Q1. इनमें से 'अनघ' का विलोम शब्द है

A. निरघ

B. अघी

C. कृती

D. सनघ

Q2. इनमें से 'पक्षी' शब्द का पर्यायवाची नहीं है

A. पिशुन

B. विहंग

C. शकुनि

D. द्विज

Q3. नीचे दिये गये वाक्यांश और उसके लिए प्रयुक्त होने वाले एक शब्द का एक युग्म गलत है, वह है

A. उत्तराधिकार में प्राप्त सम्पत्ति - धरोहर

B. जिसे प्रमाण द्वारा सिद्ध न किया जा सके - अप्रमेय

C. सीमा का अनुचित रूप से किया गया उल्लंघन - अतिक्रमण

D. पूरब और उत्तर (दिशा) के बीच का कोना - ईशान

Q4. निम्नलिखित में से 'महीसुर' शब्द का अर्थ है

A. पृथ्वी का रक्षक

B. महिषासुर

C. राक्षस

D. ब्राह्मण

Q5. निम्नलिखित में से तत्सम शब्द है

A. विवाह

B. ईख

C. खीर

D. गिद्ध

Q6. 'ने + अन' = 'नयन' में सन्धि है

A. यण सन्धि

B. गुण सन्धि

C. अयादि सन्धि

D. वृद्धि सन्धि

Q7. निम्नलिखित में से शुद्ध वर्तनी का शब्द है
A. उज्ज्वल
B. उज्जवल
C. उजवल
D. उज्वल

Q8. 'बुद्धिहीन' शब्द व्याकरण की दृष्टि से इनमें से किस संवर्ग में है?
A. संज्ञा
B. सर्वनाम
C. विशेषण
D. क्रिया

Q9. इनमें से एक वाक्य शुद्ध है, वह है

A. मेरा प्राण संकट में है।

B. सोमवार को रेलवे के कॊइ कर्मचारी गिरफ्तार हुए।

C. अपराधी को मृत्युदंड की सजा दी गयी है।

D. महादेवी वर्मा छायावाद की प्रसिद्ध कवयित्री है।

Q10. इनमें से दन्त्य ध्वनियाँ हैं
A. च, छ, ज, झ
B. प, फ, ब, भ
C. त, थ, द, ध
D. ट, ठ, ड, ढ

