1. The reciprocal of	resistance is		
A) Susceptance		B) Conductan	Ce and analog and I fo
C) Impedance		D) Reactance	C) Devices have diffus
	same frequency have	opposite phase w	hen the phase angle between
them is		C) 000	D) 0°
A) 180°	B) 360°	C) 90°	D) 0°
	install a capacitor is		to a land of the industries load
A) Very near to i			terminals of the inductive load
C) Far away from	n the inductive load	D) Any where	- Sent bearing the center of
4. The time constar	nt of a series R-C circu		D) 000
A) R/C	B) RC2	C) RC	D) R2C
5. The material whi	ch has a negative tem	perature coefficien	nt of resistance is
A) Aluminium		B) Copper	Marine Hamilton A. St.
C) Brass		D) Carbon	Span (A) Copp.
6. A dependent sou	irce		tel. The surit of made at
	rent source or voltage	source	A MitembedaW (A
B) Is always a v	oltage source	BIC	Ch Ampain simp
C) Is always a c			
D) Neither a cur	rent source nor a volta	ige source	
7. Capacity of a dr	y cell is		
A) Not affected	by the type of discharg	ge	
	supplies current conti		
C) More when i	t supplies current inter	mittently	
D) None of the	above		
8. In a lead acid co	ell, on discharging, bot	h the plates chang	e and become
A) Lead hydrox		B) Lead per	oxide
C) Lead oxide		D) Lead sulp	ohate
High current of using	the order of 100 A can	be measured by a	an ammeter of 0 - 1 A rating by
A) Shunt		B) Capacito	Cr Superparenting of
C) R-C network	cilmental plant a set to	D) Current t	ransformer

	A) More power losses occur in series C) Devices have different current rating	11 (3-6)	All of these	ex to design -
11.	The force of attraction or repulsion between to the square of the distance between the A) Newton's first law			ersely proportional
	B) Faraday's first law of electromagnetic	indu	ction	
	C) Coulomb's first law			
	D) Coulomb's second law			
12	Who discovered the relationship between foundation for the theory of electromagne			that serves as the
	A) Luigi Galvani	B)	Hans Christian Oerste	ed - Amaria
	C) Andre Ampere	D)	Charles Coulomb	
13	. A permanent magnet will not attract		7310	
	A) Copper B) Steel	C	Nickel D)	Aluminium
14	. The unit of magnetomotive force is	E	CA Linear	
	A) Weber/metre	1	Ampere turns/metre	
	C) Ampere turns	D	Weber	Common Co.
15	. Which of the following is a vector quantity			
	A) Flux density	В) Magnetic field intensi	
	C) Magnetic potential	D) Relative permeability	
16	The polarity of induced voltage while a fid A) Independent of the force creating the B) Opposite to the force creating the field	field		
	C) Identical to the force creating the field			
	D) Present only if the force is stationary			
1	7. Comparing superparamagnetic and ferro	omag	netic materials, which	statement is false?
Ige	A) Ferromagnetism is usually more pow	rerful	than superparamagne	tism
	B) Ferromagnetism persists when the m	nagn	etizing field is removed	
	C) Superparamagnetism persists once t	the e	xternal field is removed	mine (A
	D) Superparamagnetism can be though	t of a	as a single-domain part	icle

10. Electrical devices and appliances are not connected in series because

 18. Lower the self inductance of a coil A) More will be the weber turns B) More will be the emf induced C) Lesser the flux produced by it D) Smaller the delay in establishing steady current through it 19. It is difficult to magnetise steel because of its A) High density B) High retentivity C) Low permeability D) High permeability 20. The value of dielectric constant for vacuum is taken as A) 1 B) 0 C) 4 D) 10 21. To reduce the error in voltmeter and ammeter due to friction torque A) The torque weight ratio must be small B) The weight of moving system must be made as large as possible C) The torque weight ratio must be large D) The torque of moving system must be small 22. The controlling torque T_C of a Moving Iron instrument is A) K/θ B) Kθ C) K²θ D) K²/θ 23. Correction factor of wattmeter for lagging load is Cosφ Cosφ Cos(φ - β) D) Cosβ Cosφ Cos(φ + β) D) Cosβ Cosφ Cos(φ + β) D) Cosβ Cosφ Cos(φ + φ) 24. When 3 phase power is measured by 2 wattmeter method one of the wattmeter will rezero power A) If the load power factor is unity B) If the load power factor is less than 0.5 D) If the load power factor is less than 0.5 D) If the load compensation of integrated type energy meter is done by A) Shading band C) Shading loop D) Lag plate 			
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C) If the load power factor is less than 0.5 D) If the load power factor is 0.5 25. Light load compensation of integrated type energy meter is done by A) Shading band B) Breaking magnet		A) If the load power factor is unity	
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A) Shading band B) Breaking magnet		D) If the load power factor is 0.5	
A) Shading band B) Breaking magnet			
	25.	Light load compensation of integrate	ed type energy meter is done by
C) Shading loop D) Lag plate		A) Shading band	B) Breaking magnet
		C) Shading loop	D) Lag plate
^	Λ		

