Reg. No……..… Name:……..……

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: EE 352

Course Name: COMREHENSIVE EXAMINATION (EE)

Maximum marks: 50 Duration : 1 hours

Instructions:

1. ***Each question carries one mark. No negative marks for wrong answers***
2. ***Total number of questions: 50***
3. ***All questions are to be answered. Each question will be followed by 4 possible answers of which only ONE is correct. Mark the most appropriate answer***
4. ***If more than one option is chosen, it will not be considered for valuation.***
5. ***Calculators are not permitted.***

1. Superposition theorem cannot be applied in linear circuits to find out the following variable
   A. voltage B. current C. power D. none of these

2. The source impedance of a non- ideal voltage source is Zs = 6+j 8 Ω and is connected to a resistive load. What should be the load for maximum power transfer.

   A. 6 Ω B. 8 Ω C. 10 Ω D. 14 Ω

3. If there are 4 branches and 3 nodes then number of links in a co-tree are?

   A. 2 B. 4 C. 6 D. 8

4. A three element RLC-series circuit is changed to a parallel combination in which all elements are in parallel. As compared to series mode, the natural frequency (w_n) and damping factor (ξ) for the parallel model will have:

   A. same w_n and same ξ B. different w_n and same ξ
   C. same w_n and different ξ D. different w_n and different ξ.

5. The Laplace transform of a circuit current is $I(s) = (5s^2+2s+6)/[s(s^2+3s+3)]$. The initial value i(o) is

   A. 2 A B. 5A C. 6A D. infinity

6. A two-port network is represented by the following equations,

   $I_1=V_1 - 0.5V_2$, $1_2= -V_1 + V_2$, Z parameters are given by Z=

   A. $Z=\begin{bmatrix}1 & -0.5\\ -1 & 1\end{bmatrix}$, B. $Z=\begin{bmatrix}1 & 2\\ 2 & 1\end{bmatrix}$, C. $Z=\begin{bmatrix}1 & -2\\ -1 & 1\end{bmatrix}$ D. $Z=\begin{bmatrix}2 & 1\\ 2 & 2\end{bmatrix}$

7. The degree of the numerator polynomial and denominator polynomial in a driving point function may differ by?

A. 0 B. 1 C. 0 or 1 D. 2

8. Which statement is true for a voltage divider self-biasing circuit?

A. improvement in Stability factors, B. used for both BJT & JFET
C. can be modified for bias compensation of BJT, D. All the above

9. The drain current I_D for an n-channel JFET at a gate to source voltage V_{GS}= - 1V is 16mA. The pinch off voltage Vp=5V. Determine I_D at V_{GS} = - 2V.

A. 4 mA B. 9 mA C. 6.4mA D. 32 mA

10. Which statement is FALSE for a Class B- push pull amplifier

A. Maximum efficiency is 78.5%, B. No even harmonic distortion,
C. Eliminates cross over distortion, D. None of the above

11. The feedback exists in a common emitter amplifier system with R_E unbypassed (Emitter bypass capacitor is removed) is

A. Current series FB B. Voltage series FB
C. Current shunt FB D. Voltage shunt FB

12. The input offset current of an OPAMP is in the range of

A. nA B. μA C. (0.1-1)mA D. 100mA

13. Which statement given below is true for a Schmitt trigger

i) converts sine wave to rectangular wave, ii) used as memory iii) used as amplifier iv) acts as regenerative comparator

A. i & ii only, B. All, C. i, ii & iv D. ii & iii only

14. Which statement is NOT applicable to slew rate limitation in OPAMPS

A. restriction on signal frequency B. restriction on signal magnitude
C. affects the nonlinear distortion D. affects offset voltages and bias currents

15. A 4-pole dc machine is having double layer lap winding arranged in 80 slots. Winding resistance is 0.2 Ω per conductor. Determine the armature resistance (Ra).