Q11. इनमें से व्यंजन सन्धि आधारित शब्द है
A. अन्वेषण

B. उद्धार

C. लघूर्मि

D. पुरोहित

Q12. 'चौराहा' शब्द में समास है

A. तत्पुरुष

B. बहुव्रीहि

C. अव्ययीभाव

D. द्विगु

Q13. 'निवृत्ति' शब्द का विलोम है

A. सद्वृत्ति

B. सुवृत्ति

C. प्रवृत्ति

D. कुवृत्ति

Q14. निम्नलिखित में से 'शारदा' का पर्यायवाची शब्द है

A. कमला

B. कौमुदी

C. वारुणी

D. गिरा

Q15. 'मृत्यु के इच्छुक' - इस वाक्यांश के लिए एक शब्द है

A. मुमुक्षा

B. मुमूर्षु

C. मुमूर्षा

D. मुमुक्षु

Q16. 'चीनांशुक' शब्द का अर्थ है

A. तंतु

B. रेणु

C. रेशम

D. चीनी मिट्टी

Q17. निम्नलिखित में से तद्भव शब्द है

A. वानर

B. तेल

C. पीत

D. घोटक

Q18. अनेकार्थक शब्द 'सारंग' का निम्नलिखित में से एक अर्थ नहीं है

A. भौंरा

B. कामदेव

C. तलवार

D. ज्योतिषी

Q19. 'अंदर-अंदर कड़ाही में गुड़ पगना' - इस मुहावरे का सही अर्थ है

A. ज्ञान होना

B. गुप्त मंत्रणा होना

C. स्वसीमित होना

D. किसी काम न आना

Q20. निम्नलिखित में से शुद्ध वर्तनी का शब्द है

A. अनाधिकार

B. रचइता

C. सहस्त्र

D. संग्रहीत

Q21. समास-योजना की दृष्टि से इनमें से एक अशुद्ध युग्म है

A. सतसॅइ   -द्विगु समास

B. तुलसीकृत -तत्पुरुष समास

C. मंदोदरी   -बहुव्रीहि समास

D. मरणासन्न -अव्ययीभाव समास

Q22. अलग होने के अर्थ में 'से' कारक-चिह्न का प्रयोग होता है

A. अपादान कारक में

B. करण कारक में

C. करण कारक तथा अपादान कारक दोनों में

D. संबंध कारक में

Q23. 'पवन' शब्द का सन्धि-विच्छेद है

A. पौ + अन

B. पो + अन

C. प + अवन

D. प + वन

Q24. इनमें से शुद्ध वर्तनी का रूप है

A. निरझरणी

B. निरझरिणी

C. निर्झरिणी

D. निर्झरणी

Q25. निम्नलिखित में से एक शब्द में उपसर्ग का प्रयोग नहीं हुआ है, वह शब्द है

A. सहज

B. अनुभव

C. संचार

D. नयन

26.   Power consumption in moving iron instruments are

   A. Higher

   B. Lower

   C. Lossless

   D. None of the above

27.   A Lassajous pattern on the oscilloscope is stationary and has 6 vertical maximum values and 5 horizontal maximum values. The frequency of horizontal input is 1500 Hz. The frequency of vertical input is

   A. 1800 Hz

   B. 1250 Hz

   C. 45000 Hz

   D. None of the above

28. With an external multiplier setting of 20 KΩ an analog voltmeter reads 440 V and with multiplier setting of 80 KΩ it reads 352 V, Then for a multiplier setting of 40 KΩ, the voltmeter will read

A. 370 V

B. 402 V

C. 406 V

D. 394 V

29. An indicating instrument is more sensitive if its torque to weight ratio is

A. Much larger than unity

B. Of the order of unity

C. Much less than unity

D. All of the above

30. Two wattmeter method can be used to measure the total power delivered to

A. Star connected load only

B. Delta connected load only

C. Star or Delta connected load.

D. Star connected with neutral load

31. An overhead line with surge impedance 400 ohm is terminated through a cable of impedance Z_c. A surge travelling over the line does NOT suffer any reflection at the junction. The value of Z_c is

A. 40 ohms

B. 500 ohms

C. 450 ohms

D. None of these

32. In the HVDC system, the ac harmonics which get effectively eliminated with 12-pulse bridge converters are

A. Triplen harmonics

B. Triplen and 5th harmonics

C. Triplen, 5th and 7th harmonics.

D. 5th and 7th harmonics

33. The capacitances of a 3-core belted cable are measured and found to be as (i) between 3-cores bunched together and the sheath is 15 µF (ii) between a conductor and the other two connected together to the sheath is 10 µF. Then capacitance to neutral value in µF is

A. 12.5

B. 12.0

C. 9.5

D. 8.5

34. The incremental cost characteristics of the two generators delivering a total load of 200 MW are as follows:

$$\frac{dF_1}{dP_1} = 2.0 + 0.01\,P_1$$

$$\frac{dF_2}{dP_2} = 1.6 + 0.02P_2$$

What should be the values of P_1 and P_2 for economics operation?

A. $P_1 = P_2 = 100$ MW

B. $P_1 = 800$ MW, $P_2 = 120$ MW

C. $P_1 = 200$ MW, $P_2 = 0$ MW

D. $P_1 = 120$ MW, $P_2 = 80$ MW

35. The insulation of the modern EHV lines is designed based on

A. Corona

B. Radio interference

C. The switching voltage.

D. The lightning voltage

36. The coefficient of reflection of voltage for short circuited line is

A. −1.0

B. 1.0

C. 0.0

D. None of the above

37. For line to line fault on an unloaded generator, then

A. $Ia_1 = Ia_2$

B. $Ia_1 = -\,Ia_2$

C. $Ia_1 = Ia_2 = Ia_0$

D. None of the above

38. The following figure shows zero sequence equivalent circuit of

Ref. Bus

A. Δ – Δ Bank

B. Y – Δ Bank
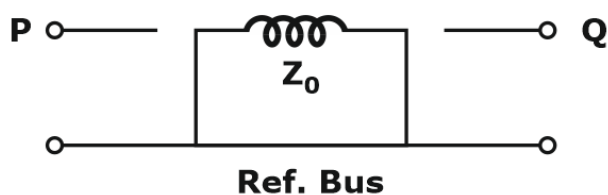
C. Y – Y Bank

(D) Bank
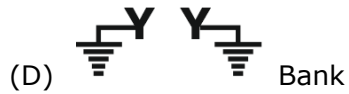
39. The maximum demand of a consumer is 2 kW and the corresponding daily energy consumption is 30 units. What is the corresponding load factor?

