

Entrance Exam for Lateral Entry - Electronics

Academic Year : 2020-2021

Department : Department of Electronics and communication Engineering

Max. Marks : 100 Marks

Time allowed : 90 mim

Subject Name: Electronics

* Required

Email address *

Your email

Name of the candidate *

Your answer

Registration Number *

Your answer

Mobile Number *

Your answer



The common emitter forward amplification factor β_{dc} is given by

1 point

- Collector current/Emitter current
- Collector current /Base current
- Emitter current/Base current
- Base current /Emitter current

If Barkhausen criterion is not fulfilled by an oscillator circuit, it will

1 point

- Stop Oscillating
- Produce damped wave continuously
- Become an amplifier
- Produce high frequency whistles

The conventional current in a PN junction diode flows

1 point

- From positive to negative
- From negative to positive
- In the direction opposite to the electron flow
- both a & b above

Junction breakdown of a PN junction occurs

1 point

- with forward bias
- with reverse bias
- because of manufacturing defect
- none of these



A transistor series voltage regulator is called emitter follower regulator because the emitter of the pass transistor follows the voltage 1 point

- output
- input
- base
- Collector

In a feedback series regulator circuit, the output voltage is regulated by controlling the 1 point

- magnitude of input voltage
- gain of the feedback transistor
- reference voltage
- voltage drop across the series pass transistor

The EBJ of a given transistor is forward biased and its CBJ reverse biased .If the base current is increased then 1 point

- collector current will decrease
- collector emitter voltage will increase
- Collector current will increase
- Vcc will increase



Which of the following PNPN device has two gates

1 point

- SCR
- DIAC
- TRIAC
- Transistor

The width of the depletion layer of the junction

1 point

- Decreases with light doping
- Increases with heavy doping
- Is independent of applied voltage
- Is increased under reverse bias

The emitter of a transistor is generally doped the heaviest because it

1 point

- has to dissipate maximum power
- has to supply the charge carriers
- is the first region of the transistor
- must possess low resistance

For proper working of a transistor in normal circuits

1 point

- EBJ is reversed biased, CBJ forward biased
- EBJ is forward biased, CBJ forward biased
- CBJ is reversed biased EBJ forward biased
- CBJ is reversed biased EBJ reverse biased



The depletion region of the PN junction is formed

1 point

- During the manufacturing process
- When forward bias is applied to it
- Under reverse bias
- When its temperature is reduced

A four layered diode is sometimes called

1 point

- UJT
- PNP diode
- DIAC
- Switch

In a BJT, largest current flow occurs

1 point

- in the emitter
- in the collector
- in the base
- through CB junction

In a transistor Hartley Oscillator

1 point

- Inductive feedback is used
- Untapped coil is used
- entire coil is the output circuit
- no capacitor is used



The digital system usually operate onsystem

1 point

- Binary
- Decimal
- Octal
- Hexadecimal

Which of the following acts like a diode and two resistors

1 point

- SCR
- TRIAC
- DIAC
- UJT

The main job of a voltage regulator is to provide a nearly.....output voltage

1 point

- sinusoidal
- constant
- smooth
- fluctuating



In a zener diode shunt voltage regulator, the diode regulates so long as it is kept in..... 1 point

- forward
- reverse
- loaded
- unloaded

In a JFET, drain current is maximum when V_{GS} is 1 point

- Zero
- Negative
- Positive
- Equal to V_p

Convert the binary number 10111 to its decimal equivalent. 1 point

- 21
- 12
- 23
- 31



An OR gate has 5 inputs. One input is high and the other three are low. The output is ... 1 point

- Low
- High
- Alternately high and low
- may be high or low depending on relative magnitude of inputs

In binary resistor DAC, which terminal of the op-amp is grounded? 1 point

- Negative terminal
- Positive terminal
- Both terminals
- None

A full adder can be made out of 1 point

- two half adders
- two half adders and a OR gate
- two half adders and a NOT gate
- three half adders



