BSNL Junior Telecom Officers-JTO 2002 Paper

Section – I : Technical

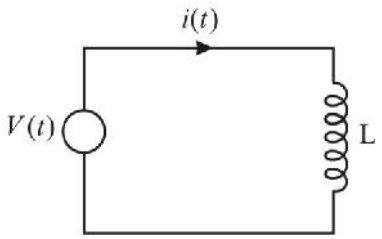
We have marked each question with a unique notation to understand its weightage of subject.
PE1 : Power Electronics
MI1 : Measurement Instrumentations
CS1 : Communication System
EMT1 : Electromagnetic Theory
MW1 : Microwave Engineering
EDC1 : Electronics Devices
AE1 : Analog Electronics
NT1 : Network theory
CT1 : Control System
MS1: Material Science
MP1: Microprocessor
DE1: Digital Electronics
CE1: Computer Engineering

EDC1

(1.) The threshold voltage of an n-channel MOSFET can be increased by
(a) Increasing the channel doping concentration
(b) Reducing the channel length
(c) Reducing gate oxide thickness
(d) Decreasing the channel doping concentration

NT1

(2.) In the circuit shown in figure it is desired to have a constant direct current *i(t)* through the ideal inductor L. The nature of the voltage source *v(t)* must be



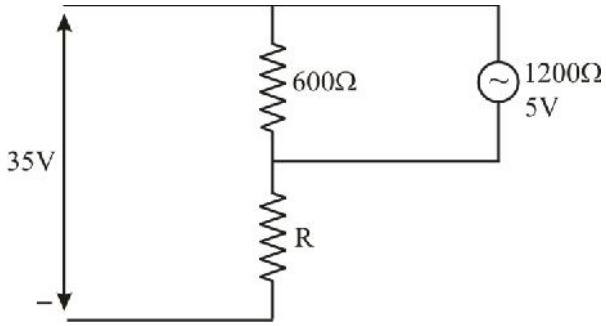
(a) Constant voltage
(b) Linearly increasing voltage
(c) An ideal impulse
(d) Exponential increasing voltage

AE1

(3.) CMOS has the following advantage over PMOS/NMOS?
(a) Simpler fabrication process
(b) Lower P_D
(c) Lower input capacitance
(d) Greater suitability for LSI

MI1

(4.) A 35 V d.c supply is connected across a combined resistance of 600 ohms and an unknown resistance of R ohms in series. A voltmeter having a resistance of 1.2kΩ is connected across 600 ohm resistor and reads 5V. The resistance R will be



(a) 120 ohms
(b) 500 ohms
(c) 1.7 K ohms
(d) 2.4 K ohms

EMT1

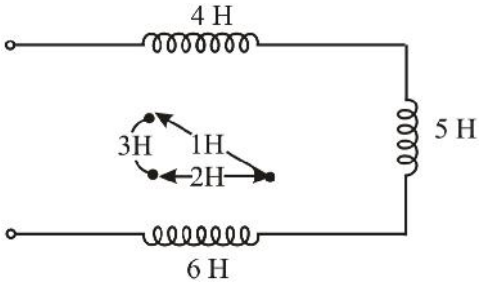
(5.) Two parallel wires separated by a distance are carrying a DC current I in the same direction. The magnetic field along a line running parallel to the wire and midway between them
(a) depends upon I
(b) zero
(c) depends upon d
(d) depends upon the permeability of the medium between the wires

EDC1

(6.) The MOSFET switch in its on-state may be considered equivalent to
(a) Resistor
(b) Inductor
(c) Capacitor
(d) Battery

NT1

(7.) The effective inductance of the circuit across the terminal AB in the figure shown below, is



(a) 9H
(b) 21H
(c) 11H
(d) 6H

EMT1

(8.) A microstrip line on alumina substrate (ϵ = 9) has a zero thickness strip of width, W = 3mm. Substrate thickness h = 0.5mm. Assuming TEM wave propagation and negligible fringing field, the characteristic impedance of the line will be approximately
(a) 10 ohm
(b) 21 ohm
(c) 26 ohm
(d) 50 ohm

CS1

(9.) When a route carries no subscriber dialed traffic, the internationally accepted worst grade of service is
(a) 1%
(b) 3%
(c) 10%
(d) 20%

EMT1

(10.) Maximum voltage is induced in a loop antenna if
(a) It is placed parallel to the incoming wave
(b) It is placed at right angles to the incoming wave
(c) It is placed at 45º to the incoming wave
(d) Its width is more than $\frac{a}{2}$

MW1

(11.) Rhombic antenna is a
(a) Non-resonant antenna
(b) Resonant antenna
(c) Directional high frequency antenna
(d) None of these

