BSNL Whole Testpaper

Test Paper - VII

1. At a frequency below the resonant frequency parallel circuit is -

   a)○ Inductive

   b)○ Capacitive

   c)○ Resistive

   d)○ None

2. Which of the following are piezo-electric substances-

   a)○ Barium titanate

   b)○ Lead titanate

   c)○ Lead zirconate

   d)○ All the above

3. The resolution of a logic analyser is -

   a)○ The maximum number of input channels

   b)○ The minimum duration of the glitch it can capture

   c)○ The internal clock period

   d)○ The minimum amplitude of input signal it can display

4. In a P-type semiconductor, the conductivity due to holes (=s_p) is equal to (e=charge of hole, m_p = hole mobility, P = hole concentration)-

   a)○ <?XML:NAMESPACE PREFIX = V /> 

   b)○ 

   c)○ P.e. mp

   d)○ 

5. When a small amount of Cu is added to a Ni conductor, then the –

   a)○ Resistivity of Ni will decrease at all temperatures because Cu is better conductor than Ni

   b)○ Residual resistivity of Ni at low temperatures will increase as Cu atoms acts as defect centers

   c)○ Resistivity of Ni will increase at all temperatures as Cu destroys the periodicity of Ni and acts as defects

d)○ Resistivity of Ni remains unaltered as Cu atoms give the same numbers of free electrons as Ni atoms <?XML:NAMESPACE PREFIX = O />

6. A coil would behave as -

a)○ An inductor at high frequencies

b)○ A capacitor at very low frequencies

c)○ A capacitor at very high frequencies

d)○ A resonator at high frequencies

7. The law that induced emf and current always oppose the cause producing them was discovered by -

a)○ Maxwell

b)○ Faraday

c)○ Lenz

d)○ Fleming

8. A ,trimmer, capacitor is a variable capacitor used for -

a)○ ,Tunning up, a radio for best sensitivity

b)○ Tunning a radio to different stations

c)○ Changing the original capacitance by several hundred Pico farads

d)○ Eliminating whistling in a transistor radio

9. In panel wiring, solid wire is preferred to standard wire because it -

a)○ Can carry more current

b)○ Can be shaped better

c)○ Uses less chopper

d)○ Has better insulation

10. FET,s have similar properties to –

a)○ PNP transistors

b)○ NPN transistors

c)○ Thermionic valves

d)○ Unijunction transistors

11. The semiconductor strain gauge has gauge factor -

a)○ 2

b)○ 10

c)○ 100

d)○ 1000

12. AE 139 is a-

a)○ Tunnel diode

b)○ Germanium power transistor

c)○ Photoconductive cell

d)○ Silicon diode

13. When a zener diode is used in a power supply its function is to maintain a constant -

a)○ Output voltage

b)○ Input voltage

c)○ Output current irrespective of the load resistance

d)○ supply current

14. The value of g for a transistor in saturation is -

a)○ 0

b)○ 0.5

c)○ very near unity

d)○ 0.25

15. A DE MOSFET differs from a JFET in the sense that it has no –

a)○ channel

b)○ gate

c)○ P-N junction

d)○ substrate

16. The gating pulse is removed after firing an SCR than the current in the SCR will –

a)○ Remain the same

b)○ Immediately fall to zero

c)○ Rise up

d)○ Rise a little and then fall to zero

17. In the fabrication of an integrated circuit, the advantages of ion implantation over diffusion doping are that –

a)○ Point imperfections are not produced

b)○ Shallow doping is not possible

c)○ It is a low temperature process

d)○ Previous steps in fabrication are affected

18. The alternate mode of a dual trace oscilloscope can be used for displaying –

a)○ Any two waveforms

b)○ Two waveforms of relatively high frequency

c)○ Two waveforms of relatively low frequency

d)○ One low frequency and one high frequency waveform

19. Attenuator is a –

a)○ pure resistance network producing a constant attenuation

b)○ pure resistance network producing a variable attenuation at variable frequencies

