

TNEB ECE Model Question Paper 3

1. For a 5Kw DC motor the number of slots per po		umber of slots per pole	8. The unit of electrical conductivity is			
	should be			a)mho/metre	b)mho/Sq.m	
	a)4	b)5		c)ohm/metre	d)ohm/Sq.m	
	c)12	d)16				
			9.	9. The resistance of a 100 W, 200 V lamp is		
2.	Kirchhoff's second law	is based on law of		a)100 ohm	b)200 ohm	
	conservation of			c)400 ohm	d)1600 ohm	
	a)Charge	b)Energy				
	c)Momentum	d)Mass	10.	Which mode of radi	ation occurs in an helical	
				antenna due to smaller dimensions if helix as		
3.	The charge on an electron i	s known to be 1.6*10 ⁻¹⁹	$e 1.6*10^{-19}$ compared to a wave		e length?	
	coulomb. In a circuit the current flowing is 1A. How many electrons will be flowing through the circuit in a second?			a)Normal	b)Axial	
				c)Both a and b	d)None	
	a) $1.6*10^{19}$ b) $1.6*10^{-19}$		11.	Sometimes a reactor i	s connected in series with a	
	c) 0.625 *10 ¹⁹	d)0.625*10 ¹²		transformer to		
				a)Improve regulation		
4.	DC motor yoke is generally	made of		b)Control fault current		
	a)Wood	b)Copper		c)Improve efficiency		
	c)Aluminum	d)Steel		d)Improve power facto	or	
5.	5. Ampere second could be the unit of		12.	12. The transformer noise is mainly because of		
	a)Power	b)conductance		a)Cooling oil	b)Sinusoidal current	
	c)Energy	d)Charge		c)Magnetic flux	d)All of the above	
6.	Two bulbs marked 200 w	att -250 volts and 100	13.	A dipole carriers r.n	n.s current of about 300A	
	watt-250 volts are joined in series to 250 volts supply. Power consumed in circuit is			across the radiation resistance 2 Ω . What would be the power radiated by an antenna?		
	a)33 watt	b)67 watt		a)90KW	b)135KW	
	c)100 watt	d)300 watt		c)180 KW	d)200 KW	
7.	A circuit contains two u	n-equal resistances in	14.	In a transformer iron	n losses vary as of	
parallel		-		voltage	·	
	a)Current is same in both			a)Inverse	b)Inverse square	
	b)Large current flows in lar	ger resistor		c)Square	d)Cube	
	c)Potential difference acro	oss each is same		•	·	
d)Smaller resistance has smaller conductance		15.	15. In a transformer, with change in frequency			