DE1

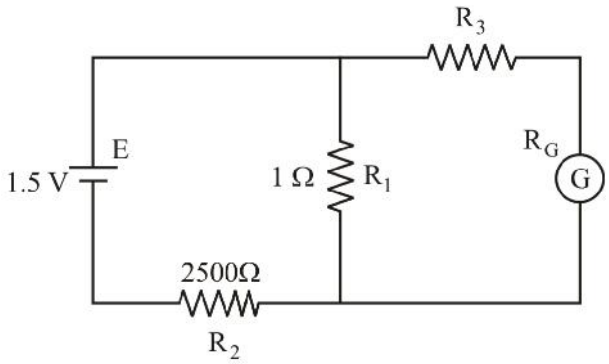
(12.) Dual slope integration type Analog-to-Digital converters provide
(a) Higher speeds compared to all other types of A/D converters
(b) Very god accuracy without putting extreme requirements on component stability
(c) Poor rejection of power supply hum
(d) Deter resolution compared to all other types of A/D converters for the same number of bits

AE1

(13.) A double tuned circuit amplifier provides
(a) High gain for passband frequencies
(b) More flat response for all frequencies
(c) More flat response for all passband frequencies
(d) Less harmonic distortion

MI1

(14.) A galvanometer is tested as shown in the figure, in the circuit where E = 1.5V, R_1 = 1.0 ohm, R_2 = 2500 ohm and R_3 is variable. With R_3 set at 450 ohm, the galvanometer deflections is 140 mm and with R_3 set at 950 ohm, the galvanometer deflection is 70 mm. The resistance of the galvanometer is



(a) 99 ohm
(b) 49 ohm
(c) 28 ohm
(d) 10 ohm

MI1

(15.) Precision measurement of resistances is generally carried out by

(a) Potentiometer method
(b) CRO method
(c) Voltmeter-ammeter method
(d) Bridge method

EMT1

(16.) The average power flow per unit area in a uniform plane wave in an electric field of maximum voltage E_0 and impedance Z_0 is

(a) $\frac{E_0^2}{2Z_0}$

(b) $\frac{E_0^2}{Z_0}$

(c) $\frac{E_0^2}{Z_0^2}$

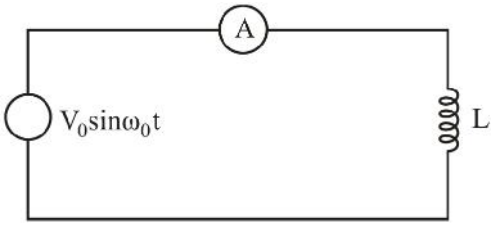
(d) I_0E_0

MI1

(17.) When a voltage $v_0 \sin w_0 t$ is applied to the pure inductor, the ammeter shown in the figure reads I_0. If the voltage applied is

$$-V_0 \sin \mu_0 t + 2V_0 \sin 2\mu_0 t$$
$$+3V_0 \sin 3\mu_0 t + 4V_0 \sin 4\mu_0 t$$

The ammeter reading would be



(a) 0
(b) $10I_0$
(c) $\sqrt{4^2+3^2+2^2+1^2}$
(d) $2I_0$

NT1

(18.) In a series RLC circuit, at the resonant frequency
(a) Current is minimum
(b) Voltage across C is maximum
(c) Impedance is maximum
(d) Current is maximum

EDC1

(19.) In a bipolar transistor at room temperature, if the emitter current is doubled the voltage across its base-emitter junction
(a) Doubles
(b) Halves
(c) Increases by about 20mV
(d) Decrease by about 20mV

EDC1

(20.) The diffusion potential across a p-n junction
(a) Decreases with increasing doping concentration
(b) Increases with decreasing band gap
(c) Does not depend on doping concentration
(d) Increases with increase in doping concentrations

MI1

(21.) A metal strain guage has factor of 2. Its nominal resistance is 120 ohms. It undergoes strain at 10^{-5}, the value of change of resistance in response to the strain is
(a) 240 ohms
(b) 2×10^5 ohms
(c) 2×10^{-5} ohms
(d) 2.4×10^{-3} ohms

MI1

(22.) In a LVDT, the two secondary voltages
(a) are independent of the core position
(b) vary unequally depending on the core position
(c) very equally depending on the core position
(d) are always in phase quadrature

AE1

(23.) An RC-coupled amplifier has an open loop gain of 100 and a upper cut off frequency of 100kHz. If negative feedback with a feedback factor of 0.02 is used, the upper cut off frequency will be
(a) 100kHz
(b) 33.3kHz
(c) 300kHz

(d) 1000kHz

AE1

(24.) If D_n represents the ratio of amplitudes of *n*th harmonics to the fundamental components of a signal, then distortion factor of the signal will be

