are not distortion less over the entire signal B.W  
Option B: non ideal channel that are not distortion less over the entire signal B.W  
Option C: non ideal channel that are distortion less over the entire signal B.W  
Option D: non ideal channel that are not distortion free over the entire signal B.W

Q14. Correlative Coding is implemented by

- Option A: Modified Encoding  
Option B: Modified binary Encoding  
Option C: Modified duo binary Encoding  
Option D: Modified trio binary Encoding

Q15. The time interval over which the received signal may be sampled without error may be explained in an eye pattern by

- Option A: Width of eye opening of eye pattern  
Option B: Rate of closure of eye of eye pattern  
Option C: Height of the eye opening of eye pattern  
Option D: Narrow opening of eye pattern

Q16. For QAM, the two dimensions of its symbol space are:

- Option A: amplitude and frequency  
Option B: amplitude and phase angle  
Option C: frequency and phase angle  
Option D: I-bits and Q-bits

Q17. The maximum bandwidth is occupied by

- Option A: ASK  
Option B: FSK  
Option C: BPSK

Option D: MSK

Q18. In On-Off keying, the carrier signal is transmitted with signal value '1' and '0' indicates

- Option A: No carrier
- Option B: Half the carrier amplitude
- Option C: Amplitude of modulating signal
- Option D: Phase of modulating signal

Q19. In coherent detection of signal

- Option A: Local carrier is not generated
- Option B: Carrier of frequency and phase as same as transmitted carrier is generated
- Option C: The carrier is not in synchronization with modulated carrier
- Option D: Carrier of frequency and amplitude as same as tran carrier is generated

Q20. In block coding, we divide our messages into blocks, each of k bits, called

- Option A: blockword
- Option B: dataword
- Option C: datacode
- Option D: codeword

Q21. To guarantee correction of up to 5 errors in all cases, the minimum hamming distance in a block code must be

- Option A: 11
- Option B: 10
- Option C: 5
- Option D: 4

Q22. We can divide coding scheme into two broad categories that are

- Option A: Block, Linear
- Option B: Linear, Convolution
- Option C: Block, Convolution
- Option D: Cyclic, Convolution

Q23. Which are special linear block codes with one extra property. If a code is rotated, the result is another codeword.

- Option A: Non-linear
- Option B: Convolution
- Option C: Reed-Solomen

Option D: Cyclic

Q24. The baseband bandwidth for a voice-grade (telephone) signal is:

Option A: approximately 3 kHz

Option B: 20 Hz to 15,000 Hz

Option C: at least 5 kHz

Option D: approximately 5 kHz

Q25. Why spread spectrum technique is inefficient for a single user?

Option A: Small Transmission Bandwidth

Option B: Large Transmission Bandwidth

Option C: Fixed Transmission Bandwidth

Option D: Fixed null Bandwidth

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**Examination 2020 under cluster 3 (FCRIT)**

Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code and Course Name:ETC505 - Integrated Circuits

Time: 1hour

Max. Marks: 50

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

Q1.	The classification of the open loop op-amp configuration based on?
Option A:	the output obtained
Option B:	the amplification
Option C:	the feedback network
Option D:	the input applied
Q2.	The main disadvantage of IC is?
Option A:	Low power requirement
Option B:	It is compact in size
Option C:	ICs are considered to use minimum number of external connections
Option D:	Parameter within the IC cannot be modified
Q3.	Why timer IC number as 555?
Option A:	It contain 3 capacitor
Option B:	It contain 3 block
Option C:	It contain 3 resistor of value 5K ohm
Option D:	It contain SR flip-flop
Q4.	In open loop configuration, what will be the voltage drop across the source resistance of differential amplifier?
Option A:	Zero
Option B:	Infinity
Option C:	One
Option D:	Greater than one
Q5.	The period during which the voltage across capacitor is equal to input voltage in sample and hold circuits is known as_____
Option A:	Hold period
Option B:	Delay period
Option C:	Sample period
Option D:	Charging period