A. 8 ohms B. 4 ohms C. 2 ohms D. 1 ohm

16. The equalizer connections are used for

A. Lap winding B. Wave winding
C. Wave winding with dummy coils D. Not for dc windings

17. DC Series generator is used for

A. charging batteries, B. booster in distribution systems,
C. Arc welding D. Lamp loads

18. Retardation test on dc shunt motor is conducted to determine

A. stray loss only, B. Stray loss and moment of inertia,

C. Temperature rise. D. effect of flux distortion on iron loss

19. The resistance of the transformer referred to low voltage side of a 240/120 V 1–phase transformer with R_1=0.1 ohm and R_2=0.03 ohm is

A. 0.055 ohm B. 0.43 ohm C. 0.22 ohm D. 0.1075 ohm

20. For a 1-phase transformer the maximum regulation occurs at 0.5 pf lagging, then the zero regulation occurs at a power factor equals to……

A. upf B. 0.5 lead C. 0.707 lead D. 0.866 lead

21. Which among the following statement regarding a star-delta 3 phase transformer is not true

A. no problem with third harmonic components
B. unbalanced loads can be handled
C. can operate this connection in parallel with delta-delta
D. there is a 30 Degree phase shift between Secondary to Primary phase voltages

22. A 4 bit pattern that will produce the same pattern when 2's complement is taken.

A. 0001 B. 0010 C. 0100 D. 1000

23. The logical expression F=A +$\bar{A}$B can be simplified to

A. F=AB, B. F=A+B C. F= 1 D. F= $\bar{A}$ +B

24. In a one-digit BCD adder, the number of bits in the output is

A. 3 B. 4 C. 5 D. 6

25. If D-FF is modified with switch-tail ring counter connection, the circuit becomes

A. SR FF, B. D FF C. JK FF D. T FF

26. The number of Flip Flops required to build Mod-13 counter is

A . 2 B. 3 C. 4 D. 5

27. The capacity of a Memory chip is 8192 Bytes. The number of address lines required are

A. 11 B. 12 C. 13 D. 14

28. The resistor corresponding to the LSB of a 4-bit Weighted resistor DAC is 64 K ohms. Then the value of resistor assigned to MSB will be