(a) $\sqrt{D_1^2 + D_2^2 + D_3^2}$

(b) $\sqrt{D_1^3 + D_2^3 + D_4^3}$

(c) $\sqrt{D_2^2 + D_3^2 + D_3^2}$

(d) $\sqrt{D_2 + D_3 + D_4}$

MI1

(25.) Two meters X and Y required 40mA and 50mA respectively, to give full-scale reflection, then

(a) X is more sensitive

(b) Y is more sensitive

(c) Both are equally sensitive

(d) Sensitivity cannot be judged with the given information

MI1

(26.) In moving-coil instrument, the scale used is

(a) Non-linear

(b) Linear scale

(c) Square law scale

(d) Log scale

MI1

(27.) A 100mA meter has accuracy of ± 2 percent. Its accuracy while reading 100mA will be

(a) $\pm 0.2\%$

(b) $\pm 9\%$

(c) $\pm 4\%$

(d) $\pm 20\%$

MI1

(28.) In two wattmeter method of measuring 3-phase power, power factor is 0.5, then one of the wattmeter will read

(a) $\frac{W}{2}$

(b) Zero

(c) $\sqrt{2}W$

(d) $\frac{W}{\sqrt{3}}$

MI1

(29.) A CRO can display

(a) a.c signals

(b) d.c signals

(c) Both a.c and d.c signals

(d) None of these

PE1

(30.) In a single phase one-pulse circuit with RL load and a freewheeling diode, extinction angle β is less than π. For a firing angle α, the SCR and freewheeling diode would respectively, conductor for

(a) (–~), 0º

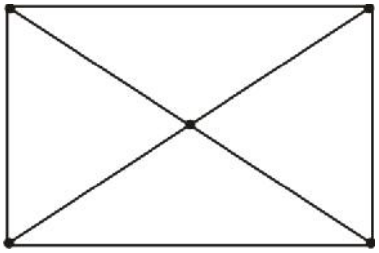
(b) (® –~), (® –)

(c) ~, (–~)

(d) (–~), ~

NT1

(31.) How many loop current in the cut-set analysis?



(a) 3

(b) 4

(c) 5

(d) None of these

AE1

(32.) In inverted operation of a transistor

(a) Both junctions are reverse biased

(b) Both junctions are forward biased

(c) Emitter junctions is reversed biased while collector junction is forward biased

(d) Emitter junctions is forward biased while collector junction is reversed biased

CT1

(33.) In a circuit the current transform

$$I(s)=\frac{6(s+10)}{s(s+12)}$$

The value of $i(t)$ or $t\to\infty$ is

(a) $\frac{1}{2}$

(b) 5

(c) 6

(d) ∞

PE1

(34.) In the three-phase converter α is in the range 0<α<90. When it operates in inverter the range of α is

(a) 0 < α < 90

(b) $90 < \alpha \leq 180$
(c) $180 < \alpha \leq 270$
(d) None of these

PE1

(35.) For series connected SCRs, dynamic equalizing circuit consists of
(a) Resistors R and capacitor C in series but with a diode D across C
(b) Series R and D circuit but with across R
(c) Series R and C but with D across R
(d) Series C and D circuit but with R across C

PE1

(36.) For an SCR, with L in series with SCR, the what type of protection is
(a) $\frac{dv}{dt}$ protection
(b) $\frac{di}{dt}$ protection
(c) Voltages protection
(d) None of these

EMT1

(37.) Maxwell's divergence equation for the magnetic field is given by
(a) $\nabla \times E = 0$
(b) $\nabla \cdot B = 0$
(c) $\nabla \times B = 0$
(d) None of these

NT1

(38.) If there are b branches and n nodes, the number of KCL equations required will be
(a) b
(b) n
(c) $(n-1)$
(d) $b-n+1$

MISCELLANEOUS

(39.) What is the state equation for the *n*th order of differential equation?
(a) n
(b) $(n+1)$
(c) $\frac{(n+1)}{2}$
(d) $(n-1)^2$

AE1

(40.) Two capacitors are connected in series. The first capacitor is of capacitance 40μF and breakdown voltage 60V and capacitance of second capacitor is 60μF and break down voltage is 40V. What condition is satisfied?

(a) First capacitor break down in first
(b) Second capacitor break down in first
(c) The charge equal to the both capacitor
(d) None of these
EMT1

(41.) In a vector field, given condition is, $\overline{A} \times \overline{B} = \overline{A} \times \overline{C}$ and $\overline{A}.\overline{B} = \overline{A}.\overline{C}$ the vector $\overline{C}$ is not null vector, which the following condition satisfies the equation

(a) $\vec{A} = 0$
(b) $\vec{B} = 0$
(c) $\vec{A} = \vec{B}$
(d) $\vec{B} = \vec{C}$
AE1

(42.) In a full-wave rectifier the supply frequency is 50Hz. What is the ripple frequency?

