13. A 4 pole, lap wound, DC generator has a useful flux of 0.07 Wb per pole. Calculate the generated e.m.f. when it is rotated at a speed of 900 r.p.m. with the help of prime mover. Armature consists of 20 slots each having 20 conductors.
A) 840V B) 420V
C) 210V D) 21V

14. The number of parallel paths in a 8 pole lap wound DC generator is
A) 2 B) 16
C) 8 D) 4

15. A 4 pole, lap wound DC motor drawing an armature current of 20A has 360 conductors. If the flux per pole is 0.015 Wb then the gross torque developed by the armature of motor is
A) 10.23 Nm B) 15.56Nm
C) 17.17Nm D) 19.08Nm

16. Alternator works on the following principle
A) Self and mutual induction B) Mutual induction
C) Faraday's law of electromagnetic induction D) None of these

17. Which one of the following statements is true?
A) 3 phase induction motor converts direct current electrical energy into mechanical energy
B) 3 phase induction motor converts alternating current electrical energy into mechanical energy
C) 3 phase induction motor converts mechanical energy into alternating current electrical energy
D) 3 phase induction motor converts mechanical energy into direct current electrical energy

18. The part of the 3 phase induction motor which is a hollow cylindrical core having slots in its inner surface to house windings is termed as:
A) stator B) rotor
C) shaft D) brush

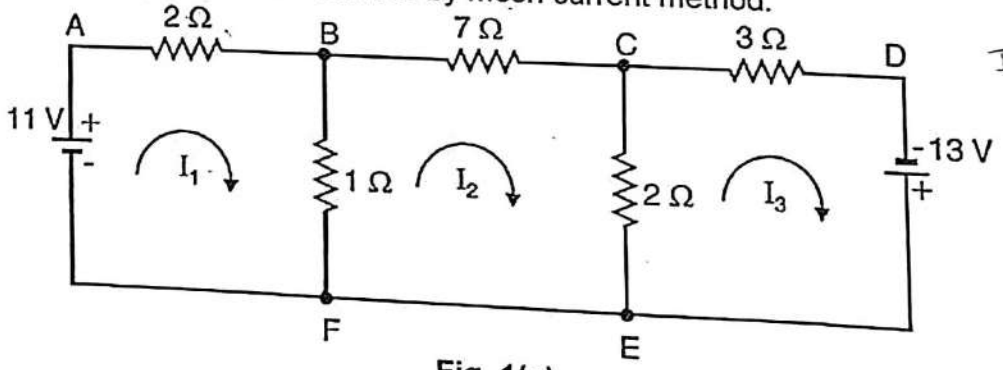
19. Fusing factor is defined as the ratio between
A) maximum fusing current and rated voltage B) maximum fusing current and rated current
C) minimum fusing current and rated current D) minimum fusing current and rated voltage

20. The objective of earthing or grounding is
A) to provide as low resistance possible to the ground
B) to provide a high resistance possible to the ground
C) to provide flow of positive, negative and zero sequence current
D) none of these

PART - B: DESCRIPTIVE ANSWER QUESTIONS

Unit – I – 8

		Marks	BT*	CO*	PO*
1. a)	In the network shown in Fig. 1(a), find the magnitude and direction of current in the various branches by mesh current method.				



$I_1 = 0.5\,A$
$I_2 = 1.714\,A$
$I_3 = -10.66\,A$

Fig. 1(a)

b)	Explain the relationship between the line and phase quantities in a star connected three phase system with required phasor diagrams. Give the equation for power in the three-phase system in terms of the line quantities.	08	L*3	1	2
		08	L2	2	1

2.	a)	Define average and RMS value of an alternating quantity. Derive an expression for RMS value considering a sinusoidal alternating voltage in terms of peak value.	08	L2	1	1
	b)	A coil having a resistance of 10Ω and an Inductance of 35mH is connected to 230V, 50Hz supply. Calculate (i) the Impedance and the circuit current (ii) phase angle (iii) power factor (iv) power consumed.	08	L3	2	2
3.	a)	Explain the terms phase and phase difference for sinusoidally varying alternating voltage using suitable demonstrations.	04	L2	1	2
	b)	Discuss how an alternating quantity is represented in the phasor form.	04	L1	1	1
	c)	Two wattmeters connected to a 3-phase motor indicate the total power input to be 12kW. The power factor is 0.6. Determine the readings of each wattmeter.	08	L3	2	2