122									
B) (One pres	sure coil	and two	identica	ne current	Committee of the Commit	nsists of	up into	two parts
B) E C) V	echanic Electrical ibrating	al resona resonana type freq	ence type ce type f	e freque	2011 motor				
	Sin A) B) C) D) Ferr A) M B) E C) V	A) Two iden B) One pres C) One pres D) None of the Ferro dynamic A) Mechanic B) Electrical C) Vibrating (A) Two identical pres B) One pressure coil C) One pressure coil D) None of these Ferro dynamic type from A) Mechanical resonate B) Electrical resonate C) Vibrating type free	A) Two identical pressure co B) One pressure coil and two C) One pressure coil and one D) None of these Ferro dynamic type frequency A) Mechanical resonance type B) Electrical resonance type	Single phase electrodynamometer por A) Two identical pressure coils and or B) One pressure coil and two identical C) One pressure coil and one current D) None of these Ferro dynamic type frequency meter is A) Mechanical resonance type frequency B) Electrical resonance type frequency C) Vibrating type frequency meter.	Single phase electrodynamometer power factor A) Two identical pressure coils and one current B) One pressure coil and two identical current of C) One pressure coil and one current coil D) None of these Ferro dynamic type frequency meter is a A) Mechanical resonance type frequency meter B) Electrical resonance type frequency meter C) Vibrating type frequency meter	Single phase electrodynamometer power factor meter co A) Two identical pressure coils and one current coil which B) One pressure coil and two identical current coils C) One pressure coil and one current coil D) None of these Ferro dynamic type frequency meter is a A) Mechanical resonance type frequency meter B) Electrical resonance type frequency meter C) Vibrating type frequency meter	Single phase electrodynamometer power factor meter consists of A) Two identical pressure coils and one current coil which is split B) One pressure coil and two identical current coils C) One pressure coil and one current coil D) None of these Ferro dynamic type frequency meter is a A) Mechanical resonance type frequency meter B) Electrical resonance type frequency meter C) Vibrating type frequency meter	Single phase electrodynamometer power factor meter consists of A) Two identical pressure coils and one current coil which is split up into B) One pressure coil and two identical current coils C) One pressure coil and one current coil D) None of these Ferro dynamic type frequency meter is a A) Mechanical resonance type frequency meter B) Electrical resonance type frequency meter C) Vibrating type frequency meter

28.	The bridge circuit which measur A) Anderson's bridge C) De Sauty's bridge	es self inductance in terms of standard capacitor is B) Owen's bridge D) Maxwell bridge
20	L. Ann.	

29. In a CRO intensity of electron beam is controlled by A) Focusing anode B) Accelerating anode C) Grid D) Electron Gun

30. The primary current in the CT is A) Dependent of the secondary circuit conditions

B) Independent of the secondary circuit conditions

C) Depends upon the secondary burden

D) None of these

31. One complete cycle of alternating quantity is said to be spread over A) 270°

B) π/2 radians

D) 2π radians

32. Amplitude factor of sinusoidal alternating voltage is

B) $\frac{E_m}{E_m/\sqrt{2}}$ C) $\frac{E_m/\sqrt{2}}{E_m}$ A) $\frac{E_m}{E_m/2}$ D) $\frac{E_m/2}{E}$

33. What will be the reading of hot-wire voltmeter if it is connected across the terminal of a generator whose voltage wave form is represented by

V = 100 Sin ωt + 50 Sin 3ωt + 25 Sin 2ωt ?