A. 512 k ohm B. 64 k ohm C. 16 k ohm D. 8 k ohm

29. The usual spans with R.C.C. poles are

A. 30-50 m, B. 50-80 m, C, 80-100 m, D. 300-500 m

30. Which one is not an advantage of bundle conductors in transmission lines:

A. Increased surface area
B. Inductance reduces and capacitance increases

C. Improvement in SIL and reduction in corona loss
D. Increase in surrounding voltage gradient

31. The surge impedance of a 100 km long underground cable is 100 ohms. For a 50 km long cable it will be

A. 25 ohms B. 50 ohms C. 100 ohms D. 200 ohms

32. Bulk power transfer is done through HVDC line because of

A. reduced line power losses B. reduced harmonics
C. low cost of devices, D. simple and cheaper protection

33. Buchholz relay is commonly used for protection of

A. Feeders B. Transformers C. Generators D. bus bars

34. Mho relay is normally used for the protection of

A. Long transmission line B. short line C. Generators D. Transformer

35. In a simple series mass-damper-spring (M-B-K) system the natural frequency is given by

A. $\sqrt{(K/M)}$ B. K/M C. $\sqrt{(M/K)}$ D. $\sqrt{(B/M)}$

36. For a second order system with damping factor $\xi=0$, the maximum overshoot (Mp) and resonance peak (Mr) will be

A. Mp = 100%, Mr = 100% B. Mp =100%, Mr = infinity,
C. Mp = 0, Mr = 100% D. Mp = 0%, Mr =100%

37. The steady state error for unit step input applied to ufb system with $G(s)= 5/[s^2(s+2)]$ is

A. infinity B. 40 C. 0.825 D. 0

38. The breakaway point in the root locus of the given transfer function $G(s)H(s) = k(s+3)/s(s+2)$ will be at

A. Complex conjugates B. two –ve real axis points
B. Only one break away point D. one in RHP and one in LHP

39. For a stable system GM in dB and PM in degrees should be

A. both +ve B. GM +ve. PM -ve C. GM -ve. PM +ve D. both –ve

40. Phase angle of the system with $G(s) = e^{-s} / (s+1)$, at w =1 rad/s will be…

A. $+ 12^0$ B. $- 45^0$ C. $- 102^0$ D. -180^0

41. The total derivative of the function 'xy' is

A. $xdy+ ydx$ B. $xdx+ ydy$ C. $dx+ dy$ D. $dxdy$

42. For the differential equation $\frac{dy}{dt}$ + 5y=0 with $y(0)$ =1 the general solution is

A) e^{5t} B) e^{-5t} C) $5e^{-5t}$ D) none of these

43. The radial component of velocity for a particle moving in a circular path is

A) zero B) radius itself C) variable D) none of the above

44. In which Quadrant the HP comes above XY line and VP comes below XY line for orthographic projection?

A) First Quadrant B) Second Quadrant C) Third Quadrant D) Fourth Quadrant

45. The force applied on a body of mass 100 kg to produce an acceleration of 5 m/S^2 is

A) 20 N B) 100 N C) 500 N D) None of these

46. Which was the major green building rating system developed by TERI

A) GRIHA B) LEED C) BREEAM D) CASBEE

47. Which stage is directly responsible for the technical functioning of the product

A) engineering function B) research function C) manufacturing function D) commercial function

48. The first full-scale and usually fully functional forms of a new design is called

A) Model B) prototype C) rapid prototype D) design attribute

49. The Air Pollution and Control Act, popularly known as the 'Air Act' was passed for the first time in US in

A) 1955 B) 1999 C) 2004 D) 2015

50. Probability of a product successfully operation for a specific period of time is called

A) reliability B) durability C) conformance D) serviceability

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE COMPREHENSIVE EXAMINATION, MAY 2019

Course Code: EE352

Course name: COMPREHENSIVE EXAM (EE)

Max. Marks: 50 Duration: 1Hour

Instructions: ***(1) Each question carries one mark. No negative marks for wrong answers***
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PART A- COMMON COURSES

1. The infinite series $\sum_{n=1}^{\infty} \frac{1}{n^p}$

a) Converges if $p < 1$ b) Converges if $p > 1$ c) Converges if $p = 1$ d) Diverges if $p > 1$

2. The Wronskian of $\cos x$ and $\sin x$ is

a) 0 b) $cos^2x - sin^2x$ c) $2 \cos x \sin x$ d) 1

3. The equivalent stiffness of two springs of stiffness s1 and s2 joined in series is

a) s1s2/(s1+s2) b) (s1/s2)/(s1+s2) c) s1+s2 d) s1s2

4. A bullet of mass 0.03kg moving with a speed of 400m/s penetrates 12cm into a fixed block of wood. The average force exerted by the wood on the bullet will be

a) 10kN b) 20kN c) 0kN d) 15kN

5. Which among the following is not a Functional constraint?

a) Overall Geometry b) Forces Involved c) Quality control d) Materials to be used

6. A structured planning method used to evaluate weakness, strength ,opportunities and threats of design:

a) SWOT analysis b) Design analysis c) WOST analysis d) Matrix design

7. Eutrophication of water bodies is caused by the presence of

a) excessive dissolved oxygen b) Excessive dissolved CO_2 c) phosphorous and nitrogen nutrients d) Algae

8. A major advantage of Pyrolysis in converting biomass to energy is

a) its heating to 1000^0 F b) that Carbon Dioxide is not produced c) the Oxygen generated as the by-product d) the absorption CO_2 during the process

9. When the projectors are parallel to each other and also perpendicular to the plane, the projection is called

a) Perspective projection b) Oblique projection c) Isometric projection d) Orthographic projection

10. In AutoCAD, to obtain parallel lines, concentric circles and parallel curves; _____ is used

a) Array b) Fillet c) Copy d) Offset

PART B- CORE COURSES

11. Self-bias provides

a) Stable Q point b) High input impedance c) Large voltage gain d) High base current