b)Copper losses decrease c)Transformers c)Copper losses remain unchanged d)Synchronous motors d)None 22. Which of the following is usually not the generating voltage? a)Low voltage a)6.6kV b)9.9 kV b)Too much load at starting c)Single phasing a)6.6kV b)9.9 kV c)Single phasing a)10 - 20 ohms b)50-60 ohms c)11 kV d)13.2 kV 17. In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than a)200km b)160km c)100 - 200 ohms d)1000 - 2000ohms 18. Resistivity of a wire depends on a)Length b)Material c)Tors section area d)None 25. When n resistance each of value r are connected in series, tot resistance is 19. The fact that a conductor carries more current on the surface as compared to core, is known as a)Skin effect a)NX b)InX b)Corona c)Permeability d)All of the above 26. The effect of corona is a)Increased reactance c)Increased line is taken a a)AX b)Increased reactance c)Conductors for high voltage transmission lines are suspended from towers a)To reduce vind and snow loads d)All of the above 27. Between two supports due to sag the conductor takes the form of c)To reduce clearance from ground c)Ellipse d)Semi circl	a)Copper losses increaseb)Copper losses decreasec)Copper losses remain unchanged		b)Capacitors c)Transformers		
c)Copper losses remain unchanged d)None d)Synchronous motors 16. If a synchronous motor fails to start, the probable cause could be a)Low voltage 22. Which of the following is usually not the generating voltage? a)Low voltage a)6.6kV b)9.9 kV b)Too mouch load at starting c.)Single phasing a)6.0kV b)9.9 kV c)Single phasing a)10 - 20.0hms b)13.2 kV 17. In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than a)10 - 20.0hms d)1000 - 2000ohms 17. In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than a)100 kV b)60kV c)100 km b)160km c)33kv d)25kV 18. Resistivity of a wire depends on a)Length b)Material c)Cross section area d)None 19. The fact that a conductor carries more current on the surface as compared to core, is known as a)Skin effect a)nX b)mX b)Corona c)Erne effect of corona is a)Increased energy loss b)Increased energy loss b)Increased energy loss b)Increased energy loss b)Increased inductance c)Zn between two supports due to sag the conductor takes the form of a)Catenary b)Triangle c)Ellipse d)Semic rircle 21. Boosters are basicall					
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12. Which of the following is usually not the generating voltage? 13. If a synchronous motor fails to start, the probable cause could be a)Low voltage a)G. 6kV b)9.9 kV a)Low voltage a)G. 6kV b)9.9 kV b)Too much load at starting c)Single phasing a)G. 6kV d)13.2 kV c)Single phasing a)10 – 20 ohms b)50-60 ohms c)Any of the above c)11 kV d)13.2 kV 17. In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than a)100 – 200 ohms d)1000 - 2000ohms 17. In overhead transmission lines the effect of capacitance can be neglected when the length of line is less than a)100 - 200 ohms d)1000 - 2000ohms 18. Resistivity of a wire depends on a)Longth b)Material c)Cross section area d)None a)100kV b)66kV 19. The fact that a conductor carries more current on the surface as compared to core, is known as a)Skin effect b)Corona c)X/n d)n ³ X b)Corona c)Cronductors for high voltage transmission lines are suspended from towers a)To reduce vind and snow loads d)All of the above 20. Conductors for high voltage transmission lines are suspended from towers a)To reduce wind and snow loads c)Croneac clearance from ground b)To increase clearance from ground b)To increase clearance f	d)None				
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 a) To take care of extension in length during summer 21. Boosters are basically a) Inductors a) Inductors a) Semi circle d) Semi circle			a)Catenary	b)Triangle	
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21. Boosters are basically a)Inductorsused are a)3b)5			28. For 66 kV lines the number of insulators discs		
a)Inductors a)3 b)5	21. Boosters are basically		used are		
	a)Inductors		a)3	b)5	



c)8	d)12	36. A triac is equivalent to two SCRs		
		a)In parallel	b)In series	
29increases the stea	dy state accuracy	c)In inverse parallel	d)None	
a)Integrator				
b)Differentiator		37. Which property of an	antenna is likely to be	
c)Phase lead compensat	or	evidenced in accordance	to Reciprocity theorem?	
d)Phase lag compensate	or	a)Equality of impedances		
		b)Equality of directional	patterns	
30. Which of the following	is not the dame as watt?	c)Equality of effective ler	ıgth	
a)Joule/sec	b)Amperes/volt	d)All of the above		
c)Amperes*volts	d)(amperes) ² *ohm			
		38. Voltage communication	circuit can be converted	
31. On which of the fo	llowing factors does the	in to a current communication by interchanging		
sensitivity of a closed lo	pop system to gain changes	the portions of		
and load disturbances d	epend?	a)Diode and capacitor	b)Capacitor & SCR	
a)Frequency	b)Loop gain	c)Inductor and capacitor	d)Capacitor & load	
c)Forward gain	d)All of the above	_	-	
-		39. In a three phase converte	r, the number of notches	
32. Lowest critical frequence	cy is due to pole and it may	per cycle is		
be present origin or n	earer to origin, then it is	a)One	b)Three	
which type of network?		c)Six	d)Nine	
a)LC	b)RL			
c)RC	c)RC d)Any of the above		40. The conduction losses in IGBT is	
		a)More than that of MOSFET		
33. By which of the follow	wing elements, mechanical	b)Lower than that of MOSFET		
translational systems ar	e obtained?	c)Equal to that of MOSFET		
a)Mass element	b)Spring element	d)Equal to that of BJT		
c)Dash pot	d)All of the above			
		41. The input current wavefor	rm of a bridge controller	
34. Force balancing equation	on for elastic element (K) is	rectifier when the load is	perfectly filtered is	
(Where X= displacement	nt)	a)Sine wave	b)Square wave	
a)K d^2X/dt^2	b)K dX/dt	c)Saw tooth wave	d)Trapezoidal wave	
c)K*X	d)None			
,	,	42. A step down choppers car	n be used in	
35. Two six pulse converters used for bipolar HVDC		a)Electric traction	b)Electric vehicles	
transmission system, a	re rated at 1000 MW, + -	c)Machine tools	d)All of these	
200 ky. Find the dc current in the transmission line				
a)500 A	b)5A	43. Storage of 1KB means	the following number of	
c)2500A	d)25A	bytes	2	