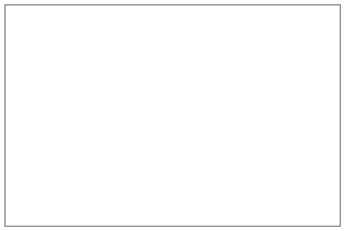
c)○ pure resistance producing a constant attenuation at all frequencies

d)○ pure resistance producing a constant attenuation at low frequencies

20. The equivalent circuit of the following circuit is –

○ ○ ○ ○

21. For the lattice type attenuator shown in the given figure, the characteristic impedance R is –



○ 

○ 

○ 

○ 

22. Thevenin,s equivalent circuit of the network shown in the given figure, between terminals T_1 and T_2 is –

○ 

○ 

○ 

○ 

23. One of the following combinations of open circuit voltage and Thevenins equivalent resistance which represents the Thevenins equivalent of the circuit shown in the given fig. is –

a)○ 1V, 10W

b)○ 1V, 1kW

c)○ 1mV, 1kW

d)○ 1mV, 10W

24. In the following circuit, the effective resistance faced by the voltage source is –

a)○ 1W

b)○ 2W

c)○ 3W

d)○ 3.3W

25. The equivalent circuit of a resistor is shown in the given fig. The resistor will be non-inductive if –

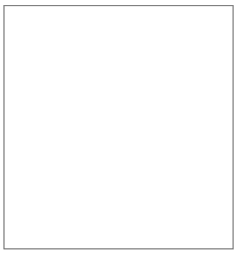
○ 

○ 

○ 

○ 

26. One of the following which is a cut set of the graph shown in fig. is –



a)○ 1, 2, 3 and 4

b)○ 2, 3, 4 and 6

c)○ 1, 4, 5 and 6

d)○ 1, 3, 4 and 5

27.For which value of R the following circuit will deliver maximum to the terminals a and b is –

○ 

○ 

○ 

○ 

28. In a coaxial cable, braided copper is used as a -

a)○ Conductor

b)○ Shield

c)○ Dielectric

d)○ Jacket

29. When the transmission loss for a 3 GHz microwave system over a certain distance is 130 dB and if the frequency is now doubled then the transmission loss will be –

a)○ 136 dB

b)○ 133 dB

c)○ 127 dB

d)○ 139 dB

30. When two equal positive point charges are placed along X- axis at X1 and –X1 respectively then the electric field vector at a point P on the positive Y-axis will be directed -

a)○ In the +x direction

b)○ In the –x direction

c)○ In the +y direction

d)○ In the –y direction

31. With reference to the given figure, the signal picked up by the receiving antenna can be increased by increasing-

a)○ h_e only

b)○ h_r only

c)○ both h_e and h_r

d)○ neither h_e nor h_r

32. Which of the following antennas are frequency independent ?

1. Folded dipole
2. Half wave dipole
3. Parabolic reflector
4. Helical antenna

a)○ 2 and 4

b)○ 3 and 4

c)○ 1,3 and 4

d)○ 1,2 and 3

33. The reading of digital multimeter are –

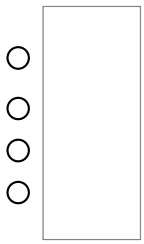
a)○ very difficult

b)○ confusing

c)○ convenient

d)○ none

34. One of the following which does not have the same units as the others –



35. Shaft encoder is used for the measurement of –

a)○ angular position

b)○ linear position

c)○ linear velocity

d)○ linear acceleration.

36. The materials used in switches, brushes and relays for electrical contact 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.

37. Capacitive transducer is superior to inductive type for the measurement of displacement because of –

a)○ absence of non-linearity

b)○ high frequency response

c)○ small size

d)○ high accuracy

38. When a RLC series circuit has R=1ohm, L=1H and C = 1F then the damping ratio on the circuit will be-

a)○ more than unity

b)○ unity

c)○ 0.5

d)○ zero

39. The sensitivity of an electromagnetic digital flow meter can be increased by increasing –

a)○ the circumferential width of rotor teeth

b)○ the radial depth of rotor teeth

c)○ the thickness of rotor teeth

d)○ the number of teeth

40. A moving iron instrument –

a)○ is an unpolarised meter

b)○ has not a fixed coil

c)○ both a and b

d)○ none

41. A linear displacement transducer of the digital type generally uses –

a)○ straight binary code

b)○ BCD

c)○ Gray code

d)○ hexadecimal code

42. The output open circuit voltage divided by the input current for a two port reciprocal network is equal to-

a)○ B

b)○ Z_{12}

c)○ $1/y_{12}$

d)○ h_{12}

43. The ac bridge shown in the given figure if balanced is Z_1 = 100 Ð30^0 Z_2 = 150Ð0^0, Z_3 = 250 Ð 40^0 and Z_4 is equal to –

