BSNL Placement Papers 2008

1. For a parallel plate capacitor which is being charged out of the following the incorrect statement is -
a). Energy stored in the capacitor does not enter it through the connecting wire through the space around the wires and plates of capacitor.
b.) Rate at which energy flows into this volume is equal to the integration of the poynting vector over the boundary of the volume between the plates.
c.) The poynting vector points everywhere radially outward of the volume between plates.
d.) The poynting vector points everywhere radially into the volume between the plates.
2. The presence of alkali oxides in alumino silicate ceramics is likely to result in dielectric breakdown due to -
a.)Polarization
b.)Conductivity
c.)Structural homogeneties
d) Ionization
3. Which of the following will serve as a donor impurity in silicon -
a.)Boron
b) Indium
c) Germanium
d) Antimony
4. Electrical contact materials used in switches, brushes and relays must possess -
a)High thermal conductivity and high melting point
b) Low thermal conductivity and low melting point
c) High thermal conductivity and low melting point.
d) Low thermal conductivity and high melting point.
5. The Maximum spectral response of the germanium and silicon is in the -
a) infrared region
b) ultraviolet region
c) visible region
d) x-ray region
6. For an insulating material, dielectric strength and dielectric loss should be respectively -
a) high and high
b) low and high
c.) high and low
d.) low and low
7. In a distortion factor meter, the filter at the front end is used to suppress -
a.) odd harmonics
b.) even harmonics
c.) fundamental component
d.) dc component
8. The coefficient of coupling between two air core coils depends on -
a). mutual inductance between two coils only
b). self inductances of the two coils only

c). mutual inductance and self inductances of the two coils
d.) none
9. Modern capacitors which have high capacitance in small size use a dielectric of -
a.) paper
b.) rubber
c.) ceramic
d.) Mylar
10. In any atom the potential energy of an orbiting electron is -
a.) always positive
b.) always negative
c.) sometime positive, sometime negative
d.) numerically less than its kinetic energy
11. A DE MOSFET differs from a JFET in the sense that it has no -
a.) channel
b.) gate
c.) P-N junctions
d.) substrate
12. The advantage of a semiconductor strain gauge over the normal strain gauge is that
a.) it is more sensitive
b.) it is more linear
c.) it is less temperature dependent
d.) it,s cost is low
13. Barrier potential in a P-N junction is caused by -
a.) thermally generated electrons and holes
b.) diffusion of majority carriers across the junction
c.) migration of minority carriers across the junction
d.) flow of drift current
14. When an NPN transistor is properly biased then most of the electrons from the emitter -
a.) recombine with holes in the base
b.) recombine in the emitter itself
c.) pass through the base to the collector
d.) are stopped by the junction barrier
15. The value of r when a transistor is biased to cut off is -
a.) 0.5
b.) 0
c.) 1.0
d.) 0.8
16. A UJT can -
a.) be triggered by any one of it,s three terminals
b.) not be triggered
c.) be triggered by two of its three terminal only
d.) be triggered by all of its terminals only
17. An SCR can only be turned off via it,s -
a.) cathode
b.) anode
c.) gates
d) none

18. Gold is often diffused into silicon DN junction devices to -
a.) increase the recombination rate
b.) reduce the recombination rate
c.) make silicon a direct gap semiconductor
d.) make silicon semi-metal
19. With n nodes and b branches a network will have -
a.) (b + n) links
b.) b - n + 1 links
c.) b - n - 1 links
d.) b + n + 1 links
20. When a network has 10 nodes and 17 branches in all then the number of node pair voltages would be -
a.) 7
b.) 9
c.) 10
d.) 45
21. A two port network having a 6 dB loss will give -
a.) an output power which is one - quarter of the input power
b.) an output power which is one - half of the input power
c.) an output voltage which is 0.707 of the input voltage
d.) an output power which is 0.707 of the input power
22. While transporting a sensitive galvanometer -
a.) the terminals are kept shorted
b.) critical damping resistance is connected across the terminals
c.) the terminals are kept open circuited
d.) it does not matter as to what is connected across the terminals
23. A T type attenuator is designed for an attenuation of 40 dB and terminating resistance of 75 ohms. Which of the following values represent full series and R1 and shunt arm R2 ?
1. R1 = 147W 2. R1 = 153W
3. R2 = 1.5W 4. R2 = 3750W
a..) 1 and 3
b.). 1 and 4
c.). 2 and 3
d..) 2 and 4
24. For a transmission line, the characteristic impedance with inductance 0.294mH/m and capacitance 60pF/m is -
a..) 49w
b.). 60w
c..) 70w
d..) 140w
25. When the graph of a network has six branches with three tree branches then the minimum number of equations required for the solution of the network is -
a..) 2
b..) 3
c..) 4
d..) 5
26. Consider the following statement for a 2-port network