   A. 25%

   B. 50%

   C. 62.5%

   D. 75%

40. The voltage regulation of a shunt transmission line will be maximum when the value of tan ϕ_g, for lagging power factor is

   A. Unity

   B. Zero

   C. $\dfrac{R}{X_2}$

   D. $\dfrac{X_2}{R}$

41. The 180° phase line of Bode diagram is equal to

   A. Positive imaginary axis in Nyquist plot

   B. Negative imaginary axis in Nyquist plot

   C. Positive real axis in Nyquist plot

   D. Negative real axis in Nyquist plot

42. Let $X' = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix} X + \begin{bmatrix} 0 \\ 1 \end{bmatrix} U$

   $U = \begin{bmatrix} b, & 0 \end{bmatrix} X$

   where b is an unknown constant. This system is

   A. Observable for all values of b

   B. Unobservable for all values of b

   C. Observable for all non-zero values of b

D. Unobservable for all non-zero values of b

43. Consider solar radiation of 200 J/m^2 and per unit time during daylight, find the area of Photo Voltaic (PV) cells needed to generate enough electric power of run (i) a desktop computer of 400 W (ii) an electric geyser of 1 kW and (iii) a toaster of 500 W. Assume the efficiency of PV to be 25%.

    A. 38 m^2

    B. 8 m^2

    C. 8 m^2

    D. 20 m^2

44. Sheaths are used in cables to

    A. Provide mechanical strength

    B. Provide proper insulation

    C. Prevent ingress of moisture

    D. None of the above

45. A negative area control error means that

    A. The area is not generating enough power to send the desired amount out of the area

    B. The area is generating more power to send the desired amount out of the area

    C. The area is generating power to meet its own requirement

    D. None of the above

46. In a three-phase system the current in the return path through neutral is

    A. $3 \, Ia_0$

    B. $3 \, Ia_1$

    C. $3 \, Ia_2$

    D. None of the above

47. At the swing bus specified are

    A. P, Q

    B. |V|, δ

    C. P, V

    D. None of the above

48. The efficiency of a transmission line

    A. Increases with decrease in load p.f.

    B. Is independent of load p.f.

    C. Increases with increase in load p.f.

D. Decreases with increase in load p.f.

49. Feedback control system is basically

A. Band pass filter

B. High pass filter

C. Low pass filter

D. Band stop filter

50. The open-loop transfer function of a system is $T(S) = \dfrac{K}{(S+1)^3}$. The phase crossover takes place at $\omega_c = \sqrt{3}$. For the gain cross also occur at ω_c, the value of K should be

A. 10

B. 8

C. 18

D. 1

51. The determinant of graph Δ for the SFG shown below is
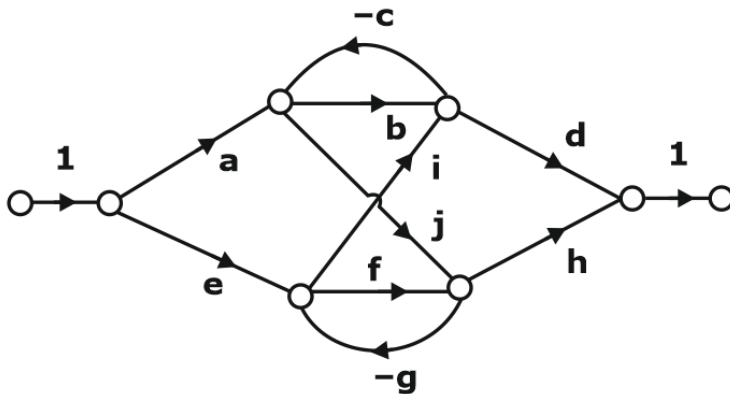
A. 1 – bc – fg – bcfg – cigj