	a)1000	b)964		
	c)1024	d)1064		
44.	Which of the following gate is a two level logic			
	gate			
	a)OR gate	b)NAND gate		
	c)EXCLUSIVE OR gate	d)NOT gate		
46.	The binary code of (21.125)	10 is		
	a)10101.001	b)10100.001		
	c)10101.010	d)10100.111		
47.	How ,any Flip-Flops are	required for mod-16		
	counter?			
	a)5	b)6		
	c)3	d)4		
48.	Which of the following sign a)s(t)=cos 2t+cos 3t+cos 5t b) s(t)=exp($j8\pi t$) c) s(t)=exp(-7t)sin 10 πt d) s(t)=cos 2t cos 4t	als is/are periodic?		
49.	If a signal $f(t)$ has energy signal $f(2t)$ is equal to	E, the energy of the		
	a)E	b)E/2		
	c)2E	d)4E		
45.	In case of induction motor, voltage, which of the follow a)Power factor c)Torque	with increase in supply ing increases? b)Slip d)All of the above		
50.	The trigonometric Fourie function of time does not ha a)The dc term b)sine term	r series of an even ve		

- c)Cosine term
- d)Odd harmonic term

- 51. A system with an input x(t) and output y(t) is described by the relation y(t)=t.x(t).This system is a)Linear and time invariant
 b)Linear and time varying
 c)Non linear & time invariant
 d)Non linear and time varying
- 52. Convolution of x(t+5) with impulse function $\delta(t-7)$ is equal to a)x(t-12) b)x(t-2)c)x(t+12) d)x(t+2)
- 53. A system is defined by its impulse response h(n)=2ⁿ u(n-2). The system is a)Stable and causal
 b)stable but not causal
 c)Causal but not stable
 d)Unstable and non causal
- 54. Demodulation is the process of?
 a)Converting digital signals to analog signals
 b)Converting analog signals to digital signals
 c)Dividing the high speed signals in to frequency bands
 d)None
- 55. Which of the following is an important characteristics of LAN?
 a)Application independent interface
 b)Low cost access for low bandwidth channels
 c)Unlimited expansion
 d)Parallel transmission
- 56. Mobile computers and personal digital assistant (PDAs) are the examples of?
 a)Radio broadcasting
 b)Wireless network
 c)Geosynchronous
 d)LAN



- 57. Why was the OSI developed?
 a)Manufactures disliked the TCP/IP protocol
 b)The rate of data transfer was increasing exponentially
 c)Standards were needed to allow any two systems to communicate
 d)None
- 58. To deliver a message to the correct application program running on a host, the _____ address must be consulted?a)Port b)Physical

a)Port	b)Physic
c)IP	d)None

- 59. A network that requires human intervention o route signals is called a ?
 a)Bus network
 b)Ring network
 c)Star network
 d)T-switched network
- 60. A 741-type OP-AMP has a gain bandwidth product of 1Mhz.A non-inverting amplifier using this opamp & having a voltage gain of 20db will exhibit 3db bandwidth of a)50KHz b)100KHz c)1000/17 KHz d)1000/7.07 KHz
- 61. The frequency of the male voice is
 - 1) greater than female voice

2) less than female voice

- 3) equal to the female voice
- 4) double than female voice
- 62. A combination of two or more notes which produces a pleasing effect on the car is called 1) internal 2) concord
 - 3) chord 4) harmony