1. Z11 = Z22 2. h12 = h21
3. Y12 = -Y21 4. BC - AD = -1
then the network is reciprocal if and only if -
a..) 1 and 2 are correct
b.) 2 and 3 are correct
c.) 3 and 4 are correct
d.). 4 alone is correct
27. As a network contains only independent current sources and resistors then if the values of all resistors are doubled then the values of the node voltages are -
a.) will become half
b.) will remain uncha
c.). will become double
d.). cannot be determined unless the circuit configuration and the values of the resistors are known
28. The energy of electric field due to a spherical charge distribution of radius r and uniform charge density in vacuum is-
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29. Maxwell,s divergence equation for the magnetic field is given b

30. When a short grounded vertical antenna has a length L which is 0.05 l at frequency f and if it,s radiation resistances at f is R Ohms, then it,s radiation resistance at a frequency 2f will be -
a). R/2 ohms
b). R ohms
c). 2R ohms
d). 4R ohms
31. In a cylindrical cavity resonator, the two modes which are degenerate would include
a.) TE111 and TM111
b). TE011 and TM011
c). TE022 and TM111
d). TE111 and TM011
32. When an antenna of input resistance 73 ohm is connected to a 50-ohm line and if the losses are ignored then it,s efficiency will be nearly
a). 0.19
b). 0.81
c). 0.97
d). 1.19
33. If an isolated conducting sphere in air has radius = 1/ 4pqe0 it capacitance will be
a). Zero
b). IF
c). 4pF
d). OF
34. When a dominant mode wave guide not terminated in it,s characteristic impedance is excited with a 10 GHz signal then if ,d, is the distance between two successive minima of the standing wave in the guide then

a). d = 1.5 cm
b). d is less then 1.5 cm
c). d is greater than 1.5 cm
d). d = 3cm
35. When a dipole antenna of l/8 length has an equivalent total loss resistance of 1.5 W then the efficiency of the antenna is
a). 0.89159 %
b). 8.9159 %
c). 89.159 %
d). 891.59 %
36. In commercial FM broadcasting, the maximum frequency deviation is normally
a). 5 KHz
b). 15 KHz
c). 75 KHz
d). 200 KHz
37. Weins bridge is used for measurement of frequency in the applied voltage waveform is measurement of frequency in the applied voltage waveform is -
a). sinusoidal
b). square
c). rectangular
d). triangular
38. Strain gauge is -
a). not a transducer
b). an active transducer
c). not an electronic instrument
d). none
39. A high Q coil has -
a). large band width
b). high losses
c). low losses
d). flat response
40. In the case of an instrument reading of 8.3V with a 0 to 150 voltmeter having a guaranteed accuracy of 1% full scale reading, the percentage limiting error is -
a). 1.810%
b). 0.181%
c). 18.10%
d). 0.0018%
41. The ,h, parameter equivalent circuit of a junction transistor is valid for -
a). High frequency, large signal operation
b.) High frequency, small signal operation
c.) Low frequency, small signal operation
d). Low frequency, large signal operation
42. A system is causal if the output of any time depends only on -
a.) Values of input in the past and in the future
b). Values of input at that time and in the past
c). Values of input at that time and in the future
d). None