A) 83

B) 80

C) 81

D) 71

34	The instantaneous respect to the qu	us value of a quantity is antity of reference is	5 Sin (2πft – 1). Then	the phase in degree wit
	A) - 57.3°	B) -90°	C) 47°	D) -56.3°
35.	When pure induction from power supp	tive coil is connected to	an AC supply then the	average demand of powe
	A) Zero	B) Maximum	C) Minimum	D) None of these
36.	The inductive rea A) 3πfL	ectance offered to the the B) 6πfL	nird harmonic compon C) 12πfL	ent of the voltage is D) πfL
37.	The current in a p	bure capacitor leads its B) Full cycle		D) None of these
38.	A) are 240° out of B) are in phase v C) are 90° out of	of phase with each other	rents which are exactly	phase 4 wire star system equal in magnitude but
39.	A) Angle betweenB) Angle betweenC) Angle between	connection system Φ is n phase voltage and line in line voltage and line on line voltage and phase in line voltage and line in line in line voltage and line line in l	e voltage	
40.	For a balanced st A) Z _A /3	ar connected system, In B) $3Z_{\Delta}$	oad impedance per ph C) √3Z _∆	nase Z _y is equal to D) Z _∆ /√3
41.	The efficiency of a A) 5% to 10%	a solar cell is between B) 15% to 20%	C) 25% to 40%	D) 50% to 60%
	The purpose of ea A) To bring it to z C) Both A) and B)		uipment is B) To avoid shock D) None of these	to the operator
1			7-	

43	. Fillers in a lead a	acid battery are provi	ided to			_
	 A) Allow flow of 	gases		Recover acid le	osses through va	pour
	C) Prevent flow	of gases	D)	None of the ab	ove	pour
44	. In which solar en	nergy collector the eff	ficiency is	maximum?		
	A) Evacuated tu	be		Line focusing		
	C) Flat plate			Paraboloid dish	1	
45.	The primary purpour currents to the ear	pose of a grounding	system	is to provide a	uno ises estilencia	path for
	A) High resistan		B)	Low impedance		
	C) High impedar		D)			
46.	Two 12 Volt 60 A	h batteries are conn	ected in	parallol we get	THE STATE OF THE S	
	A) 12 Volt 120 A	h		24 Volt 60 Ah	outp	out.
	C) 24 Volt 120 A	h 10 or betterness e		12 Volt 30 Ah	o de la perupe	
47.	Hydrometer is us	ed to measure the		in a lead a	cid cell.	
	A) Current rating		(B)		of electrolyte	
	C) Power rating	EARNING		Efficiency	or ciconoryte	
48.	The capacity of a	cell increases with	100			
	A) The increase	in plate surface area				
	B) The quantity a	and specific gravity o	f the elec	trolyte		
	C) The porosity of	of the separators				
	D) All of the above	/e				
49.	For	voltages and		body resistance	s will increase the	dearea
	of electrical shock	k to the human body.	Charles and		- *************************************	degree
	A) higher, higher		B)	lower, higher		
	C) higher, lower			lower, lower		
50.	Which of the follo	wing device will not d	operate a	t fault ?		
	A) Isolator			Circuit breaker		
	C) Fuse			MCB		
51.	Melting point of To	ungsten is				
	A) 2400°C	B) 2700°C	C)	3000°C	D) 3400°C	

A

52. One lumen/M ² =	
A) One lux B) Coulom	b C) One candela D) One foot candle
53. The fuse in DC circuit is inserted	n 85
A) Negative line only	B) Positive line only
C) Both negative and positive line	D) Either negative or positive line
54. The unit of solid angle is	
A) Lumen B) Lux	C) Degree D) Steradian
55. Carbon arc lamps are commonly to	O) Triunquint:
A) Street lighting	
	B) Cinema hall lighting D) Domestic lighting
56. The HRC fuses are standardized f	or rated current up to
A) 500 B) 1000	C) 1050
	Total Control of the
57. Current rating of 1.5 mm ² single co	ore copper wire is
A) 5 B) 10	C) 15 Amps.
58. The earth resistance of a domestic	wiring is
A) Less than 5 ohms	
C) Zero ohms	B) More than 5 ohms D) None of the above
Frank Line	
59. The action of a fuse is based on the	effect of the electric current.
A) Magnetic B) Heating	C) Chemical D) None of the above
60. To improving the efficiency of earth	ing by
A) Increase the pipe or plate area	
C) Installing parallel electrodes	B) Increase the depth of the earth pit D) All of the above
	a/are true regarding the functions of yoke in a
 It provides path for the pole flux. 	
II. It provides mechanical support to	the machine
III. It rielps to convert the AC EMF to	DC
IV. It helps in reducing the armature	reaction effect.
A) Only Land II	B) Only i, ii and iii
C) Only i and iv	D) Only ii, iii and iv