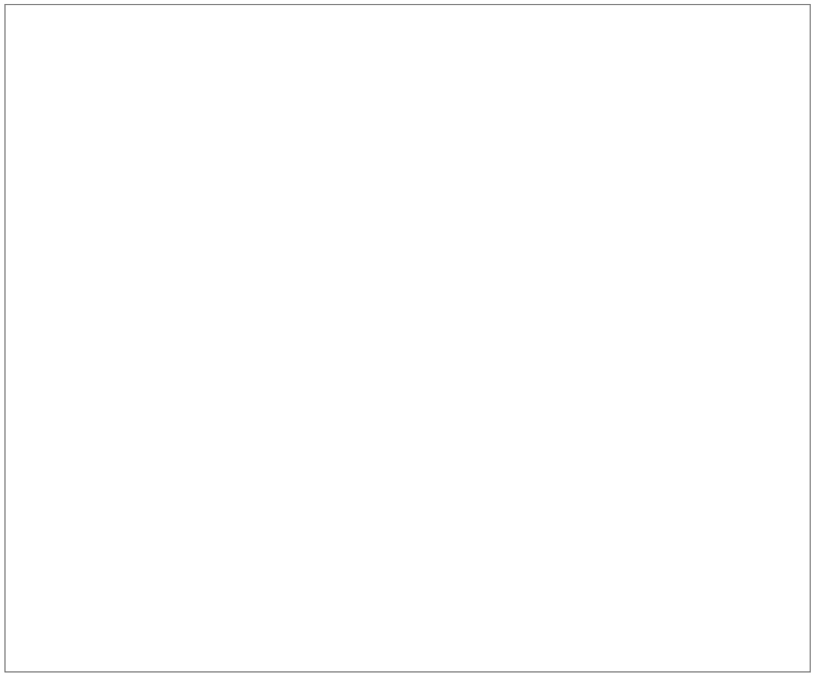
a)○ 375Ð70^0

b)○ 375Ð-70^0

c)○ 150Ð0^0

d)○ 150 Ð20^0

44. The given figure represents the variation of electric field E –



a)○ Due to a spherical volume charge $Q = Q_1 + Q_2$

b)○ Due to two concentric shells of charge Q_1 and Q_2 uniformly distributed over spheres of radii R_1 and R_2

c)○ Due to two point charges Q_1 and Q_2 located at any two points ,r,

d)○ In a single spherical shell of charges Q uniformly distributed $Q = Q_1 + Q_2$

45.In a SCR anode current flows over a narrow regain near the gate during-

a)○ delay time t_r

b)○ rise time t_r and spread time to

c)○ t_d and t_0

d)○ t_d and t_r

46.For a 3-phase six-pulse diode rectifier, the average output voltage in terms of maximum value of line voltage Vm is

○

○

○

○

47.In an inverter with fundamental ouctput frequency of 50 Hz, if third harmonic is eliminated, then frequencies of other components in the output voltage wave in Hz would be-

a)○ 250, 350, 450, high frequencies

b)○ 50, 250, 350, 450

c)○ 50, 250, 350, 550

d)○ 50, 100, 200, 250.

48.Number of SCRs in a 3 phase full converter working during overlap is-

a)○ 1 from positive group 1 from negative group

b)○ 2 from positive group 1 from negative group

c)○ 1 from positive group 2 from negative group

d)○ 2 from positive group 2 from negative group

49.For a 3 phase bridge inverter in 180^0 conduction mode. In the given fig the sequence of SCR conduction in the first two steps beginning with the initiation of thyristor is-

a)○ 6, 1, 2, and 2, 3, 1

b)○ 2,3,1 and 3,4,5

c)○ 3,4,5 and 5,6,1

d)○ 5,6,1 and 6,1,2

50.For the lattice type atten uator shown in the given figure, the characteristic impedance Rv is-

○ 

○ 

○ 

○ 

51.The plate efficiency of a class C amplifier is high because-

a)○ A resonant circuit is used as load)

b)○The plate current flows when the instantaneous plate voltage is low.

c) ○The plate current flows only when grid is driven positive.

d)○None of the above.