(a) 50Hz
(b) 100Hz
(c) 25Hz
(d) None
EDC1

(43.) The electron and hole concentrations in an intrinsic, semiconductor are n_i and p_i respectively. When doped p type material, these change to n and p respectively, then

(a) $n + p = n_i + p_i$
(b) $n + n_i = p + p_i$
(c) $np_i = n_i p$
(d) $np = n_i p_i$
PE1

(44.) A 3-phase, 50Hz, 6pole squirrel, case induction motor will run at a speed approximately

(a) 960 rpm
(b) 1000 rpm
(c) 1500 rpm
(d) 1600 rpm
EMT1

(45.) Who was the first to give the theory of electromagnetic induction?

(a) Faraday
(b) Ampere
(c) Maxwell
(d) None of these
NT1

(46.) Two capacitors of capacitance 1μF each. When they are connected in parallel, what is the resultant capacitance?

(a) 1μF
(b) 2μF

(c) 0.5μF
(d) None of these
NT1

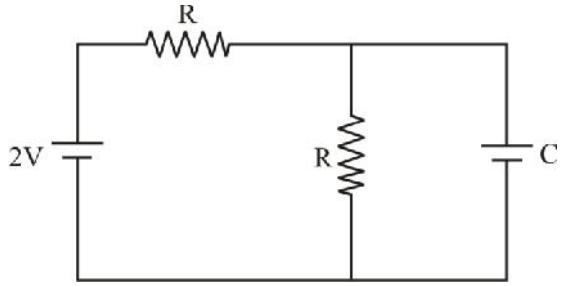
(47.) In a circuit current passing through the capacitor is 1 mA. The capacitance of the capacitor is 1μF. Find the voltage decay of the capacitor?
(a) 1V/S
(b) 1×10^3 V/S
(c) 2×10^3 V/S
(d) None of these

NT1

(48.) In a circuit, voltage in the inductor is 2V and inductance of the inductor is 1mH. What is the rate of the current decay?
(a) $\frac{2A}{S}$
(b) 1×10^3 A/S
(c) 2×10^3 A/S
(d) None of these
NT1

(49.) A capacitor of capacitance C_1 and distance between the plate is d_1. A second capacitor of capacitance C_2 and distance between the plate is d_2. When they are connected to series what is the equivalent capacitance?
(a) $\frac{d_1 d_2}{d_1 + d_2}$
(b) $\frac{d_1 + d_2}{d_1 d_2}$
(c) $C_1 + C_2$
(d) $\frac{C_1 C_2}{C_1 + C_2}$
NT1

(50.) The steady state voltage of the capacitor is



(a) 2V
(b) 0V
(c) 1V

(d) 0.5V

EMT1

(51.) A circular waveguide has internal diameter of 5cm. The cutoff frequency for TE_{11} mode will be

(a) 5MHz
(b) 35MHz
(c) 3.5GHz
(d) 35GHz

CS1

(52.) The bite rate of digital communication system is 34 Mbit/s. The modulation scheme is QPSK. The baud rate of the system is

(a) 68 Mbit/s
(b) 34 Mbit/s
(c) 17 Mbit/s
(d) 8.5 Mbit/s

DE1

(53.) Each cell of a static Random Access memory contains

(a) 6 MOS transistor
(b) 4 MOS transistors and 2 capacitors
(c) Two 2-input NORs and One X-NOR gate
(d) XOR gates and shift registers

CT1

(54.) Signal flow graph is used to obtain the

(a) Stability of the system
(b) Transfer function of the system
(c) Controllability of the system
(d) Observability of the system

CS1

(55.) A broadcast ratio receiver with IF = 455 kHz is tuned to 1500KHz. The image frequency will be

(a) 1045 kHz
(b) 1500 kHz
(c) 1955 kHz
(d) 2410 kHz

MW1

(56.) The usable band width of a microwave beacon transponder for $\frac{6}{4}$ GHz satellite communication is generally

(a) 360 MHz
(b) 40 MHz
(c) 36 MHz
(d) 1 MHz

MP1

(57.) A microprocessor with 12 address lines is capable of addressing

(a) 1024 locations

(b) 2028 locations
(c) 4096 locations
(d) 64 K locations
MP1

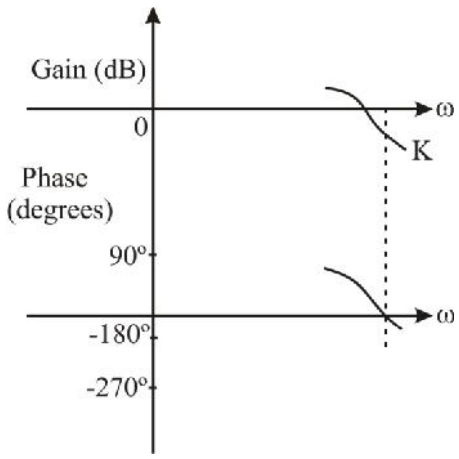
(58.) In an 8085 microprocessor system with memory mapped I/O
(a) I/O device has 16 bit address
(b) I/O devices are accessed using IN and OUT instructions
(c) There can be a maximum of 256 input devices and 256 output devices
(d) Arithmetic and logic operations can be directly performed with I/O
CS1