- 63. The velocity of sound in air is

 340 m/s
 1500 m/s

 64. In Simple Harmonic Motion (SHM), y = 0.01 sin
- 64. In Simple Harmonic Motion (SHM), y = 0.01 sin $\left(20\pi t + \frac{\pi}{6}\right)$, the frequency of oscillation is 1) $\frac{\pi}{3}$ 2) 10 Hz 3) 20π Hz 4) 20 Hz
- 65. Among the following laser sources which source will give visible light radiation?
 - 1) Ruby laser2) Nd YAG laser3) CO2 laser4) He-Ne laser
- 66. Vander Waal's equation of state of a gas is 1) PV = nRT 2) $\left(P + \frac{a}{v^2}\right)(U + b) = RT$ 3) $\left(P + \frac{a}{v^2}\right)(V - b) = RT$ 4) $\left(P - \frac{a}{v^2}\right)(V - b) = RT$
- 67. In a cyclic heat engine operating between a source temperature of 600° C and a sink temperature of 20° C, the least rate heat rejection per kw net output of the engine is
 - 1) 0.460 kw2) 0.505 kw3) 0.588 kw4) 0.650 kw
- 68. In a Carnot's engine, when the working substance rejects its heat to sink, the temperature of the sink 1) increases
 - 2) remains the same
 - 3) decreases

1) $\frac{3}{2}$ RT

- 4) first increases and subsequently decreases
- 69. The translational kinetic energy of gas molecules for one mole of the gas is equal to

2) $\frac{2}{2}$ KJ

EXAMS DAILY

3) $\frac{1}{2}$ RT	$4)\frac{3}{2}KJ$	1) 2 3) 4	2) 3 4) 5		
70. A gas having coefficient ($\mu < 0$ 1) become coole 2) become warr	g a negative joule thompson 0) when throttle will er ner	 77. To find length of stri 1) strlen () 3) string len() 	ing 2) len () 4) str lenth ()		
3) remain at the4) either be cootype of gas	same temperature ler (or) warmer depending on the	78. Gas A at 125 Isothermally and g compressed is entro	Kpa (abs) is compressed. gas B at 100 Kpa (abs) is ppically (r= 1.4) which gas is		
71. In the regenera withdrawn from	tive cycle, port of the steam is the turbine and used in heating	more compressible. $Z = \frac{1}{K} = \frac{-(dv/v)}{dp}$			
the 1) exhaust fan	the 1) exhaust fan		1) 0.008, 0.007143 m ² /KN 2) 0.08, 0.07143 m ² /KN		
2) feed water	2) feed water		3) 0.8, $0.7143 \text{ m}^2/\text{KN}$		
3) steam being (4) all of the above	supplied to the turbine ve	4) None of the above	2		
72 Soft super condu	ictors observe	79. The intensity of pres	79. The intensity of pressure at any point in a liquid at		
1) Meissner effe	ct	1) Pascal's Law	2) Kirchhoff's law		
2) Silsbee's rule		3) Fither of the abov	2) Kirchioff S faw		
3) both (1) and	(2)	5) Entiter of the door			
4)AC Josephsan	's rule	80. The buoyancy depen	80. The buoyancy depends on		
		1) mass of liquid di	1) mass of liquid displaced		
73. At frequencies	around $5 \times 10^{14} \text{H}^2$, the ionic	2) viscosity of the lie	quid		
polarization beco	omes	3) depth of immersio	3) depth of immersion		
1) unity	2) infinity	4) pressure of the liq	uid displaced		
3) zero	4) positive				
		81. In turbulant flow, where the second seco	hich of the following gives the		
74. The band gap of silicon is about 1) 0.8 eV 2) 1.1 eV		exact velocity distrib	oution?		
		1) Logarithmic dist	1) Logarithmic distribution		
3) 0.2 eV	4) 2 eV	2) Blasius equation	_		
75 Dealle and a leaf and a little (1, 1)		3) Prandl's one-seventh power			
1) 6/	$\frac{1}{2} 120$	4) Power law with in	idex varying		
3) 80	4) 44	82 $E(x,y) = y^2 + yyz + z$ fin	$df_{0} t(1 1 1)$		
0,00	'/ ''	$\begin{array}{c c} 02.1^{\circ}(x,y) - x + xyz + z \lim \\ a)0 \end{array}$	h(1,1,1,1)		
		u)O	0/1		