52.The low impedance of a dynamic loud speaker is a result of -

a)○ a large field magnet

b)○ the few turns of the voice coil

c)○ a large paper cone with big loud speakers

d)○ None of the above

53.The value of I_{CBO} in a silicon transistor of b = 49 is 20 na) The value of I_{CEO} for a temperature rise of 18^0 C would be-

a)○ 8mA

b)○ 160 nA

c)○ 1 mA

d)○ 7.84 mA

54.A certain percentage of negative feedback does not yield a fixed reduction in gain because it depends on-

a)○ Transistor configuration

b)○ Ambient temperature

c)○ Initial value of gain

d)○ Leakage current of the transistor

55.Crossover distortion occurs in --- amplifiers-

a)○ Push pull

b)○ Class A

c)○ Class B

d)○ Class AB

56. The power gain of an amplifier is 80 db) The half power frequency f_1 and f_2 are the frequency where gain has fallen to ---dB-

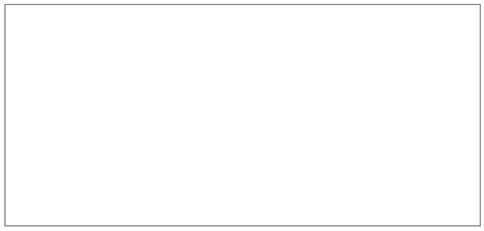
a)○ 40

b)○ 77

c)○ 0

d)○ 80/Ö2

57. In the given fig the overall voltage gain in the amplifier is -



a)○ Zero

b)○ 1

c)○ 1000

d)○ 100000

58. A two stage amplifier is required to have an upper cut off frequency of 2MHz and a lower cut off frequency 30Hz. The upper and lower cut off frequencies of individual stage are approximately-

a)○ 4MHz, 60Hz

b)○ 3MHz, 20Hz

c)○ 3MHz, 60Hz

d)○ 4MHz, 20Hz

59. Number of possible states in a circuit with n- FLIPFLOPS is-

a)○ N^n

b)○ 3^n

c)○ 10^n

d)○ 2^n

60.In a digital voltmeter the largest number that can be read is –

a)○ 0999

b)○ 1999

c)○ 2999

d)○ 9999

61.The complement of the Boolean expression  is-

○ 

○ 

○ 

○ 

62.The binary division 11000_2 , 100_2 gives –

a)○ 110

b)○ 1100

c)○ 11

d)○ 101

63.Time required by TTL circuit to switch from 0 to 1 or 1 to 0 is about –

a)○ 10 ms

b)○ 10 ns

c)○ 100 ms

d)○ 50 ns

64. Identify the wrong statement ?

a)○ $11100_2 - 10001_2 = 00101_2$

b)○ $15E_{16} = 350_{10}$

c)○ $81_{10} = 101001_2$

d)○ $37.4_8 = 111\ 111.100$

65.Type of radar used to eliminate clutter in navigational application is –

a)○ Monopulse radar

b)○ MTl radar

c)○ Tracking radar

d)○ pulse radar

66. Asynchronous sequential circuits are seldom designed to operate in the pulse mode

because –

a)○ the amplitude of input pulses in a pulse mode is very critical

b)○ the duralion of the input pulses in a pulse mode is very critical

c)○ fundamental mode asynchronous circuit is cheaper than pulse mode asynchronous circuit

d)○ fundamental mode asynchronous circuit has a higher speed of operation than the pulse mode asynchronous circuit.

67. Identity the transferred electron device-

a)○ BARITT diode

b)○ IMPATT diode

c)○ Gunn diode

d)○ Step recovery diode

68. In a closed loop system the loop transfer function is given by

The angle of departure of the root locus at S = -1+ J is-

a)○ Zero

b)○ 90^0

c)○ -90^0

d)○ -180^0

69.The transfer function of a plant is

For a step input it is required that the response settles to within 2% of its final value. The plant setting time is –

a)○ 20 sec

b)○ 40 sec

c)○ 35 sec

d)○ 45 sec

70.The transfer function and states in a linear feedback system shown in given fig. are respectively –

a)○ strictly stable and not stable

b)○ strictly stable and stable

c)○ not strictly stable and stable

d)○ not stable and not stable.