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Q6.	In square wave generator if $R_2 = 1.16 R_1$ then output frequency is?
Option A:	$f_o = (1/2RC)$
Option B:	$f_o = (ln/2RC)$
Option C:	$f_o = (ln /2 \times VRC)$
Option D:	$f_o = (ln/v(2 RC))$
Q7.	Find the value of feedback resistor? When internal resistor of the second order high pass filter is equal to $10k\Omega$ .
Option A:	$6.9k\Omega$
Option B:	$5.86k\Omega$
Option C:	$10k\Omega$
Option D:	$12.45Kw$
Q8.	In following circuits which converts randomly shaped waveform to regular shaped waveforms?
Option A:	Voltage limiter
Option B:	Comparator
Option C:	Current limiter
Option D:	Schmitt trigger
Q9.	Which of the following known as free running multivibrator?
Option A:	Voltage control oscillator
Option B:	Stable multivibrator
Option C:	Square wave oscillator
Option D:	Pulse stretcher
Q10.	The phase-locked loop tracks any change in input frequency when it is in___
Option A:	Free running state
Option B:	Capture state
Option C:	Phase locked state
Option D:	Phase change state
Q11.	Synchronous decade counter number is
Option A:	74166
Option B:	74266
Option C:	74162
Option D:	74163
Q12.	7492 is
Option A:	Synchronous 4 bit binary counter
Option B:	Synchronous 4 bit up-down counter
Option C:	Asynchronous decade
Option D:	Asynchronous modulus-12
Q13.	Which IC known as universal shift register



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Option A:	74162
Option B:	74133
Option C:	74194
Option D:	74191
Q14.	How many natural states will there be in a 4-bit ripple counter?
Option A:	4
Option B:	16
Option C:	8
Option D:	32
Q15.	In asynchronous counter internal propagation delay is removed by using ____
Option A:	Ripple counter
Option B:	Ring counter
Option C:	Modulus counter
Option D:	Synchronous counter
Q16.	In modulus-10 binary counter terminal count is _____
Option A:	1001
Option B:	1100
Option C:	1011
Option D:	1010
Q17.	Linear series regulators are suited for application with
Option A:	High current
Option B:	Medium current
Option C:	low current
Option D:	zero
Q18.	Which of the following circuits act as full wave rectifier?
Option A:	Positive clipper with two diodes
Option B:	Negative clipper with two diodes
Option C:	Peak clampers
Option D:	Absolute value output circuit
Q19.	In Pulse generator frequency range is _____
Option A:	20 kHz
Option B:	30 kHz
Option C:	40 kHz
Option D:	120 kHz
Q20.	In op-amp the recovery time is reduced using?
Option A:	Diode is connected at the output of amplifier
Option B:	Load resistor
Option C:	Forward biased diode resistor

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Option D:	Discharge capacitor
Q21.	In the following which is not a part of operational amplifier block diagram?
Option A:	Differential amplifier
Option B:	Level translator
Option C:	Output driver
Option D:	Clamper
Q22.	When $g_m = 16\text{M}\Omega^{-1}$ , $R_E = 25\text{k}\Omega$ , find CMRR?
Option A:	0.64 db
Option B:	1.56 dB
Option C:	58 db
Option D:	60 dB
Q23.	In VCO voltage to frequency conversion factor is
Option A:	$K_v = \Delta V_c / \Delta f_o$
Option B:	$K_v = \Delta f_o / \Delta V_c$
Option C:	$K_v = \Delta f_o \times \Delta V_c$
Option D:	$K_v = 1 / (\Delta f_o \times \Delta V_c)$
Q24.	How many phase shift network contains is RC phase shift oscillators?
Option A:	1
Option B:	3
Option C:	2
Option D:	0
Q25.	For a Wien-bridge oscillator, which is incorrect _____
Option A:	Low distortion
Option B:	Good stability at the resonance frequency
Option C:	Based on frequency selection form of a Wheatstone bridge
Option D:	Difficult to tune

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Program: BE Information Technology

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: TEITC505 and Course Name: Open Source Technologies

Time: 1 hour

Max. Marks: 50

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

Q1.	Which of these is not amongst the Values of Open Source
Option A:	Freedom
Option B:	Transparency
Option C:	Interoperability
Option D:	Collaboration
Q2.	Which of the following command is used to create file in Linux?
Option A:	Touch,cat,nano
Option B:	cat,nano
Option C:	nano
Option D:	touch,nano
Q3.	Which of the following is not Linux based OS?
Option A:	Ubuntu
Option B:	Redhat
Option C:	CentOs
Option D:	BSD
Q4.	In Linux everything stored as a
Option A:	file
Option B:	directory