Minimum number of 2-input NAND gates required to implement the function $F = AB$ is

1 point

- 2
- 4
- 5
- 6

The octal equivalent of binary number 1101001.001001 is _____

1 point

- 624.12
- 157.13
- 151.11
- 145.21

D flipflop is used as

1 point

- differentiator
- divider circuit
- delay switch
- all of the above



Subtraction of 1100 - 0111

1 point

- 1001
- 1110
- 101
- 1010

Which of the logic family has least propagation delay

1 point

- RTL
- CMOS
- DTL
- IIL

The conversion time of 10 bit successive approximation A/D converter if input clock is 5 MHz

1 point

- 1 us
- 2 us
- 3 us
- 4us



Which ADC does not use clock signal?

1 point

- Flash ADC
- Counter comparator ADC
- Double ramp ADC
- Successive approximation ADC

The number of flipflops required for a 4 bit synchronous counter are

1 point

- 4
- 2
- 10
- 5
- Option 5

The expression $Y = \sum m(0, 1, 3, 4)$ is

1 point

- SOP
- POS
- Hybrid
- None of these



The hexadecimal number for the binary number 110000011010 is.

1 point

- 2AC
- 33A
- C1A
- 190

In the expression $AB + BC$, the total number of minterms will be

1 point

- 2
- 3
- 4
- 5

T flip flop is used as

1 point

- transfer data circuit
- toggle switch
- time delay switch
- none of these

the gray code of the binary number 1101 is _____

1 point

- 11001
- 1010
- 1100
- 1011



The gate gives high output, if the both the inputs are high.

1 point

- NAND gate
- AND gate
- NOR gate
- ExOR gate

Which of the following is non-saturating?

1 point

- TTL
- CMOS
- ECL
- Both 1 & 2

A Medium scale integration chip has

1 point

- 12 to 99 gates
- 100 to 9999 gates
- 10000 to 99999 gates
- more than 100000 gates

Noise immunity in analog communication is

1 point

- Very good
- Good
- Poor
- Moderate



What is the maximum modulating frequency allowed in commercial FM broadcastings? 1 point

- 40 KHz
- 75 KHz
- 15 KHz
- 120 KHz

Number of bits transmitted per second is called 1 point

- Bit rate
- Baud rate
- Redundancy
- Unit rate

CRC is 1 point

- Cyclic reduction check
- Cyclic redundancy check
- Cyclic random check
- Circle random check



Classification of Analog pulse modulation

1 point

- PCM and DM
- PAM and PTM
- PCM and ADM
- PAM and ADM

Companding means

1 point

- Compression of the signal at transmitter
- Suppression of the signal at receiver
- Compression of the signal at receiver
- Compression in transmitter & suppression in receiver

Deemphasis is done in

1 point

- Transmitter
- Receiver
- Channel
- Antenna

Delta modulation transmits only

1 point

- 2 bits per sample
- 1 bit per sample
- 3 bits per sample
- 4 bits per sample



Noise is added to a signal in a communication system

1 point

- At the receiving end
- At transmitting antenna
- In the channel
- During regeneration of the information

Guard bands are provided in FM signal to

1 point

- Prevent interference from adjacent channels
- To increase the noise
- To increase bandwidth
- None of the above

A distorted signal of frequency f_m is recovered from a sampled signal if the sampling frequency f_s is

1 point

- $f_s > 2f_m$
- $f_s < 2f_m$
- $f_s = 2f_m$
- $f_s \geq 2f_m$



Example of continuous wave analog modulation is

1 point

- PCM
- DM
- AM
- PAM

Maximum frequency deviation and the maximum bandwidth allowed for commercial FM broadcast is

1 point

- 80KHz, 160Khz
- 75KHz, 200Khz
- 60KHz, 170Khz
- 75KHz, 250Khz

Drawback of Delta modulation

1 point

- Quantization noise
- Granular noise
- Amplitude variation
- Quantization Error



The difference between the Instantaneous values of the input signal and quantized signal is called 1 point