71.What is the steady state-error corresponding to a unit step input if the magnitude plot for a transfer function is shown in figure

○ 

○ 

○ 

○ 

72. Mark the correct effect in respect of addition of a pole to the system loop transfer function?

1. The root locus is pulled to the right.

2. The system response becomes slower.

3. The steady state error increases.

of these statements-

a)○ 1 and 2 are correct

b)○ 1, 2 and 3 are correct

c)○ 2 and 3 are correct

d)○ 1 and 3 are correct

73. In a feedback control system the polar plot of the open-loop transfer function intersects the real axis at - 2. The gain margin of the system is -

a)○ –5 dB

b)○ 0 dB

c)○ 6 dB

d)○ 40 dB

74.The unity feedback system for K is

the imaginary axis is-

a)○ 2

b)○ 4

c)○ 6

d)○ 48

75.The constant M loci plot is symmetrical width respect to-

a)○ real axis and imaginary axis

b)○ M =1 straight line and the real axis

c)○ M =1 straight line and the imaginary axis

d)○ M = 1 straight line and the imaginary axis

76. Identify the wrong statement-

a)○ Attenuation of satellite signals gain and varies almost inversely with the angle of elevation.

b)○ At present4/6 GHz Geostationary satellites are being parked in Geosynchronous orbits at least 10^0 apart.

c)○ The distance between satellite and earth station varies slightly with angle of elevation.

d)○ The angle of elevation depends on latitude of the earth station and the difference in longitude between earth station and the satellite.

77.The Voltage Vo of the given circuit is-

a)○ 5V

b)○ 3.1 V

c)○ 2.5 V

d)○ Zero

78.78. An antenna has 40 antenna resistance and 60W radiation resistances. The efficiency of the antenna is -

a)○ 30%

b)○ 40%

c)○ 50%

d)○ 60%

79.79. The blind speed of an MTl radar can be avoided by changing the-

a)○ Carrier frequency

b)○ Pulse repetition frequency

c)○ Antenna rotation rate

d)○ Transmitted power

80. Interlacing used in television is for-

a)○ produce the illusion of motion.

b)○ ensures that all the lines on the screen are scanned, not merely the alternate ones.

c)○ simplify the vertical sync pulse train

d)○ avoid flicker

81. The best system for accurate tracking if the target cross section is changing is-

a)○ lobe switching

b)○ sequential lobing

c)○ conical scanning

d)○ monopulse

82. In a single stage differential amplifier, the output effect voltage is basically dependent on the mismatch of-

a)○ V_{BE}, I_B and b

b)○ V_{BE} and I_B

c)○ I_B and b

d)○ V_{BE} and b

83. Antenna elevation angle at the ground station for satellite communication is always kept above 5^0 to-

a)○ Minimise the sky noise temperature

b)○ Reduce the effect of oxygen and water vapor absorption on the antenna noise temperature

c)○ Minimise the slant range

d)○ Increase the visibility of the satellite

84.In Hybrid wave-

a)○ Both electric and magnetic fields are purely transverse to direction of propagation of wave

b)○ Only electric field is purely transverse to direction of propagation of wave

c)○ Only magnetic field is purely transverse to direction of propagation of wave

d)○ Neither electric nor magnetic fields are transverse to direction of propagation of the wave

85. Balometer technique is used to measure –

a)○ Frequency

b)○ Low power

c)○ Attenuation

d)○ Phase shift

86. In fast switching circuits we use –

a)○ Klystron tube

b)○ Tunnel diode

c)○ Magnetron tube

d)○ PIN diode

87. PIN diode is used as –

a)○ Low noise mixer

b)○ Microwave detector

c)○ Balance mixer

d)○ Phase shifter

88. A periodic fluctuation of current passing through n type GaAS specimen when applied voltage exceeds critical value-

a)○ Gauss's law

b)○ Faraday's law

c)○ GUNN effect

d)○ Doppler effect

89. LOS distance can be increased by –

a)○ Increasing height of transmitting antenna

b)○ Increasing height of receiving antenna

c)○ Increasing height of bath

d)○ LOS distance can not be increased

90. Which fading produces serious distortion of modulated signal-

a)○ Selective

b)○ Polorisation

c)○ Interference

d)○ Slow fading

91. 8085 mP is a processor of -

a)○ 8 bit

b)○ 10 bit

c)○ 32 bit

d) ○None

92. The Bit position of AC flog in flog register is-

a)○ D_2

b)○ D_4

c)○ D_6

d)○ D_7

93. In which arithmatic operation CY flog do not affect even if result is larger than 8 bit-

a)○ INR B

b)○ ADD A, B

c)○ SUB A, B

d)○ None

94. A stock means-

a)○ an 8 bit register in microprocessor

b)○ a 16 bit memory address in memory

c)○ a 16 bit register in microprocessor.

d)○ a set of memory location in memory reserved for storing information temporarily.