(59.) Companding is used
(a) To protect small signals in PCM from quantizing distortion
(b) To overcome quantized noise in PCM
(c) To overcome impulse noise
(d) None of the above
MW1

(60.) For a shot wave radio link between two stations via the ionosphere. The ratio of the maximum usable frequency to the critical frequency
(a) is always less than 1
(b) is always greater than 1
(c) may be ≤ 1dependign on the distance between the two stations
(d) does not depend on the distance between the two station
CT1

(61.) For a gain constant K, the phase-lead compensator
(a) Reduce the slope of the magnitude curve in the entire range of frequency domain
(b) Deceases the gain cross-over frequency
(c) Reduce the phase margin
(d) Reduce the resonance peak M_P
CT1

(62.) Bose plots of an open-loop transfer function of a control system are shown in the given figure:



The gain margin of the system is

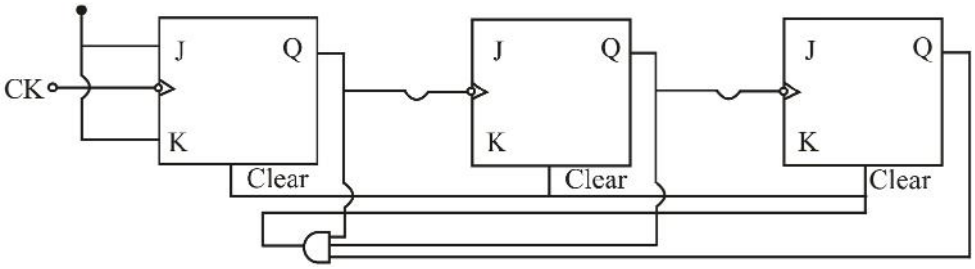
(a) K
(b) –K
(c) $\frac{1}{K}$
(d) $-\frac{1}{K}$

DE1

(63.) In standard TTL, the 'totem pole' stage refers to
(a) The multi-emitter input stage
(b) The phase-splitter
(c) The output buffer
(d) Open collector output

DE1

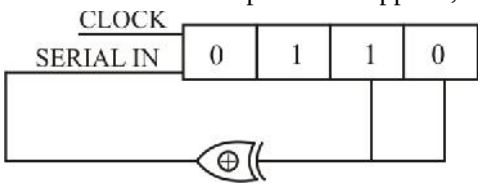
(64.) The block diagram shown below represents



(a) Modulo-3 ripple counter
(b) Modulo-5 ripple counter
(c) Modulo-7 ripple counter
(d) Modulo-7 synchronous counter

DE1

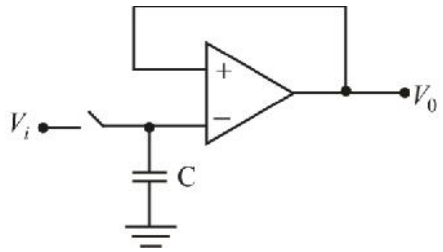
(65.) The initial contents of the 4 bit serial-in-parallel-out, right-shift. Shift Register shown in the figure is 0110. After three clock pulses are applied, the contents of the shift register will be



(a) 0000
(b) 0101
(c) 1010
(d) 1111

AE1

(66.) The OP Amp circuit given below is



(a) An integrator
(b) A voltage follower
(c) Sample and hold circuit
(d) An inverter

CS1

(67.) All the output pulses are at full transmitter power for a strong signal in all of the following except
(a) PWM
(b) PAM
(c) PFM
(d) PCM

CS1

(68.) The AM broadcast band (medium wave band) extends from
(a) 200 kHz to 1000 kHz
(b) 500 kHz to 1600 kHz
(c) 3 MHz to 30 MHz
(d) 30 MHz to 300 MHz

CS1

(69.) The bandwidth needed for transmitting 4 kHz signal using PCM with 128 quantizing level is
(a) 4kHz
(b) 16kHz
(c) 28kHz
(d) 64kHz

CT1

(70.) For the system having characteristic equation

$1+\frac{k}{s(s+1)(s+2)}=0$, the centroid of the asymptotes in root locus is given by,

(a) 0
(b) –1
(c) 2
(d) –2

CT1

(71.) For the characteristic equation $s^4+5s^3+5s^2+4s+k=0$, the system is stable if k lies in the range

(a) $\frac{84}{25}>k>0$

(b) $\frac{84}{25}<k<4$

(c) $3 > k > 1$

(d) $4 > k > 3$

CT1

(72.) A system has characteristic equation as $s^2 + 2s + 8 = 0$. The damping ratio and the natural frequency of oscillation of the system respectively are