- Quantization Pulse
- Quantization Error
- Uniform Quantization
- Non Uniform Quantization

Shannon Hartley theorem has the relationship between 1 point

- Channel capacity & Noise
- Noise & frequency
- Frequency and time period
- Cannel capacity, Bandwidth & noise

One of the best pulse modulation method is 1 point

- PAM
- PCM
- PWM
- PPM



One way communication is called

1 point

- Half duplex
- Full duplex
- Monocomm
- Simplex

Armstrong method is used for the generation of

1 point

- Direct FM
- Indirect FM
- SSB-SC
- DSB-SC

Ability of receiver to receive wanted signal and reject unwanted signal is called

1 point

- Selectivity
- Sensitivity
- Fidelity
- Signal to noise ratio



If the instruction MOV A,# 9C , ADD A #64H is executed, what will be the status of carry, Auxiliary and parity flags. 1 point

- CY = 0, AC = 0, P = 0
- CY = 1, AC = 1, P = 0
- CY = 1 AC = 1, P = 1
- CY = 0, AC = 1, P = 0

The instruction used by stack pointer during its decrement operation 1 point

- PUSH
- POP
- CALL
- All of the above

The 16 bit register used for holding the address of external and internal program memory is termed as_____ 1 point

- Stack pointer
- program counter
- Accumulator
- B register



The 8051 microcontroller comprises of ____

1 point

- CPU and RAM
- CPU, RAM, ROM
- RAM, ROM, I/O ports
- CPU, RAM, ROM, I/O ports, TIMERS

The addressing mode used to obtain the data value directly from the memory location specified in the operand

1 point

- Indexed addressing mode
- register addressing mode
- Relative addressing mode
- Direct addressing mode

The 8051 microcontroller uses _____ memory location for the register R0- R7, when the power is on.

1 point

- 00-0F
- 00-07
- 00-2F
- 00-7F



Parallel I/O port available in 8051 microcontroller

1 point

- 1
- 2
- 3
- 4

which operation is performed when SUBB A, R4 is executed.

1 point

- R4 + A
- R4 - A
- A + R4
- A - R4

The power reducing mode of 8051

1 point

- Idle mode and power down mode
- ISR and power down mode
- PCON and Idle mode
- None of these

Communication from microcontroller to peripherals is through

1 point

- registers
- I/O devices
- memory devices
- all of the above



Buffer register for serial transmitter and receiver in 8051 microcontroller is used as 1 point

- write only register for transmitter
- read only register for receiver
- both 1 and 2
- none of the above

Three special function register which supports serial communication in 8051 are 1 point

- TXD, RXD, PCON
- SBUF, SCON, PCON
- SCON, TXD, PCON
- SBUF, SCON, RXD

The file extension used for loading in microcontroller for processing any instruction is__ 1 point

- .hex
- .doc
- .c
- .exe



Complement the contents of the accumulator

1 point

- CLR A
- CPL A
- RLC A
- RRC A

The function of DAA instruction

1 point

- operates the result of two addition of BCD numbers and gives final result in decimal
- Complements the contents of accumulator
- Clears the contents of accumulator
- rotate left bit wise the contents of accumulator

In an 8 bit micro-controller , ALU is used for

1 point

- Addition
- Multiplication
- Subtraction
- all of the above



The register used to hold the source operand and store the result of arithmetic and logical operations done in ALU.