12. What is the range of an FET input impedance?

a) 10Ω to 1kΩ b) 1kΩ to 50kΩ c) 50kΩ to 250kΩ d) 1MΩ to several hundred MΩ

13. The feed back signal in ____oscillator is derived from an inductive divider

a) Hartley b) Colpitts c) Crystal d) Wien bridge

14. Open loop gain of an ideal op-amp is

a) high b) Infinite c) low d) zero

15. A certain differential Amplifier using op-amp, has differential voltage gain of 2000 and common mode gain of 0.2. Determine CMRR in dB

a) 50dB b) 60dB c) 80dB d) 70dB

16. _____ multivibrator is a square wave oscillator

a) Monostable b) Astable c) Bistable d) None of the above

17. Zero crossing detector is basically

a) A Sine wave to square wave converter b) A Square wave to sine wave converter c) A sine wave to triangle wave converter d) A sine wave to ramp voltage converter

18. Two's compliment of given binary number 11010 is

a) 10001 b) 00100 c) 00110 d) 00101

19. Which of the following is true?

(A+B)(A+C) is equal to

a) AC+BC b) AB+C c) A+BC d) AC+B

20. A BCD –to-decimal decoder is

a) A 3-line to 8-line decoder b) A 1-line to 10 line decoder c) A 4-line to 10-line decoder d) Any lines –to 10 line decoder

21. The race around condition occurs in a J-K flip flop when

a) Both inputs are 0. b) Both inputs are 1 c) The inputs are complementary d) Any one of the input

combination is present

22. A shift register can be used for

a) Parallel to serial conversion only b) Serial to parallel conversion only c) Digital time delay only d) All of the above

23. Another name for twisted ring counter is

a) Decade counter b) Synchronous counter c) Johnson's counter d) Universal shift register

24. VHDL Stands for

a) Verilog hardware description language b) Vast hierarchical description language c) VHSIC hardware description language d) VME bus description language

25. Transfer function is applicable to

a) Linear time variant system b) Linear time invariant system c) Nonlinear system d) None of the above

26. A linear time invariant system initially at rest, when subjected to a unit step input, gives a response $y(t)= te^{-t}$,$t>0$. The transfer function of the system is

a) $1/(s+1)^2$ b) $1/s(s+1)^2$ c) $s/(s+1)^2$ d) $1/s(s+1)$

27. For a type 2 system, the steady state error for a unit ramp input is

a) zero b) finite c) infinite d) depends on the system

28. How many asymptotes will the root locus of an open loop transfer function with 3 zeroes and 2 poles have?

a) 1 b) 2 c) 3 d) none of the above

29. The maximum possible negative slope and final slope of the bode magnitude plot of a transfer function with 3 poles and 2 zeroes are respectively (all values in dB/decade)

a) -40, -20 b) -60, -40 c) -60, -20 d) -40, -40

30. Consider a feedback system with gain margin of about 30. At what point does Nyquist plot crosses negative real axis?

a) -3 b) -0.3 c) -30 d) -300

31. The frequency at which phase of open loop transfer function is 180^0 is called

a) Corner frequency b) Cut off frequency c) Phase cross over frequency d) Resonant frequency

32. An ac source of V=50V and f=50 Hz, having an internal impedance of (1+j2) Ω is connected across a load. For maximum power transfer, the load impedance should be

a) (1+ j2) Ω b) (1- j2) Ω c) (2+j4) Ω d) j2 Ω

33. The no. of independent loops for a network with N nodes and B branches is

a) N-1 b) B-N c) B-N+1 d) Independent of number of nodes

34. A parallel combination of two resistors, each of R Ω, is in series with a parallel combination of two capacitors of capacitance C each is fed from a DC source. The time constant of the circuit would be

a) CR b) 2CR c) CR/4 d) CR/2

35. When two coupled coils of equal self inductances are connected in series in one way, the net inductance is 12 mH. When they are connected in the other way, the net inductance is 4 mH. The maximum value of net inductance when they are connected in parallel in a suitable way is

a) 2mH b) 3mH c) 4mH d) 6mH

36. A two-port network is symmetrical if

a) $Z_{12}=Z_{21}$ b) AD-BC=1 c) $Z_{11}=Z_{22}$ d) $h_{12}= - h_{21}$

37. A polynomial q(s) is Hurwitz if

a) q(s) is real when s is real b) q(s) is real and have real roots which are zero or negative c) q(s) has conjugate pair of complex roots d) None of these