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Option C:	executables
Option D:	root
Q5.	Linux is developed under the license
Option A:	BSD
Option B:	GNU
Option C:	GPL
Option D:	GLPL
Q6.	List the Types of DNS Servers
Option A:	Root Server,Authoritative Server,Name Servers
Option B:	Authoritative Server
Option C:	Name Servers
Option D:	client server
Q7.	Of the following directories, which one is the most important to back upon a routine basis?
Option A:	/tmp
Option B:	/usr
Option C:	/root
Option D:	/etc
Q8.	which is Linux boot loader
Option A:	GRUB
Option B:	NTLDR,LILO
Option C:	LILLO
Option D:	NTLDR,LILO,GRUB
Q9.	Which of the following commands can be used to copy files across systems?
Option A:	ssh

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Option B:	telnet
Option C:	rsh
Option D:	ftp
Q10.	Which among the following is used to write small programs to control Linux functionalities ?
Option A:	Shell Commands
Option B:	Shell Script
Option C:	C
Option D:	Java
Q11.	What does the device file /dev/hdb6 represent?
Option A:	An extended partition on a SCSI disk drive
Option B:	A logical partition on a SCSI disk drive
Option C:	An extended partition on an IDE disk drive
Option D:	A primary partition on an IDE disk
Q12.	Which command will you use to see the available routes?
Option A:	show route
Option B:	route status
Option C:	netstat -r
Option D:	route status, show route
Q13.	Command used to count number of character in a file is
Option A:	grep
Option B:	Wc
Option C:	Count
Option D:	cut
Q14.	Which command is used to display all the files including hidden files in your

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	current and its subdirectories ?
Option A:	ls -aR
Option B:	ls -a
Option C:	ls -R
Option D:	ls -l
Q15.	Which of the following commands can be used to change default permissions for files and directories at the time of creation
Option A:	Chmod
Option B:	Chown
Option C:	Umask
Option D:	Chgrp
Q16.	CVS stands for
Option A:	Concurrent Version System
Option B:	Control Version System
Option C:	Concurrent Verification System
Option D:	Consequently Version Control
Q17.	Which of the following commands will allow the user to search contents of a file for a particular pattern
Option A:	touch
Option B:	grep
Option C:	find
Option D:	ls
Q18.	BASH shell stands for?
Option A:	Bourne-again Shell
Option B:	Basic Access Shell
Option C:	Basic to Advanced Shell

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Option D:	Big & Advanced Shell
Q19.	The command syntax to display the file 'sample.txt' one page at a time is
Option A:	man sample.txt>more
Option B:	cat sample.txt<more
Option C:	cat sample.txt more
Option D:	None of the above
Q20.	Which among the following interacts directly with system hardware?
Option A:	Shell
Option B:	Commands
Option C:	Kernel
Option D:	Applications
Q21.	Select wrong combination of the partitions:
Option A:	All 4 primary – no extended
Option B:	3 primary – 1 extended;
Option C:	4 primary – 1 extended;
Option D:	2 primary – 1 extended.
Q22.	Explain android activity life cycle?
Option A:	onCreate() -> onStart() -> onActivityCreated() -> onResume() -> onPause() -> onStop() -> onDestroy()
Option B:	OnCreate() -> onStart() -> onResume() -> onPause() -> onStop() -> onRestart() -> onDestroy()
Option C:	OnCreate() -> onStart() -> onPause() -> onResume() -> onStop() -> onDestroy() -> onResume()
Option D:	OnCreate() -> onStart() -> onResume() -> onStop() -> onDestroy()
Q23.	User's Primary Group id is listed in which file, at the time of creation of the user (On a standard Unix system)

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Option A:	/etc/passwd
Option B:	/etc/groups
Option C:	/etc/login
Option D:	/etc/profile
Q24.	What is Shell ?
Option A:	Command Interpreter, Interface between Kernel and Hardware, Interface between user and applications
Option B:	Only Interface between Kernel and Hardware
Option C:	only Interface between user and applications
Option D:	only Command Interpreter
Q25.	Android Inc was founded by Andy Rubin, Rich miner, Nick sears and Chris White in
Option A:	2005
Option B:	2008
Option C:	2003
Option D:	2002