B. 1 – bc – fg – cigj + bcfg

C. 1 + bc + fg + cigj – bcfg

D. 1 + bc + fg + bcfg – cigj

52. A second order control system is defined by following differential equation

$$4\frac{d^2c(t)}{dt^2} + 8\frac{dc(t)}{dt} + 16c(t) = 16r(t)$$

The damping ratio and natural frequency for this system are respectively

A. 0.50 and 4 rad/sec

B. 0.25 and 4 rad/sec

C. 0.25 and 2 rad/sec

D. 0.50 and 2 rad/sec

53. The break away point in the root loci plot of the loop transfer function

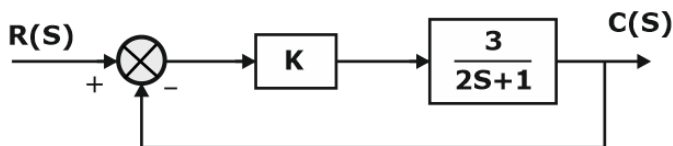$$G(S) = \frac{K}{S(S+3)^2}$$ is

A. −2.5

B. −1.0

C. −2.0

D. −0.5

54. Consider the loop transfer function

$$G(S)H(S) = \frac{K(S+6)}{(S+3)(S+5)}$$

In root-locus diagram the centroid is located at

A. −4

B. − 2

C. − 1

D. −3

55. For what value of K is the time constant of the system of figure given below is less than 0.2 sec?

A. K > 3

B. K > 5

C. K > 7

D. K > 9

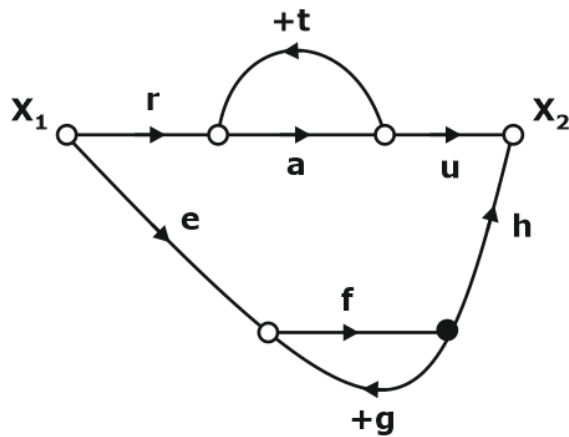56. The transfer function G(S) = C(SI − 1)⁻¹ b of the system

x′ = Ax + bu

u = Cx + du

has no pole-zero cancellation. The system

A. is controllable and observable

B. is observable but uncontrollable

C. is controllable but unobservable

D. None of the above

57. For the signal flow diagram shown in figure, the transmittance between X_1 and X_2 is

A. $\dfrac{rst}{1-eh}+\dfrac{rsu}{1-st}$

B. $\dfrac{rsu}{1-fg}+\dfrac{efh}{1-st}$

C. $\dfrac{efh}{1-ru}+\dfrac{rsu}{1-eh}$

D. $\dfrac{rsu}{1-st}+\dfrac{efh}{1-fg}$

58. In a speed control system, output rate feedback is used to

A. Limit the speed of motor

B. Limit the acceleration of the motor

C. Reduce the damping of the system

D. Increase the gain margin

59. The sparking at the brushes of a dc generator is due to

A. Reactance voltage

B. Armature reaction

C. Light load

D. High resistance of the brushes

60. The purpose of using oil in the transformer is

A. Cooling

B. Insulation

C. Cooling and insulation

D. Lubrication

61. If residual magnetism is NOT present in a d.c. generator the induced emf at zero speed

A. 10% of rated voltage

B. 50% of rated voltage

C. Zero

D. Same as the rated voltage

62. A single phase transformer on full load has an impedance drop of 20V and resistance drop of 10V. The value of power factor at zero voltage regulation would be

A. 0.86 lagging

B. 0.86 leading

C. 0.90 leading

D. 0.707 lagging

63. Starting torque and maximum torque of 3-phase I.M. varies as respectively

A. $\dfrac{1}{f^2}$ and $\dfrac{1}{f^3}$

B. $\dfrac{1}{f^3}$ and $\dfrac{1}{f^2}$

C. $\dfrac{1}{f}$ and $\dfrac{1}{f^2}$

D. $\dfrac{1}{f^2}$ and $\dfrac{1}{f}$

64. The power factor of a synchronous motor

A. Improves with increase in excitation and may even become leading at high excitation

B. Decreases with decrease in excitation

C. Is independent of its excitation

D. Increases with loading for a given excitation

65. The impedance of a delta/star, 1100V/400V transformer of a capacity 100 kVA is (0.02 + j0.07) p.u. The ohmic impedance per phase referred to primary side is

A. (0.02 + j0.07) ohm

B. (0.55 + j1.925) ohm

C. (42 + j 147) ohm

D. (72.6 + j254.1) ohm

66. An electric motor with constant-output power will have torque-speed characteristics in the form of a

A. Straight line through origin

B. Straight line parallel to the speed axis

C. Circle about the origin

D. Rectangular hyperbola

67. In the given parallel tuned circuit at parallel resonance the impedance of the circuit is
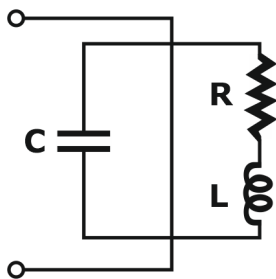
A. L/CR

B. LC/R

C. R/LC

D. LCR

68. Super position theorem is valid only for

A. Linear circuits

B. Non-linear circuits

C. Both A. and B.

D. Neither A. nor B.

69. If an R-C driving point impedance function, z(S) has equal number of pole and zeros at finite locations, then

A. $z(0) \leq z(\infty)$

B. $z(0) \geq z(\infty)$

C. $z(0) < z(\infty)$

D. $z(0) > z(\infty)$

70. In the circuit shown below, what will be the value of current through resistance R?
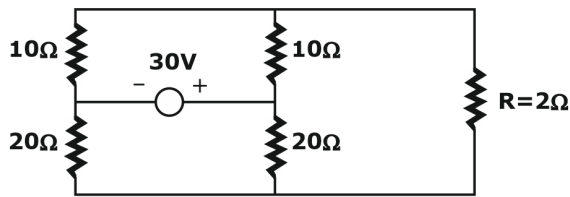
A. $\dfrac{2}{3}$ A