38. Choose a conventional source of energy from the following:

a) Nuclear b) Wind c) Solar d) Tidal

39. Transposition of a 3 phase transmission line helps in _____ of the 3 phases

a) To find L and C b) Increasing L and C c) To reduce supply frequency d) Equalizing L and C

40. Pin insulators are normally used up to voltage of about

a) 100 kV b) 66kV c) 33kV d) 250kV

41. HVDC transmission lines are more economical for

a) Long distance transmission b) Short distance transmission c) Interconnected System d) Hybrid System

42. Distance Relays are used for the protection of

a) Generator b) Transformer c) Transmission line d) Bus bar

43. Buchholz relay is used to protect against

a) Internal fault b) External fault c) Rotor fault d) All of the above

44. Select a suitable winding for DC generator for generating large current

a) Progressive wave winding b) Lap winding c) Retrogressive wave winding d) Wave winding

45. The efficiency of a dc machine is maximum when

a) Copper loss = hysteresis loss b) Hysteresis loss = Eddy current loss c) Eddy current loss = Copper Loss d) Constant Loss= Variable Loss

46. Starters are used in DC motors because

a) These motors have low starting torque
b) These motors are not self starting
c) Back emf of these motors is high initially
d) To restrict the armature current at starting

47. Identify the circuit element that stores energy in the electromagnetic field

a) Inductance
b) Condenser
c) Variable resistor
d) resistance

48. Magnetising impedance of a transformer is determined by

a) SC Test
b) OC Test
c) Both (a) and (b)
d) Load Test

49. Satisfactory operation of three phase transformers in parallel requires

a) Same voltage rating, polarity, phase sequence, percentage impedance and vector group
b) Same voltage rating, frequency and vector group
c) Same voltage rating, polarity, frequency and percentage impedance
d) Same voltage rating,frequency and percentage impedance

50. The purpose of providing dummy coil in dc generator is

a) For mechanical Balance
b) To reduce Eddy current loss
c) To reduce Hysteresis loss
d) To increase efficiency of generator

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE COMREHENSIVE EXAMINATION(S), DECEMBER 2019

Course Code: EE352

Course name: COMPREHENSIVE EXAM

Max. Marks: 50 Duration: 1Hour

Instructions: ***(1) Each question carries one mark. No negative marks for wrong answers***
(2) Total number of questions: 50
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PART A- COMMON COURSES

1. The sum of the series $\sum$ – is

   a) _ b) _ c) _ d)

2. The solution of the differential equation is

   a) $y = (A + Bx)e^{2x}$ b) $y = (A + Bx)e^{-2x}$ c) $y = (A + Bx)e^{x}$ d) y

3. The resultant of two equal forces has the same magnitude as either of the forces, then the angle between the two forces is

   a) 120^0 b) 30^0 c) 90^0 d) 60^0

4. Two bodies of masses m_1 and m_2 are dropped from the top of a tower of same height. When these bodies reach the ground, their kinetic energies will be in the ratio

   a) 1 : 2 b) 1: √2 c) 1: 4 d) 1 : 1

5. The top view of a pentagonal prism with axis perpendicular to the vertical plane and parallel to horizontal plane will be a

   a) Pentagon b) Rectangle c) Trapezoid d) Straight line

6. In perspective projection the object is assumed to be kept on which of these planes.

   a) Picture plane b) Horizon plane c) Ground plane d) Central plane

7. Which is the most abundant element available in the atmosphere?

   a) Oxygen b) Nitrogen c) Argon d) Carbon di oxide

8. The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide

   a) Carbon Dating b) Carbon Trading c) Carbon Footprint d) Carbon Factor

9. One of the pins in a 3 pin plug top is bigger than the rest. This is most closely related to design for ‘X’, where ‘X’ is