A) 4 C) 8

	C) Triangular D) Ramp shaped	
	1. Three pointer starter 2. Four point starter 3. Two point starter A) 1-ii, 2-i, 3-iii C) 1-iii, 2-ii, 3-i	i. DC shunt motor with field control ii. DC shunt motor without field control iii. DC series motor B) 1-i, 2-ii, 3-iii D) 1-i, 2-iii, 3-ii
65	. In case of compound dc machines, the over the shunt field coil is/are A) Convenience in construction B) For better cooling C) To improve commutation D) Both (A) and (B)	reason/reasons for keeping the series field wound
	The main reason for improper comm A) Inductance of armature winding B) Use of interpoles C) Use of compensating winding D) Field flux	
6	is 0.1 ohms, series field winding re 110 ohms, calculate the value of an A) 10 A C) 12 A	or delivers 2.2 kW at 220 V. If armature resistance esistance is 0.2 ohms and shunt field resistance is mature current in amperes. B) 8 A D) 6 A
A		-10-

63. In order to obtain maximum generated EMF in the armature of a dc generator, what should

62. The number of parallel paths in a 4 pole wave wound dc machine is

be the shape of field flux waveform?

B) Sinusoidal waveform

A) Flat topped waveform

68.	Which of the following statements is/are dc shunt motor?	true regarding mechanical characteristic of a
	i. It is the graph between torque and spe	
	ii. It is the graph between armature curreiii. The shape of the characteristic is linea	
	iv. The shape of the characteristics is hyp	perbolic.
	A) Only i and iv	B) Only ii and iii
	C) Only i and iii	D) Only ii and iv
69.	During the no load test on a 200 V, DC shand field resistance of 200 Ω , the armature loss of the motor is	unt motor having armature resistance of 0.1 Ω e current is recorded to be 10 A. The constant
	A) 2000 W	B) 1990 W
	C) 2200 W	D) 2190 W
70.	circuit of the motor without any change in a A) Will remain the same	an additional resistance is introduced in the field applied voltage. The speed of the motor is
71.	If the input supply frequency of a transforme which of the following statements are true i. Core loss gets doubled. ii. Eddy current loss gets doubled. iii. Hysteresis loss reduces.	
	A) Only i and ii	B) Only iii
	C) Only i	D) Only ii
72.	The purpose of using laminations in a tran	nsformer is to reduce
	A) Eddy current loss	B) Hysteresis loss
	C) Copper loss	D) Friction and windage loss
73.	The rotor EMF frequency of a 3 phase ind supply frequency to the motor is 50 Hz. C. A) 6% B) 8%	alculate the percentage slip of the motor. C) 4% D) 5%
٨	20 10 10 10 10 10 10 10 10 10 10 10 10 10	7) 5/9

74	. Which of the following technique cage induction motor ?	s can be used	for speed o	ontrol of three phase so	uirrel
	i. Rotor resistance control.				
	ii. V/f control.				
	iii. Pole changing method.				
	A) Only i and ii	B)	Only i and i		
	C) Only ii	D)	Only ii and	iii is all to equals off.	
75	. Which of the following statemen induction motor?	ts is/are true re	egarding sta	r delta starter of three p	hase
	 At the time of starting the wir steady state speed the windi 				100
	ii. At the time of starting the wir steady state speed the windi				ne
	 iii. It reduces the starting torque delta. 	to one third of	that produc	ced by direct switching i	n
	iv. It increases the starting torqu	ue to three time	es of that pr	oduced by direct switch	ing in
	delta.	libb IIA	BEL	ntmilen okum inunis QC	
	A) Only i and iii		Only ii and		
	C) Only i and iv	NG D	Only ii and	iv and manner lies	
76	5. The number of slip rings in a star on rotor is	connected thre	ee phase all	ernator with the field pro	vided
	A) 3 B) 4	C)	2	D) 5	
77	7. The armature reaction effect in depends on which of the following		alternator o	perating in isolated cor	ndition
	i. Power factor of the load.				
	ii. Speed of the machine.				
	iii. Load current.				
	A) Only i and iii	B)	Only ii and	iii	
	C) Only i	D)	Only iii		
78	Which of the following statement phase synchronous motor?	t/statements are	e true regar	ding damper winding in a	three
	i. Damper winding helps to sta	art the motor.			
	 Current is present in dampe speed. 		the motor	s running at synchrono	us
	iii Current is zero in damner w	inding when th	e motor is r	inning at evnchronous	