(a) $2\sqrt{2}$, 0.5

(b) $0.52, \sqrt{2}$

(c) 0.353, $2\sqrt{2}$

(d) 2, 0.353

EDC1

(73.) The input resistance of MOSFET

(a) is very high as compare to that of a bipolar transistor

(b) is low as compared to that of a bipolar transistor

(c) is of the same order as in a bipolar transistor

(d) none of these

PE1

(74.) A circuit in which the output voltage remains constant irrespective of the value of load resistance, uses

(a) Silicon diode

(b) Zener diode

(c) SCR

(d) None of above

CS1

(75.) The Quadrature Amplitude Modulation is a combination of

(a) ASK and PSK

(b) ASK and FSK

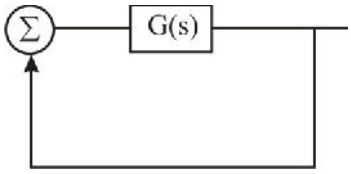
(c) PSK and FSK

(d) None of these

CT1

(76.) Consider a system shown in the given figure with $G(s) = \dfrac{k(s+1)}{s^3 + as^2 + 2s + 1}$.

What value of '*k*' and '*a*' should be chosen so that the system oscillates at 2 rad/sec.



(a) $k = 2$, $a = 1$

(b) $k = 2$, $a = 0.75$

(c) $k = 4$, $a = 1$

(d) $k = 4$, $a = 0.75$

NT1

(77.) In a differential amplifier, V_1 and V_2 is input voltage. Common mode rejection ratio is 1000. Which equation represent the outputs of the amplifier?

(a) $0.1\frac{(V_1+V_2)}{2}+100\frac{(V_1-V_2)}{2}$

(b) $100\frac{(V_1+V_2)}{2}+0.1\frac{(V_1-V_2)}{2}$

(c) $0.1\frac{(V_1+V_2)}{2}+10\frac{(V_1-V_2)}{2}$

(d) None

DE1

(78.) In a A/D converter input voltage is ±5V. In a 10 bit converter, what is the error voltage?

(a) 10mV

(b) 20mV

(c) 15mV

(d) None

NT1

(79.) A series RLC circuit is over damped when

(a) $\frac{R^2}{4L^2}>\frac{1}{LC}$

(b) $\frac{R^2}{4L^2}=\frac{1}{LC}$

(c) $\frac{R^2}{4L^2}<\frac{1}{LC}$

(d) R = initially

CS1

(80.) For signal amplitude modulated to a depth of 100% by a sinusoidal signal, power is

(a) Same as the power of unmodualted carrier

(b) Twice as the power of unmodulated carrier

(c) $\frac{3}{2}$ times the power of unmodulated carrier

(d) $\frac{2}{3}$ times the power of unmodulated carrier

CS1

(81.) Frequency shift keying is used mostly in

(a) Radio transmission

(b) Telegraphy

(c) Telephony

(d) None of these

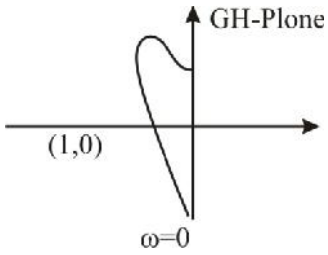
EDC1

(82.) An n-channel JFET, having a pinch-off voltage (V_p) of –5V shows a transconductance (g_m) of 1mA A/V. When the applied gate-to-source voltage (V_{GS}) is –3V, its maximum transconductance (in mA/V) is

(a) 1.5
(b) 2.0
(c) 2.5
(d) 3.0

CT1

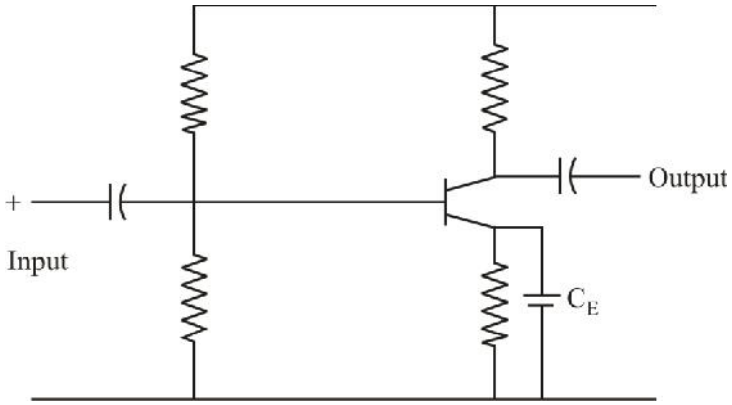
(83.) The polar plot of a type –1, 3-pole open-loop system is shown in the figure. The closed loop system is