   a) Assembly b) Manufacturing c) Life cycle Cost d) Environment

10. Which of the following can be most appropriately associated with the design space of a ball?

a) Speed b) Velocity c) Diameter d) Height

PART B- CORE COURSES

11. For a base current of 12µA, what is the value of collector current in Common Emitter Transistor configuration if β_{dc} (current gain) =100

a) 10 µA b) 1 mA c) 1.2mA d) 12mA

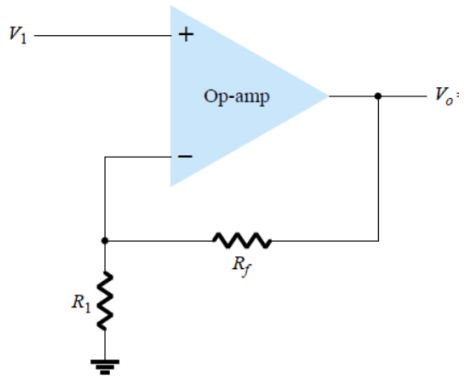
12. Field Effect Transistor (FET) is a _____

a) Current Controlled device b) Conductivity Modulation device c) Negative Conductance device d) Voltage Controlled device

13. Maximum theoretical collector circuit efficiency of class B amplifier is

a) 15% b) 25% c) 78.5% d) 50.5%

14.



Calculate the output voltage, if V_1=2V, R_1=100kΩ and R_f=500kΩ

a) 10V b) 6V c) 12 V d) 15 V

15. How many op amps are present in a typical instrumentation amplifier circuit?

a) One b) Two c) Three d) Four

16. Which of the following oscillator circuit will be suitable for highly stable frequency of oscillation

a) Wien bridge b) RC Phase shift c) LC d) Crystal

17. A common drain amplifier is similar in configuration to which BJT amplifier

a) Common Base b) Common Emitter c) Common Collector d) None of the above

18. Octal equivalent of binary number 01000100111 is

a) 4236 b) 1047 c) 1084 d) 4136

19. The complement of the function F= $(A + \bar{B})(\bar{C} + D)(\bar{B} + C)$ is

a) $\bar{A}B + C\bar{D} + B\bar{C}$ b) $A\bar{B} + \bar{C}D + \bar{B}C$ c) $A\bar{B} + C\bar{D} + BC$ d) AB+BC+CD

20. In which of the following adder circuits is the carry ripple delay eliminated?

a) Half adder b) Full-adder c) Parallel adder d) Carry-look-ahead adder

21. For a flip flop with provisions of preset and clear

a) Preset and clear operations are performed simultaneously
b) While presetting, clear is disabled.
c) While clearing, preset is disabled.
d) Both (b) and (c) are true.

22. The output of a sequential circuit depends on

a) Present inputs
b) Past outputs
c) Both present and past inputs
d) Past inputs

23. The number of flip flops required for Mod 6 asynchronous counter is

a) 2
b) 3
c) 6
d) 4

24. Which type of ADC has the fastest conversion speed

a) Counter-type
b) Flash-type
c) Successive-approximation type
d) Dual-slope type

25. The transfer function of a system is also known as

a) Unit step response
b) Unit impulse response
c) Sine wave response
d) Ramp response

26. Which of the following parameters are dependent on ζ (damping ratio) alone?

a) peak overshoot
b) settling time
c) rise time
d) damped natural frequency

27. The signs of the elements of the first column of a Routh array are as follows - +ve, +ve ,-ve ,-ve. How many roots does the function have on the right half of the s- plane?

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

28. Which of the following is the best method for determining the stability and transient response

a) Root locus
b) Bode plot
c) Nyquist plot
d) None of the above

29. Suppose in a bode magnitude plot, it is observed that at high frequency, the slope is -60dB/decade.
How many asymptotes will the root locus of that transfer function have?