speed.
A) Only iii B) Only i and ii C) Only i D) Only i and iii

- 79. The direction of rotation of a single phase induction motor can be reversed by A) Reversing the leads of the supply B) Reversing the leads of main winding C) Reversing the leads of starting winding
- 80. Which of the following can be employed for speed control of universal motors? i. Resistance connected in series to armature.
 - ii. Tappings provided on field winding.
 - iii. Using centrifugal device.
 - A) Only i and iii

D) Either B or C

C) Only ii

- B) Only ii and iii
- D) i, ii and iii
- 81. The power delivered to the load is maximum when the SCR firing angle is
 - A) 90°
 - C) Zero

- B) 180°
- D) Between 90° and 180°
- 82. A UJT has R_{BB} = 15 K ohms, RB₂ = 5 K ohms. Its intrinsic stand off ratio is
 - A) 0.67

- D) 0.33

- 83. The operation of JFET involves
 - A) Recombination
 - B) Flow of minority carriers
 - C) Negative resistance
 - D) Flow of majority carriers
- 84. For half wave controlled rectifier, if firing angle is θ_1 , then average value of output DC voltage is given by

A)
$$V_{dc} = \frac{2V_m}{\pi}(1 + \cos\theta_1)$$

C)
$$V_{dc} = \frac{V_m}{2\pi} (\cos \theta_1 + 1)$$

B) $V_{dc} = \frac{V_m}{\pi} (\cos \theta_1 - 1)$

TRICAL

D)
$$V_{dc} = \frac{V_m}{2\pi} (1 - \cos \theta_1)$$

- 85. A TRIAC is equivalent to two SCRs
 - A) In series
 - C) In parallel
- 86. Which is an example of DIAC?
 - A) NTE 6408
 - C) EddyNCD 3301

- B) In inverse parallel
- D) In inverse series
- B) OptoNCD ILR 1030
- D) BT 136

 A latched up IGBT can be turned off by A) UJT triggering circuit B) Forced commutation of voltage C) Snubber circuit D) Forced commutation of current 	
88. A single phase half bridge inverter have resistance of 5 ohms, the output power A) 2000 watts C) 1000 watts	as input supply voltage of 100 volts. For a load or is equal to (square wave output) B) 500 watts D) 750 watts
89. The internal resistance of an ideal vol A) High C) Zero	D) Very high
A) Battery bank C) Self excited DC generator	b) DC motor D) Alternator
91. The decimal number – 19 is express A) 10010011 C) 11011100	B) 11101101 D) 00110011
92. A(AB+AB) is equivalent to A) AB C) AB	B) AB D) AB
93. In negative logic, logic state 1 correA) Zero voltageC) Lower voltage level	B) More negative voltage D) Negative voltage
94. The most suitable gate for compar A) NAND C) AND	D) OR
95. A feature that distinguishes the JkA) Type of clockC) Present input	(flip flop from the SR flip flop is the B) Clear input D) Toggle condition
	1977

- 96. In a 4 bits weighted resistor D/A converter, the resistor value corresponding to LSB is 64 K Ohms. The resistor value corresponding to MSB will be
 - A) 4 K Ohms
 - B) 64 K Ohms
 - C) 8 K Ohms
 - D) 16 K Ohms
- 97. The disadvantage of counter type A/D converter as compared to comparator type A/D converter is that
 - A) Longer conversion time is required
 - B) The resolution is low
 - C) Its stability is low
 - D) The circuit is more complex
- 98. A divide by 54 counter can be realized by
 - A) 9 numbers of mod 9 counters
 - B) 6 numbers of mod 9 counters
 - C) 9 numbers of mod 6 counter
 - D) one mod 9 counter followed by one mod 6 counter
- 99. A stage in a shift register consists of
 - A) a latch
 - B) a byte of storage
 - C) a flip flop
 - D) four bits of storage
- 100. The purpose of using flux in soldering is to
 - A) Fill up gaps left in a bad joint
 - B) Prevent oxides forming
 - C) Wash away surplus solder
 - D) Increase fluidity of solder metal