B. $\dfrac{3}{4}$ A

C. 0A

D. $\dfrac{9}{4}$ A

71. A Hartley oscillator is used for generating

A. Very low frequency oscillations

B. Radio frequency oscillations

C. Microwave oscillations

D. Audio frequency oscillations

72. For the most accurate model the diode forward current is

A. $I_D - I_S(e^{qV_D/nRT} - 1)$

B. $I_D - I_S(1 - e^{qV_D/nRT})$

C. $I_D - I_S(e^{-qV_D/nRT} - 1)$

D. $I_D - I_S(1 - e^{-qV_D/nRT})$

73. For the input-output characteristics of amplifier shown in fig. below the voltage gain is
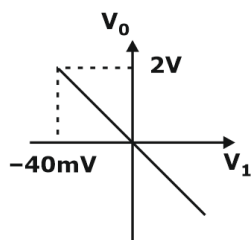

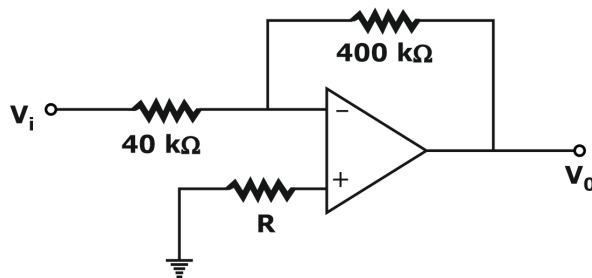Fig: Typical input-output characteristics of inverting amplifiers

A. A = 50

B. A = −50

C. A = 0.08

D. A = −0.08

74. In a crystal oscillator, a crystal has thickness of t. If you reduce t by 1%, what happens to the frequency 'f'?

    A. f will increase by 2%

    B. f will decrease by 2%

    C. f will increase by 1%

    D. f will decrease by 1%

75. For the circuit shown in figure below the value of $A_v = \dfrac{V_0}{V_i}$ is

    A. −10

    B. 10

    C. −11

    D. 11

76. For an electric field E = E$_0$ sinωt, what is the phase difference between the conduction current and displacement current?

    A. 0°

    B. 45°

    C. 90°

    D. 180°

77. Match List-I and List-II and select the correct answer using the codes.

List-I	List-II
A. Continuity equation	1. $\nabla \times \vec{H} = \vec{J} + \dfrac{\partial \vec{D}}{\partial t}$
B. Ampere's law	2. $\vec{J} = \dfrac{\partial \vec{D}}{\partial t}$
C. Displacement current	3. $\nabla \times \vec{E} = -\dfrac{\partial \vec{B}}{\partial t}$

D. Faraday's Law	4. $\nabla \times \vec{J} = -\dfrac{\partial P_v}{\partial t}$

Codes:

   A B C D

A. 4 3 2 1

B. 4 1 2 3

C. 2 3 4 1

D. 2 1 4 3

79. The ratio of charge stored by two metallic spheres raised to the same potential is 6. The ratio of the surface areas of the sphere is

   A. 6

   B. 1/6

   C. 36

   D. 1/√6

80. In cylindrical co-ordinates

$$\frac{1}{\rho}\frac{\partial}{\partial \rho}\left(\rho\frac{\partial V}{\partial \rho}\right) + \frac{1}{\rho^2}\frac{\partial^2 V}{\partial \phi^2} = 0 \quad \text{is}$$

   A. Laplace's equation

   B. Poisson's equation

   C. Euler's equation

   D. None of the above

81. Which of the following instruments are capable of serving as transfer instruments?
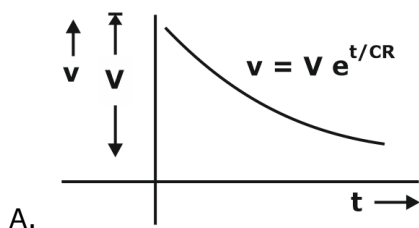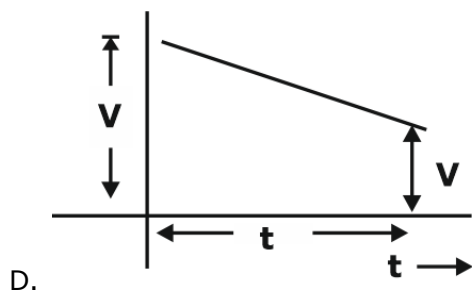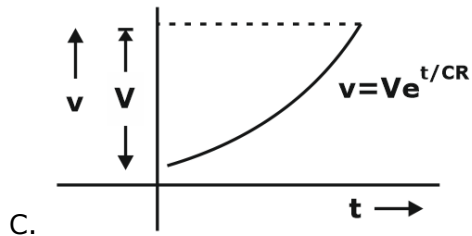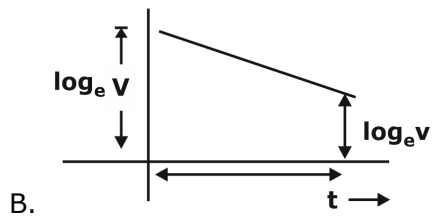
   A. Moving iron