95.RIM instruction-

a)○ checks pending interupts

b)○ sets the interupt mask

c)○ resets the RST interupt

d)○ none of above

96.A signal generated by microprocessor to provide timing of various operation is transmited through-

a)○ address bus.

b)○ data bus

c) ○ control bus

d) ○in buit signal no need to transmit

97. On execution of RAL-

a)○ Each bit is shifted right to the adjacent position bit D_o becomes D_y

b)○ Each bit is shifted right to adjacent position bit D_o becomes the carry bit and carry bit is shifted into D_T

c)○ Each bit is shifted to adjacent left position. Bit D_T becomes D_o

d)○ Each bit is shifted to the adjacent left postion. Bit D_T becomes the carry bit and the carry bit is shifted into D_o

98.A frequency divider can be designed with help of-

a)○ Monostable

b)○ Bistable

c)○ Astable

d)○ Quasistable

99.The not allowed condition for NAND gate SR FF is-

a)○ S = 0 R = 0

b)○ S = 0 R = 1

c)○ S = 1 R = 0

d)○ S = 1 R = 1

100. In IC resistors are formed from p-type semiconductor are –

a)○ thin film

b)○ thick film

c)○ hybrid

d)○ monolithic

101. Give the tense of the following sentence-

He walked to the garden.

a)○ Present

b)○ Past

c)○ Future

d)○ None

102. You may go there if you want to. Here, the modal auxiliary ,may, indicates-

a)○ obligation

b)○ politeness

c)○ possibility

d)○ request

103. What type of a sentence is this?

His findings were imroved and built apon.

a)○ Simple

b)○ Comound

c)○ Complex

d)○ None of the above

104.1The manager is usually strict but in Madhav,s case he decided to be-

a)○ direct

b)○ fair

c)○ excused

d)○ lenient

105.Find the word which is wrongly spelt-

a)○ possession

b)○ ocassion

c)○ profession

d)○ procession

106. "Dow Jones" is -

a)○ Name of the national museum in London

b)○ Bridge over River Thames

c)○ New York Stock Index

d)○ New Olympic champion in cycling

107.The term "Ashes" is associated with-

a)○ Hockey

b)○ Cricket

c)○ soccer

d)○ None of these

108. "Kathakali" dance is connected with-

a)○ Kerala

b)○ Rajasthan

c)○ Uttar Predesh

d)○ Tamil nadu

109. Among the following Miss India Universe 2001 is-

a)○ Ms Sara corner

b)○ Ms Maheshwari Thiagarajan

c)○ Ms Celina Jetley

d)○ None of the these

110. Maharashtra Bhusan Award for the year 2000 – 2001 by the state government goes to -

a)○ Sanjay Manjrekar

b)○ Vinod Kambli

c)○ Sachin Tendulkar

d)○ Praveen Sharma

111. Who was Sworn in as the chief Justice of India-

a)○ Mr. S. Krishnaswamy

b)○ Mr.A.K. Mehra

c)○ Mr. J.K. Naidu

d)○ Mr. S.P. Bharucha

112.Which one of the following tennis competitions is not included in GRAND SLAM?

a)○ Wimbeldon

b)○ U.S open

c)○ French open

d)○ Australian open

113. The first Korean to win the Japan open badminton tournament is -

a)○ Lee Hyun – II

b)○ Marleen Renders

c)○ Shang Pee

d)○ Emma Yan

114. India launched first satellite by the name-

a)○ Bhaskara

b)○ Aryabhatt

c)○ INSAT

d)○ APPLE

115.. Which state in India is called the “garden of spices”?

a)○ Karnataka

b)○ Kerala

c)○ Assam

d)○ Tamil Nadu

116.. The new CEO and the president of the Infosys Technology is –

a)○ N. R. Narayan Murth

b)○ Nandan Nilekani

c)○ SD Shibulal

d)○ M. Subbarao

117. The President of India can nominate to the Rajya Sabh-

a)○ 6 members

b)○ 9 members

c)○ 12 members

d)○ 15 members

118.King of Nepal is-

a)○ Prince Gyanendra

b)○ Prince Dipendra

c)○ Prince Birendra

d)○ Prince Devendra

119.The famous paper which gandhigi edited to propagate his ideas-

a)○ Khadi

b)○ Swadeshi

c)○ Harijan

d)○ Satyagraha

120. The length of the pitch in the cricket is-

a)○ 22 meters

b)○ 25 yards

c)○ 50 feet

d)○ 22 yards