(a) Always stable
(b) Marginally stable
(c) Unstable with one pole on the right half splane
(d) Unstable with two poles on the right half splane

AE1

(84.) In a single state transistor amplifier circuit shown in the figure, the capacitance C_E is removed. Then the as small signal mid band voltage gain of amplifier



(a) Increases
(b) Decreases
(c) Remain's unaffected
(d) Drops to zero

NT1

(85.) Two-port network are connected in cascade. The combination is to be represented as a single two port network. The parameters of the network are obtained by multiplying the individual

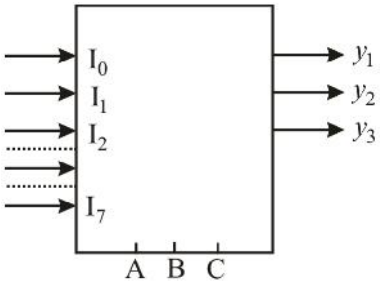
(a) Z-parameters matrix
(b) *h*-parameter matrix

(c) Y-parameters matrix
(d) ABCD parameter matrix
CS1

(86.) The Fourier transform of a real valued time signal has
(a) Odd symmetry
(b) Even symmetry
(c) Conjugate symmetry
(d) No symmetry
MW1

(87.) 1 km long microwave link uses two antennas each having 30 dB gain. If the power transmitted by one antenna is 1W at 3GHz, the power received by the other antenna is
(a) 98.6 μW
(b) 76.8 μW
(c) 63.4 μW
(d) 55.2 μW
DE1

(88.) In a 3 bit-MUX output y_1 is in the figure is



(a) $I_1 + I_2 + I_3$
(b) $I_2 + I_5 + I_6$
(c) $I_2 + I_4 + I_5$
(d) $I_1 + I_3 + I_5 + I_7$
CT1

(89.) A system with an input *x(t)* and an output *y(t)* is described by the relation : *y(t) = tx(t)*
This system is
(a) Linear and time-invariant
(b) Linear and time varying
(c) Non-linear and time-invariant
(d) Non-linear and time-varying
MP1

(90.) The following sequence of instructions are executed by an 8085 microprocessor:

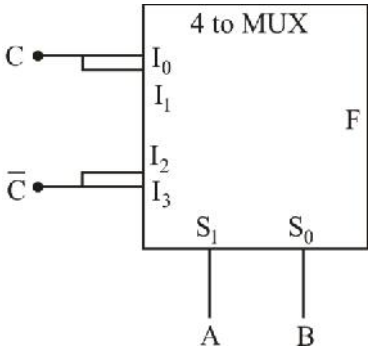
1000	LXI	SP,	27FF
1003	CALL		1006
1006	POPH		

The contents of the stack pointer (SP) and the HL, register pair on completion of execution of these instructions are

(a) SP = 27 FF, HL = 1003
(b) SP = 27 FD, HL = 1003
(c) SP = 27 FF, HL = 1006
(d) SP = 27 FD, HL = 1006

DE1

(91.) The logic realized by the circuit shown in the figure is



(a) F = A.C
(b) F = A ⊕ C
(c) F = B.C
(d) F = B ⊕ C

EMT1

(92.) A rectangular waveguide a = 5 cm b = 3.75 cm and the frequency is 10 GHz, the wave length is 7cm. Which of the following is mode of operation of wave guide?

(a) TE_{10}
(b) TE_{11}
(c) TM_{01}
(d) $TE_{2.0}$

EMT1

(93.) A parabolic reflector is designed to have a directivity of 30dB at 300 MHz. If the aperture of efficiency is 55%, then the diameter of reflector is

(a) 2m
(b) 4m
(c) 8m
(d) None of these

MP1

(94.) The following program is run on an 8085 microprocessor:

Memory Address in Hex	**Instruction**
2000	LXISP,1000
2003	Push H
2004	Push D
2005	Call 2050
2008	POP H
2009	HLT

At the completion of execution of the program, the program counter of the 8085 contains … and the stack pointer contains

(a) 2050, OFFC
(b) 2020, OCCF
(c) 2000, CCFO
(d) 2020, OFFC

AE1

(95.) In the current-shunt feedback

(a) High input and output impedance
(b) High input and low output
(c) Low input and high output
(d) Low input and low output

DE1

(96.) The data bus width of a 4×1024 bits is

(a) 10
(b) 11
(c) 12
(d) 13

EMT1

(97.) Given that $\vec{E}_x = E_x \sin(\mu t + ¤)$ and $\vec{E}_y = E_y \sin(\mu t + ¤)$. These are which types of polarization?

(a) Straight line
(b) Parabolic
(c) Left circulation
(d) Right circulation

EMT1

(98.) Given the electric field in electromagnetic wave is

$E = 10e^{(6x+8y)}a_x$

What is the wave speed?