   B. Moving coil

   C. Electro dynamometer

   D. None of the above

82. For measurement of high resistance by loss of charge method which graph be used for more accurate results?

A.

B.

C.

D.

83. The scale of moving coil instruments are

    A. Linear

    B. Non-linear

    C. Not uniform

    D. None of the above

84. The first two-row of Routh's tabulation of a third order equation are

    s^3 2 2

    s^2 4 4

    This mans there are

    A. Two roots at s = ± j and one root is right half of s-plane

    B. Two roots at s = ± j2 and one root is left half of s-pane

    C. Tow roots at s = ± j2 and one root is right half of the s-plane

    D. Tow roots at s = ± j and one root is left of s-plane.

85. The open-loop transfer function of a unity feed-back control system is given by

    $$G(S) = \frac{K(S+2)}{(S+1)(S-7)}$$ for $K > 6$, the stability characteristic of the open-loop and closed loop configurations of the system are respectively

    A. Stable and stable

B. Unstable and stable

C. Stable and unstable

D. Unstable and unstable

86. A second order control system has a transfer function

$$\frac{16}{S^2 + 4S + 16}$$

What is the time for the first overshoot?

A. $\dfrac{2\pi}{\sqrt{3}}$ S

B. $\dfrac{\pi}{\sqrt{3}}$ S

C. $\dfrac{\pi}{2\sqrt{3}}$ S

D. $\dfrac{\pi}{4\sqrt{3}}$ S

87. Derivative error compensation is employed in feedback control system to

A. Increase the effective damping in the system

B. Decrease the effective damping in the system

C. Improve the stable state response of system

D. None of the above

88. Consider the characteristic polynomial of a feedback system $q(s) = s^4 + s^3 + s^2 + s + K$

A. The system is stable for all K > 0

B. The system is unstable for K > 0

C. K = 8 results in marginal stability

D. Nor of the above is correct

89. Effect of back emf in a armature controlled dc servometer is

A. To increase effective motor friction thereby reducing motor time constant

B. To increase effective motor friction thereby increasing motor time constant

C. To increase motor inertia, thereby increasing motor time constant

D. To increase motor inertia, thereby reducing motor time constant

90. A linear time invariant system is described by state variable model

$$\begin{bmatrix} x_1' \\ x_2' \end{bmatrix} = \begin{bmatrix} -1 & 0 \\ 0 & 2 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix} + \begin{bmatrix} 0 \\ 1 \end{bmatrix} u$$

$$y(t) = \begin{bmatrix} 1 & 2 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \end{bmatrix}$$

A. The system is incontrollable and completely observable

B. The system is completer controllable and observable

C. The system is completely controllable and unobservable

D. The system is uncontrollable and unobservable

91. The most commonly used input signal in control system is

A. Step function

B. Ramp function

C. Accelerating function

D. All of the above

92. When a two winding transformer is connected as an auto transformer its efficiency at full load

A. Decreases

B. Increases

C. Remains same

D. None of the above

93. During blocked rotor test on an induction motor, the power is drawn mainly for

A. Core loss

B. Copper loss

C. Windage and frictionloss

D. Both A. and B.

94. A synchronous phase modifier as compared to the synchronous motor used for mechanical loads has

A. Larger shaft and higher speed

B. Smaller shaft and higher speed

C. Larger shaft and lower speed

D. Smaller shaft and lower speed

95. A 6-pole lap-connected DC generator has 480 conductors and armature circuit resistance is 0.06 ohm. If the conductors are reconnected to form wave winding, other things remaining unchanged, the value of armature circuit resistance will be