c)3

d)-1

76. How many views' thus memory exist in Pentium memory management



	83. The gradient of a fur velocity vector of the lev a)True	action is parallel to the el curve b)False	3) first column eleme4) none of these90. Find the eigen values	onts of A = $\begin{bmatrix} 1 & 0 & 0 \\ 2 & 8 & 0 \end{bmatrix}$
	84. Maximize the function x constraint xy=36a)0c)8	+y-z=1 with respect to the b)-8 d)Nomaxima exists	1) 1, 8, 3 3) 4, 5, 6 91. Particular integral for	$\begin{bmatrix} 2 & 0 & 0 \\ 3 & 1 & 3 \end{bmatrix}$ 2) 3, 4, 2 4) 1, 1, 2 $(D^2 - 4D + 4) y = \cos 2x \text{ is}$
	 85. The span of a Astroid is and y axes equally. Then z=x+y along the asteroid a)Increases 	increased along both the x n the maximum value of :	1) $\frac{\sin 2x}{4}$ 3) $\frac{\cos 2x}{8}$ 92. Particular integral for	2) $\frac{-\sin 2x}{8}$ 4) 0 $(D^2 - 4D + 13) y = e^{2x} \cos 3x$
	b)Decreasesc)Invariantd)The scaling of Astroid86. If f(a) equals to f(b) in m	is irrelevant ean value theorem, then it	is 1) xsin3x 3) $\frac{xe^{2x} \sin 3x}{6}$	$2) \frac{x \sin 3x}{6}$ $4) \frac{xe^{2x}}{6}$
	becomes a)Lebniz theorem b)Rolle's theorem c)Taylor series of a funct d)Leibnit'x theorem	tion	 93. Solution of (xD2 + D 1) y = A log x + Be^x 3) y = A log x + B 94. Find the particular int 	(b) $y = 0$ is (c) $y = Ae^{x} + B$ (c) $y = e^{x} + e^{-x}$ (c) $d^{2}y = xe^{x}$
	87. If $f(t)=sqrt(t)$, then its laby a) $1/2$	aplace transform is given b)1/s	1) $e^{x}(x+1)$ 3) $e^{x}(x-2)$	$2) e^{x} (2x-1)$ $4) e^{x} (x^{2} + 2x)$
	c)sqrt(π)/2sqrt(s) 88 If α and β are the eigen v	d)Does not exist	95. If $\vec{r} = x\vec{i} + y\vec{j} + zk$ and 1) r^2 3) 0	$1 \mathbf{r} = \mathbf{\bar{r}} \text{ then } \nabla \mathbf{r}^* \text{ is}$ $2 1 4 \mathbf{r}^2 \mathbf{\bar{r}}$ $4) 1$
	the matrix whose eigen v 1) $\begin{bmatrix} 38 & -50 \\ -50 & 138 \end{bmatrix}$ 3) $\begin{bmatrix} 0 & 150 \\ 138 & 43 \end{bmatrix}$	ratues or $l-1$ 5]. Form ratues are α ³ and β ³ . 2) $\begin{bmatrix} 70 & 60 \\ 138 & 38 \end{bmatrix}$ 4) $\begin{bmatrix} 27 & -1 \\ -1 & 125 \end{bmatrix}$	 96. If A and B are irrotati 1) solenoidal 3) 1 	onal then $\overline{A} \times \overline{B}$ is 2) irrotational 4) 0
89. For a diagonal matrix the eigen values are1) the main diagonal elements		97. The circulation of \overline{F} r $\overline{F} = y\overline{i} + z\overline{j} + x\overline{k}$ and 0 0 is	bound the curve C where C is the circle $x^2 + y^2 = 1$, z =	
	2) first row elements		1) π	2) - π



3) 0

98. If $\overline{F} = ax\overline{i} + by\overline{j} + cz\overline{k}$ where a, b, c are constants, then $\iint_S \overline{F} \cdot \hat{n}$ ds where S is surface of a unit sphere is

1) (a + b + c)2) P (a + b + c)3) $\frac{4\pi}{3}(a + b + c)$ 4) 0

99. Which of the following is a vector quantity?1) temperature2) distance

3) mass

4) momentum

100. The force of friction between two bodies is contact

1) depends upon the area of the contact

2) is always normal to the surface of their contact

3) depends upon the relative velocity between their

4) depends upon the velocity of the body