(a) 10^7 m/s
(b) 10^8 m/s
(c) 10^9 m/s
(d) 10^{10}/ms

DE1

(99.) How many J-K flip-flop is required in 5-modulo synchronous counter?

(a) 4
(b) 5
(c) 3
(d) 2

MP1

(100.) What is machine cycle in SIM instruction?

(a) 1
(b) 2

(c) 3
(d) 4

Section-II : General Study

(101.) Which of the following is in order of the time of introduction for large scale communication.
1. Fibre optics
2. Under ground cables
3. Satellite communication
4. Total wireless loop

(a) 1, 2, 3, 4
(b) 1, 3, 2, 4
(c) 2, 1, 3, 4
(d) 2, 3, 1, 4

(102.) Which of the following will not match for environmental friendly Automobile?
(a) MPFI
(b) Turbo Charging
(c) Catalytic Converters
(d) Electric Ignition

(103.) Who directed the movie 'Mansoon wedding'?
(a) Mira Nair
(b) Shekhar Kapoor
(c) Shekhar Suman
(d) Deepa Metha

(104.) Which of the following can be transferred to any human body?
(a) 0 –ve
(b) A –ve
(c) AB +ve
(d) None of these

(105.) Jonas Sark discovered
(a) Viagra
(b) Silicon devices
(c) Wet photography
(d) Polio vaccine

(106.) Author of "Wings of Fire" is
(a) C.N. Rao
(b) A.P.J Abdul Kalam
(c) K.R. Narayan

(107.) Author of future shock, Third wave is
(a) Norman Mailer
(b) Bod Morris
(c) Aldug Hacksley
(d) Arvin Toffler

(108.) Which gas is greenhouse gas?
(a) Oxygen
(b) Carbon dioxide
(c) Nitric acid
(d) Nitrogen oxide

(109.) "Technology Next" is the slogan of which of the following company?
(a) Videocon
(b) Hewlett factory
(c) Compaq
(d) Philips

(110.) Which is not clean gas?
(a) L.S.D
(b) C.N.G
(c) L.P.G
(d) H.S.P

(111.) Suffix dot in suggests
(a) Inbox
(b) India
(c) Internet
(d) Infotech

(112.) Intermediate missile testing is done at
(a) Bangalore
(b) Sriharikota
(c) On sea
(d) Chandipur

(113.) Convergence bill refers to
(a) Electronic media
(b) Print media, press, electronic items
(c) I.T., Tele communication
(d) All of the above

(114.) Who is the chairperson of United Nations Human Rights commission?
(a) Sukoto ogada
(b) Megavati Sukharnoputri
(c) P.N. Bhagavait
(d) Mary Robhson

(115.) What is the percentage of thermal electricity produced in India
(a) 40
(b) 50
(c) 72
(d) 80

(116.) Which American company has produced the insect resistance cotton that successfully test fired in India
(a) General cotton
(b) Monsanto
(c) Greentek
(d) American Agro

(117.) In eye donation which part of the eye is transplanted?
(a) Retina
(b) Cornea
(c) Eye ball
(d) Iris

(118.) Economic liberalisation in India started with
(a) Removing the procedure of direct investment of foreign companies
(b) Cutting the fares
(c) By converting the value of rupee
(d) Removed of ban of listed goods

(119.) The theme of world development report 2001 is
(a) Attacking poverty
(b) Full employment
(c) From plan to market
(d) Knowledge for development

(120.) Which committee has recommended the financial sector reforms?
(a) Abid Hussain Committee
(b) Narasimhan Committee
(c) Chelliah Committee
(d) Sarkaria Committee

ANSWER KEY

1	2	3	4	5	6	7	8	9	10
a	c	b	d	b	c	c	b	b	a
11	12	13	14	15	16	17	18	19	20
c	b	c	b	d	a	d	d	c	d
21	22	23	24	25	26	27	28	29	30
d	b	c	c	a	b	d	b	c	a
31	32	33	34	35	36	37	38	39	40
b	c	b	b	c	b	b	d	b	c
41	42	43	44	45	46	47	48	49	50

d	c	d	b	a	b	b	c	d	c
51	52	53	54	55	56	57	58	59	60
c	c	a	b	d	c	c	d	a	b
61	62	63	64	65	66	67	68	69	70
a	c	c	c	c	c	b	b	c	b
71	72	73	74	75	76	77	78	79	80
a	c	a	b	a	b	a	a	a	c
81	82	83	84	85	86	87	88	89	90
b	c	a	b	d	c	c	d	b	c
91	92	93	94	95	96	97	98	99	100
b	d	d	d	c	c	a	c	c	a
101	102	103	104	105	106	107	108	109	110
c	a	a	d	d	b	d	b	c	c
111	112	113	114	115	116	117	118	119	120
b	b	d	c	d	b	b	b	a	b