A. 0.01 Ω

B. 0.08 Ω

C. 0.36 Ω

D. 0.54 Ω

96. The relative speed between the magnetic fields of stator and rotor under steady state operation is zero for

A. Induction Motor

B. DC Machine

C. A synchronous machine

D. All of the above,

97. During hunting of synchronous motor

A. Negative phase sequence currents are generated

B. Damper bar develops torque

C. Harmonics are developed in the armature circuit

D. Field excitation increases

98. The DC Motor, which can provide zero speed regulation at full load without any controller is

A. Series motor

B. Shunt motor

C. Cumulative compound

D. Differential compound

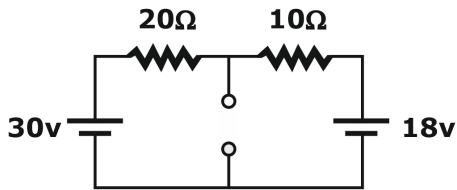99. The hybrid parameter h_{12} for the two port network shown in figure
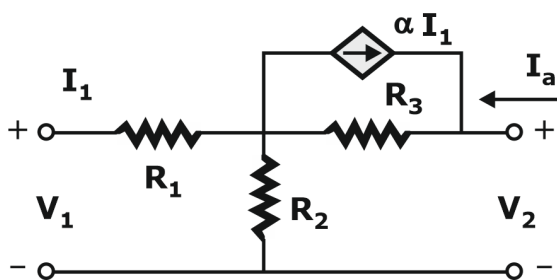
A. $\dfrac{\alpha R_2}{(R_2 + R_3)}$

B. $\dfrac{(1-\alpha)R_3}{R_2 + R_3}$

C. $\dfrac{(1-\alpha)R_2}{R_2 + R_3}$

D. $\dfrac{R_2}{\left(R_2 + R_3\right)}$

100. Fourier transform and Laplace transform are related through
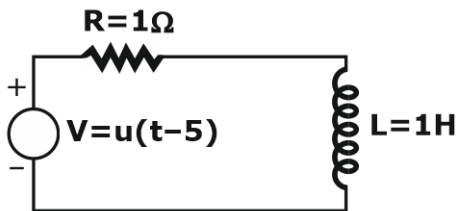
A. Time domain

B. Frequency domain

C. Both time and frequency domains

D. None of these

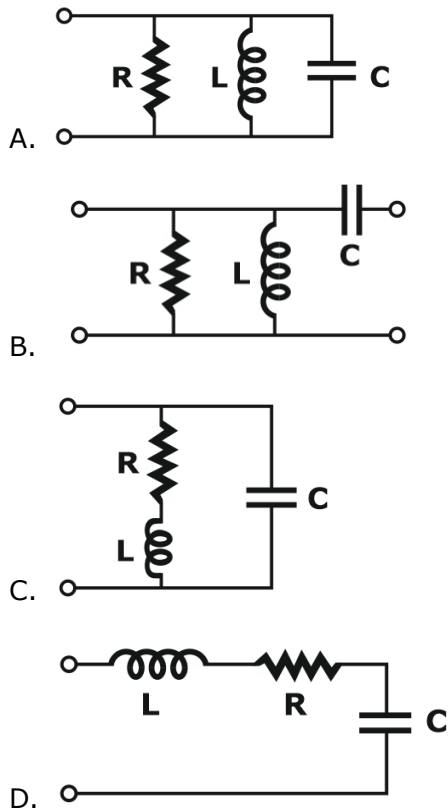101. Find Norton equivalent current source at terminal X-Y in figure below

A. I_N = 4 mA, R_N = 5Ω

B. I_N = 1 A, R_N = 3.5Ω

C. I_N = 2.5 A, R_N = 6Ω

D. I_N = 3.3 A, R_N = 6.67Ω

102. A unit step vorlage u(t–5) is applied to the R-L network below. The current is given by

A. $1 - e^{-t}$

B. $[1 - e^{-(t-5)}]u(t - 5)$

C. $[1 - e^{-t}]u(t - 5)$

D. $1 - e^{-(t-5)}$

103. An R-L-C circuit for the driving point admittance function $\left[\dfrac{\frac{1}{RLS}}{\left(\frac{1}{R} + \frac{1}{LS}\right)} + CS\right]$ is

A.

B.

C.

D.

104. An ideal current source has zero

A. Internal conductance

B. Internal resistance

C. Voltage on no-load

D. Ripple

105. The drain gate capacitance of a junction FET is 2 pF. Assuming common source voltage gain of 20, what is the input capacitance due to Miller effect?

A. 21 pF

B. 40 pF

C. 42 pE

D. 10 pF

106. Which of the following for the JFETs is NOT applicable?

A. Depletion Mode (N-Channel)

B. Depletion Mode (P-Channel)

C. Enhancement Mode (N-Channel)

D. None of the above

107. Consider the non-inverting amplifier circuit of figure given below. The closed loop voltage gain is
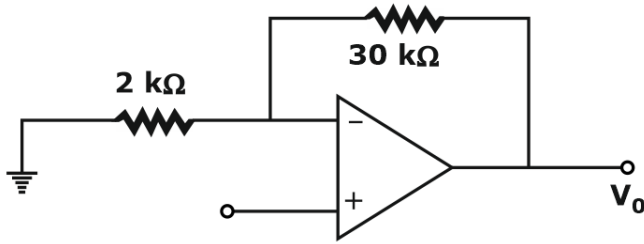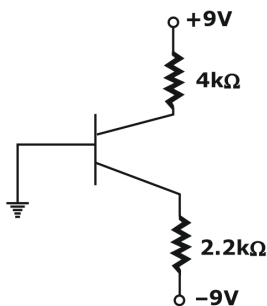
A. 16