43. A iron cored choke is a -
a). Linear and active device
b). Non linear and passive device
c). Active device only
d). Linear device only
44. Poynting vector wattmeter uses -
a). Seebeck effect
b). Ferranti effect
c). Induction effect
d). Hall effect
45. Which one of the following is not a transducer in the true sense ?
a). Thermocouple
b). Piezoelectric pick - up
c). Photo voltaic cell
d). LCD
46. The term used to denote a static device that converts ac to dc, dc to ac, dc to dc or ac to ac is -
a). Converter system
b). Inverter
c). Chopper
d). Thyristor
47. It is an unidirectional device that blocks the current flow from cathode to anode -
a). SCR
b). PCR
c). VCR
d). DCR
48. An ideal constant current source is connected in series with an ideal constant voltage source. Considering together the combination will be a -
a). constant voltage source
b). constant current source
c). constant voltage and a constant current source or a constant power source
d). resistance
49. Anode current in an thyristor is made up of -
a). electrons only
b). electrons or holes
c). electrons and holes
d). holes only
50. For a pulse transformer, the material used for its core and the possible turn ratio from primary to secondary are respectively -
a). ferrite : 20 : 1
b). laminated iron : 1 : 1
c). ferrite : 1 : 1
d). powdered iron : 1 : 1
51. A converter which can operate in both 3 pulse and 6 pulse modes is a -
a.) 1 phase full converter
b). 3 phase half wave converter
c). 3 phase semi converter
d). 3 phase full converter

52. A single phase CSI has capacitor C as the load. For a constant source current, the voltage across the capacitor is -
a.) square wave
b.) triangular wave
c)step function
d.) pulsed wave
53. A single phase full wave midpoint thyristor converter uses a 230/200V transformer with centre tap on the secondary side. The P.I.V per thyristor is -
a). 100V
b). 141.4V
c). 200V
d). 282.8V
54. In dc choppers for chopping period T, the output voltage can be controlled by FM by varying -
a). T keeping Ton constant
b). Ton keeping T constant
c). Toff keeping T constant
d.) None of the above
55. From the hot metal surface electrons escape because
a). of change of state from metal to gas due to heat.
b). of change of stats from gas to metal.
c). the energy supplied is greater than the work function .
d). the energy is greater than Fermi level.
56. The most common device used for detection in radio receivers is -
a). amplifier
b). triode
c). diode
d). transistor
57. In a full wave rectifier the negative point in a circuit is
a). Either cathode
b). Either anode
c). The central tap on the high voltage secondary
d). Either plate
58. Negative feedback amplifier has a signal corrupted by noise as its input. The amplifier will-
a). Amplify the noise as much as the signal
b). Reduce the noise
c). Increase the noise
d). Not effect the noise
59. Match the given feedback circuit with it,s proper nomenclatures

a). Current series feedback
b). Current shunt feedback
c). Voltage series feedback
d). Voltage shunt feedback
60. Class A amplifier is used when
a). No phase inversion is required
b). Highest voltage gain is required
c). dc voltages are to be amplified

d). Minimum distortion is desired
61. Identify the correct match for the given transistor

a). Enhancement type P channel MOSFET
b). Depletion type N channel MOSFET
c). Enhancement type N channel MOSFET
d). Depletion type P channel MOSFET
62. In case a signal band limited to fm is sampled at a rate less than 2fm, the constructed signal will be
a). Distortionless
b). Small in amplitude
c). Having higher frequencies suppressed
d). Distorted
63. Quad 2 input AND gates IC No is -
a). 7411
b). 7404
c). 7400
d). 7408
64. Registers in which data is entered or taken out in serial form are referred as -
a). left shift register
b). right shift register
c). shift registers
d). none of the above
65. The expression can be simplified to

b.) AB + BC + CA

66. An ideal power supply consist of -
a) . Very small output resistance
b) . Zero internal resistance
c) . Very large input resistance
d) . Very large output resistance
67. The linearity error for a digital input is indicated by -