1 point

- Timer Register
- Accumulator
- Stack Pointer
- Special Function Register

Intel's 8255 chip is also known as

1 point

- UART
- USART
- PIC
- PPI

The number of I/O lines in 8051 microcontroller

1 point

- 22
- 32
- 37
- 43



Speed of MCS51-family is _____ MHz

1 point

- 10
- 12
- 30
- 40

Nearest point of Satellite from earth's surface is called

1 point

- Apogee
- Perigee
- Look angle
- Foot print

It is a special device that allows the transmitter & receiver to share a single antenna 1 point

- Duplexer
- Attenuator
- Oscillator
- Termination



It is based on the principle that R.F signal are reflected by conductive targets

1 point

- Attenuator
- Fiber optics
- Radar
- None of the above

This type of dispersion occur due to propagation delay differences between modes within a multimode fiber

1 point

- Material dispersion
- Waveguide dispersion
- Intermodal dispersion
- None of the above

The uplink and downlink frequency used for Satellite communication always have a minimum frequency difference of

1 point

- 1 GHZ
- 2 GHZ
- 3 GHZ
- 4 GHZ



A Radar Beacon has

1 point

- Omnidirectional antenna
- Bidirectional antenna
- Directional antenna
- None of the above

Randall and Boot have invented

1 point

- Multicavity klystron
- Reflex Klystron
- Magnetron
- TWT

Farthest point of Satellite from earth's surface is called

1 point

- Apogee
- Perigee
- Look angle
- Foot print

The dominant mode of rectangular waveguide is

1 point

- TE01
- TE10
- TE11
- TE21



The following microwave semiconductor diode is also called Transferred Electron Device (TED) 1 point

- IMPATT
- Gunn
- PIN
- Tunnel

Deflection of light is called 1 point

- Refraction
- Dispersion
- Diffraction
- Absorption

The direction of antenna beam is rapidly switched between two positions, this type of switching is called 1 point

- Conical
- Monopulse
- Sequential
- None of the above



" Light gathering ability" of a fiber is called

1 point

- Refractive Index
- Incident angle
- Critical angle
- Numerical Aperture

The formula for maximum unambiguous range(mur) is

1 point

- $PRT/11.2$
- $PRT/15.2$
- $PRT/10.2$
- $PRT/12.2$

Separating light into each of its component frequencies is called

1 point

- Refraction
- Dispersion
- Diffraction
- Absorption

Microwave frequency range from

1 point

- 1 GHz to 100 GHz
- 1 THZ to 100 THz
- 1 MHz to 100 MHz
- 1 KHz to 100 KHz



Active Satellites have

1 point

- Transmitting & Receiving antenna
- Low noise Amplifier
- Frequency Convertor
- All of the above

Making corrections to the position of the satellite in orbit is done with the following subsystem

1 point

- Communication channel
- Telemetry Tracking
- Altitude Control
- Power subsystem

A junction wherein all four ports are perfectly matched to the junction is called

1 point

- E-plane
- Magic Tee
- H-plane
- Tuner



It is a frequency that cause angles of incident and reflection to be perpendicular to the walls of waveguide

1 point

- Critical frequency
- Critical angle
- Cut off frequency
- Cut off angle

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Answer Key
Lateral Entry Examination for B.Tech ECE Session 2020-21

1	B	41	C	81	B
2	A	42	C	82	A
3	D	43	A	83	C
4	B	44	B	84	C
5	C	45	B	85	B
6	D	46	D	86	A
7	C	47	B	87	C
8	C	48	B	88	A
9	D	49	C	89	B
10	B	50	A	90	B
11	C	51	B	91	A
12	A	52	C	92	C
13	C	53	B	93	D
14	B	54	B	94	D
15	A	55	B	95	B
16	A	56	D	96	A
17	D	57	B	97	D
18	B	58	D	98	C
19	B	59	B	99	B
20	A	60	A	100	C
21	C	61	B		
22	B	62	B		
23	B	63	B		
24	B	64	D		
25	A	65	D		
26	C	66	B		
27	C	67	D		
28	C	68	D		
29	D	69	A		
30	B	70	B		
31	A	71	C		
32	A	72	B		
33	A	73	A		
34	C	74	B		
35	B	75	A		
36	B	76	D		
37	D	77	B		
38	B	78	D		
39	C	79	B		
40	A	80	B		