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

30. Due to an addition of pole at origin, the polar plot gets shifted by ___ at $\omega = 0$?

a) -45°
b) -60°
c) -90°
d) -180

31. For a system with double pole at the origin the phase angle is

a) +90
b) +180
c) -90
d) -180

32. The Norton equivalent of a circuit is 10 A in parallel with a resistance of 2 Ω. Then the Thevenin equivalent of the circuit will be

a) 10 A in series with a resistance of 2 Ω
b) 10 V in series with a resistance of 2 Ω
c) 20V in series with a resistance of 2 Ω
d) 5V in series with a resistance of 2 Ω

33. If the number of branches in a network is B, the no. of nodes is N and the number of dependent loops is L, then the number of independent node equations will be

a) N+L-1 b) B-1 c) B-N d) N-1

34. A series combination of R=2 MΩ and capacitor C= 0.2 μF is connected across a 100 V DC source through a switch. The switch is closed at time t= 0 s. The voltage across R at t= 0 s and at t=10 s will be

a) 100 V, 63.2 V b) 0 V, 63.2 V c) 100 V, 36.8 V d) 0 V, 36.8 V

35. Two coils in differential connection have self-inductances of 2mH and 4mH and a mutual inductance of 0.15mH. The equivalent inductance of the combination is

a) 5.7mH b) 5.85mH c) 6mH d) 6.15mH

36. A two port network is defined by the following pair of equations.

$I_1=2V_1+V_2$; $I_2=V_1+V_2$

Its impedance parameters ($Z_{11}, Z_{12}, Z_{21}, Z_{22}$) are given by

a) 2,1,1,1 b) 1,-1,-1,2 c) 1,1,1,2 d) 2,-1,-1,1

37. Cauer and Foster form of realisations are used only for

a) Driving point reactance function b) Transfer reactance function c) Driving point impedance function d) Transfer impedance function

38. A system having connected load of 100kW peak load of 80kW,base load of 20kW, and average load of 40kW, will have a load factor of

a) 40% b) 50% c) 60% d) 80%

39. The tendency of ac to concentrate near the surface of a conductor is known as _____

a) Ferranti effect b) Inductance Effect c) Proximity Effect d) Skin Effect

40. Economic choice of conductor size is obtained from

a) Biot-Savart's Law b) Kelvin's Law c) Kirchhoff's Law d) Faraday's Law

41. On a long high voltage transmission line under heavy load conditions kVAR compensation can be provided by installing

a) Series inductive reactors b) Series Capacitors c) Shunt inductive reactors d) Series resistors

42. Breaking capacity of a circuit breaker is usually expressed in terms of

a) Amperes b) Volts c) MW d) MVA

43. For most reliable distribution supply, the configuration used is

a) Radial Main b) Ring Main c) Parabolic Main d) Balancing Main

44. Select the correct law from the following options which indicates the direction of emf induced as a result of electromagnetic induction

a) Faraday's laws b) Lenz's Law c) Kirchhoff's Law d) Ampere's Law

45. A dc shunt generator delivers 100A at 200V and the resistance of shunt field and armature are 100Ω and 0.01 Ω respectively the generated emf will be ……

a) 205V b) 212V c) 201.02V d) 208V

46. Which of the following DC Motors have the highest starting torque

a) Shunt Motor b) Series Motor c) Cumulative Compound d) Differential Compound

47. Transformer ratings are usually expressed in terms of

a) Volts b) Amperes c) kW d) kVA

48. Sumpner's test is also known as

a) Back to Back test b) Load Test c) Swinburne's test d) None of the above

49. Open delta connection has VA rating of

a) √3 times delta – delta VA rating b) 1/√3 times delta – delta VA rating c) 3 times delta – delta VA rating d) 1/3 times delta – delta VA rating

50. Which machine is having highest efficiency?

a) DC shunt motor b) Transformer c) DC series motor d) Compound motor

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