B. −14

C. 15

D. 14

108. If the bias voltage applied across the p-n junction increases the potential barrier, the applied voltage is known as

A. Forward bias voltage

B. Reverse bias voltage

C. Transition voltage

D. None of the above

109. For the circuit shown below the transistor $a = 0.992$, the value of voltage V_{BC} is

A. 8.51 V

B. 4.47 V

C. 2.16 V

D. 10.23 V

110. A plane electromagnetic wave is travelling in an unbounded, lossless dielectric having $\mu_r = 1$ and $\epsilon_r = 4$. The time average pointing vector of the wave is 5 W/m³. The phase velocity V_P (assuming velocity of light as 3×10^8 m/s) is

A. 3×10^8 m/s

B. 2.5×10^8 m/s

C. 0.5×10^8 m/s

D. 15×10^8 m/s

111. A long, straight wire carries a current I = 100A. At what distance the magnetic field is 1 A/m?

    A. 1.59 m

     B. 0.159 m

    C. 0.0159 m

    D. 15.9 m

112. For a transmission line if $\dfrac{L}{C} = \dfrac{R}{G}$ then which of the following is incorrect?

    A. $Z_0^2 = \dfrac{R}{G}$

    B. The line is called a distortionless line

    C. If a series of pulses are transmitted they arrive undistorted

    D. The line is lossless

113. Check whether the potential function V = A log P + B in cylindrical co-ordinate is a solution of Laplace's equation. A and B are constants

    A. Satisfies

    B. Not satisfies

    C. Can not be concluded

    D. None of the above

114. Find the volume charge density that is associated with the field D = a_rc/m^2.

    A. 1 c/m^3

    B. 0 c/m^3

    C. 2/rc/m^3

    D. r c/m^3

115. In a fluxmeter, the controlling torque is

    A. Produced by weight attached to the moving coil

    B. Produced by spring

    C. Not provided at all.

    D. Provided by crossed coil mechanism

116. Thermistors can be used as

    A. Measurement of thermal conductivity

    B. Vacuum measurements

    C. Measurement of composition of gases

    D. All of the above

117. The value of capacitor C connected across swamp resistance (R) of voltmeter (MI) be

A. $C = L/R^2$

B. $C = LR^2$

C. $C = L^2/R$

D. None of the above

118. Which of the following statistical method can be used for a single sample data?

A. Frequency distribution

B. Uncertainty distribution

C. Standard deviation

D. None of the above

119. In the shown figure, what sis the value of unknown resistor R? The voltmeter reads 4V.
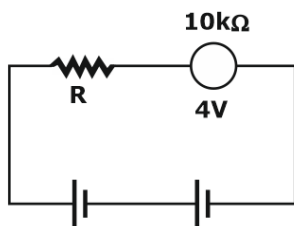
A. 110 KΩ

B. 290 KΩ

C. 134 KΩ

D. 245 KΩ

120. Which of the following instrument is free from hysteresis and eddy current loss?

A. Moving iron instruments

B. PMMC instruments

C. Electrostatic instruments

D. Dynamometer type instruments

121. Match List-I with List-II and select the correct answer using the codes given below:

List-I	List-II
A. Megger	1. Measurement of loss angle in a dielectric
B. Spectrum analyser	2. Measurement of frequency
C. Scherring bridge	3. Measurement of insulation resistance
D. Digital Counter codes	4. Measurement of harmonics

Codes:

  A B C D

A. 1 2 3 4

B. 1 2 4 3

C. 4 3 2 1

D. 3 4 1 2

122. Load flow study is carried out for

A. Fault calculations

B. Stability studies

C. System planning

D. Load frequency control

123. The nero sequence current of generator for line to ground faults is j 3.0 p.u. Then the current through the neutral during the fault is

A. j 3.0 pu

B. j 1.0 pu

C. j 9.0 pu

D. j 0.3 pu

124. Calculate the sag for a span of 200 m if the ultimate tensile strength of conductor is 6000 Kgf. Allow a factor of safety of 2.

A. 1.0 m

B. 1.5 m

C. 2.0 m

D. 2.5 m

125. A generating station has maximum demand of 30 MW, load factor 60% and plant capacity factor of 50%. The reverse capacity of the plant is

A. 5 MW

B. 4 MW

C. 6 MW

D. 10 MW