68. Register and counters are similar in the sense that they both -
a). count pulses
b). store binary operation
c). shift registers
d). made from an array of flip flops and gates integrated on a single chip
69. In the 8421 BCD code the decimal number 125 is written as -
a). 1111101
b). 0001 0010 0101
c). 7D

d). None of the above
70. In D/A converter, the resolution required is 50mv and the total maximum input is 10v. The number of bits required is -
a). 7
b). 8
c). 9
d). 200
71. On differentiation unit impulse function results in --
a). Unit parabolic function.
b). Unit triplet.
c). Unit doublet.
d). Unit ramp function.
72. Read the following;
i. Routh Hermitz`s criterion is in time domain.
ii. Root locus plot is in time domain.
iii. Bode plot is in frequency domain.
iv. Nyquist criterion is in frequency domain.
a). 2, 3, and 4 are correct
b). 1, 2 and 3 are correct
c). 3 and 4 are correct
d). All four are correct.
73. The maximum phase shift that can be provided by a lead compensator with transfer function.

a). 150
b). 450
c). 300
d). 600
74. The correct sequence of steps required to improve system stability is -
a). Insert derivative action, use negative feedback, reduce gain.
b). Reduce gain, use negative feedback, insert derivative action.
c). Reduce gain, insert derivative action, use negative feedback.
d). Use negative feedback, reduce gain, insert derivative action.
75. Identity slope change at w = 10 of the magnitude v/s frequency characteristic of a unity feedback system with the following open-loop transfer function -

a). -40dB/dec to -20dB/dec
b). 40dB/dec to 20dB/dec
c). -20dB/dec to -40dB/dec
d). 40dB/dec to -20dB/dec
76. In the feedback control system the loop transfer function is given by -

Number of asymptotes of its root loci is
a). 1
b). 2
c). 3
d). 4
77. In a closed - loop transfer function

the imaginary axis intercepts of the root loci will be -

78. Considering the following statement :
In a magic tee
1. the collinear arms are isolated from each other
2. one of the collinear is isolated from the E-arm
3. one of the collinear arm is isolated from the H-arm
4. E-arm and H-arm are isolated from each other.
Of these statements
a) 1 and 2 are correct
b). 1 and 3 are correct
c). 1 and 4 are correct
d). 2 and 3 are correct
79. In 1965 first geostationary satellite was launched called -
a). ANIK
b). EARLY BIRD (Intel sat -1)
c). WESTAR
d). MOLNIYA
80. --- watt of power is received from sun per m2 surface area of a geosynchronous satellite
a). 100
b). 500
c). 2000
d). 1000
81. The ripple factor in an LC filter
a). Increases with the load current
b). Increases with the load resistance
c). Remains constant with the load current
d). Has the lowest value
82. In different parts of the country identical telephone numbers are distinguished by their -
a). Language digits
b). Access digits
c). Area codes
d). Central office codes
83. Amplitude modulation is used for broadcasting because
a). it is move noise immune than other modulation systems
b). compared with other systems it requires less transmitting power
c). its use avoids receiver complexity
d). no other modulation system can provide the necessary bandwidth for high fidelity
84. The amplifiers following the modulated stage in a low level modulation AM system be
a). linear amplifier
b). harmonic generators
c). class C power amplifiers
d). class B untuned amplifiers

85. In a radar system maximum unambiguous range depends on
a). maximum power of the transmitter
b). pulse repetition frequency
c). width of the transmitted pulse
d). sensitivity of the radar receiver
86. In composite video waveform the function of the serrations, is to
a). equalize the charge in the integrator before the start of vertical retrace.
b). help vertical synchronization
c). help horizontal synchronization.
d). simplify the generation of the vertical sync pulse
87. The frequency range 30MHz - 300MHz is -
a). medium frequency
b). very high frequency
c). super high frequency
d). Infrared frequency
88. Which wave cannot exist inside wave guide -
a.) TE
b). TM
c). TEM
d). HE
89. Ionosphere layer of earth is situated at -
a). upto 18kms from earth
b). from 18 to 70 km
c). 70 to 500 km
d). above 500 km
90. A two cavity klystron tube is a -
a). velocity modulated tube
b). frequency modulated tube
c). Amplitude modulated tube
d). simple triode
91. As the thermal noise get doubled due to the increase in a resistance the noise power get -
a). doubled
b). quadrupted
c). unchanged
d). halved
92. Which one is a cross field tube -
a). Klystron
b). Reflex Klystron
c.) Magnetron
d.) TWT
93. The degree of coupling depends on -
a). size of hole
b). location of holes
c). size and location of holes
d). not depend on size or location of hole
94. The thermal noise depends on -
a). direct current through device

b.) resistive component of resistance
c). reactive component of impedance
d) load to connected
95. The charge on a hole is -

96. In a radio receiver the IF amplifier
a.) is tuned above the stations incoming frequency
b). amplifies the output of local oscillator
c). is fixed tuned to one particular frequency
d). can be tuned to various isolate frequencies
97. A duplexer is used to
a.) couple two antennas to a transmitter without interference
b.) isolate the antenna from the local oscillator
c.) prevent interference between two antennas connected to a receiver
d.) use an antenna for reception or transmission without interference
98. Intel,s 8085 microprocessor chip contains
a). seven 8 bit registers
b). 8 seven bits registers
c). seven 7
d). eight 8
99. Boolean algebra is based on -
a). numbers
b). logic
c). truth
d). symbols
100. When A = 0, B = 0, C = 1 then in 2 input logic gate we get - - gate
a). XOR
b). AND
c). NAND
d). NOR
101. With the beginnings of space travel, we entered a new - -
a). Era of great history
b). List
c). Book
d). Year
102. An - - though it mourns the death of someone, need not be sad.
a). Funny poem
b). Newspaper article
c). Orthodox talk
d). Elegy
103. If stare is glance so gulp is -
a). Sip
b). Tell
c). Salk

d). Admire
104. He hardly works means -
a). The work is hard
b). He is hard
c). The work is easy
d). He work very little
105. Give the opposite word for pulchritude -
a). antipathy
b). unsightliness
c). inexperience
d). languor
106. Nanometre is - - - - part of a metre.
a). Millionth
b). Ten millionth
c). Billionth
d). Ten billionth
107. Malaria affects
a). Liver
b). Spleen
c). Intestine
d). Lungs
108. Sindhu Rakshak is a/an
a). Aircraft carrier
b). Submarine
c). Multiple-purpose fighter
d). Anti-aircraft gun
109. With which subject is "Dada Saheb Phalke Award" associated?
a). Best film director
b). Best musician
c). Best documentary
d). Best work relating to promotion of Indian film Industry
110. Who developed the branch of mathematics known as Calculus?
a). Aryabhatta
b). Newton
c). Einstein
d). Archimedes
111. In which state is Kanha Park situated?
a). M.P.
b). U.P.
c). Assam
d). W. Bengal
112. Which day is observed as Human Rights Day?
a). 24th October
b). 4th July
c). 8th August
d.) 10th December
113. The Kailash Temple at Ellora is a specimen of

a). Gupta architecture
b). Rashtrakuta architecture
c). Chalukya architecture
d). Chola architecture
114. When the two Houses of Parliament differ regarding a Bill then the controversy is solved by
a). Joint sitting of the two Houses
b). President of India
c). Prime Minister of India
d). By a special committee for the purpose
115. Which of the following is not the work of Kalidasa?
a). Meghdoot
b). Raghuvansha
c). Sariputra Prakarma
d). Ritushamhara
116. Amir Khusro was the famous poet and aesthete of
a). Akbar the Great
b). Mahmud Ghaznvi
c). Shah Jahan
d.) Alauddin Khilji
117. The words ,Satyameva Jayate, have been taken from
a). Vedas
b). Bhagwad Gita
c). Mundaka Upanishada
d). Mahabharata
e). None of these
118. Which of the following countries was the first to develop a neutron bomb?
a). USA
b). USSR
c). China
d). Pakistan
119. "Kathakali" dance is connected with
a). Kerala
b). Rajasthan
c). Uttar Pradesh
d). Tamil Nadu
120. The term "Ashes" is associated with
a). Hockey
b). Cricket
c). Soccer
d). None of these