Unit – II

4.	a)	Define the coefficient of self-inductance and coefficient of mutual inductance. Explain the terms self-induced emf and mutually induced emf.	05	L1	3	1
	b)	List the advantages of an autotransformer over two winding transformers.	03	L1	3	1
	c)	A 240V, 4 pole shunt motor running at 1000 r.p.m. gives 15HP with an armature current of 50A and field current of 1A. The armature winding is wave connected and has 540 conductors. Its resistance is 0.1Ω and drop at each brush is 1V. Find (i) Useful torque, (ii) Total torque, (iii) Useful flux per pole.	08	L3	4	3
5.	a)	In a 75 KVA, single phase transformer the iron and full load copper losses are 500W &1000W Find (i) Efficiency at 0.8 p.f lagging (ii) The load at which maximum efficiency occurs, (iii) Max efficiency.	08	L3	3	3
	b)	Derive the emf equation of an alternator. Give the equation for Frequency of the induced e.m.f.	08	L2	4	1
6.	a)	With a neat sketch, explain the working principle of a single-phase transformer. Derive its emf equation.	08	L2	3	1
	b)	A 4-pole lap wound shunt generator supplies to 50 lamps of 100 watts, 200V each. The field and armature resistances are 50Ω and 0.2Ω respectively. Allowing a brush drop of 1V at each brush, calculate the following: (i) Armature current, (ii) Current per path, (iii) Generated e.m.f., (iv) Power output of DC armature.	08	L3	4	2

Unit – III

7.	a)	Explain the construction and principle of operation of a 3 Phase Induction Motor.	06	L2	5	1
	b)	The frequency of the supply applied to 4-pole Induction Motor is 50Hz and that of the rotor induced emf is 1.5Hz. What is the Slip and at what speed the motor is running?	06	L3	5	2
	c)	What is an electric fuse? How does it function?	04	L1	5	1
8.	a)	Draw Torque-Slip characteristics of three phase Induction Motor and explain the same.	06	L2	5	2
	b)	List the advantages and disadvantages of conduit wiring.	04	L1	5	1
	c)	Explain the need of earthing for electrical appliances. With the neat sketch explain the pipe earthing.	06	L2	5	1

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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First Semester B.Tech. (CBCS) Degree Examinations

December 2022

EE1001-1 – BASIC ELECTRICAL ENGINEERING

Duration: 3 Hours | Max. Marks:100

Note:

*1) Part – A: Multiple Choice Questions: Answer all **Twenty** questions in the **OMR Sheet** provided. Each question carries equal marks.*

*Part – B: Descriptive Answer type Questions: Answer **Five full** questions choosing **Two full** questions from **Unit – I & Unit – II each** and **One full** question from **Unit – III.***

2) Assume missing data suitably.

PART - A: MULTIPLE CHOICE QUESTIONS — 20 Marks

1. **In the case of mesh analysis, the equations in each loop is written by applying**
   A) KVL
   B) KCL
   C) both KCL and KVL
   D) None of these
2. **While calculating voltage using nodal analysis, it was found that the voltages at nodes V_1 & V_2 were -5V & -3V respectively. Then, the direction of current between those two nodes would be**
   A) from V_2 to V_1
   B) from V_1 to V_2
   C) none of these
   D) cannot predict
3. **Peak factor is defined as ratio of _____ of the alternating quantity.**
   A) Maximum value / RMS value
   B) RMS value / Maximum value
   C) RMS value / Average value
   D) Average value / RMS value
4. **If the instantaneous value of current in a circuit is represented using the equation, $i = 100\sin 120\pi t$ amperes, its RMS value is given by _____**
   A) 100 A
   B) $100\sqrt{2}$ A
   C) $100\sqrt{3}$ A
   D) $100/\sqrt{2}$ A
5. **For a certain load, if the apparent power is 195.2 VA and the reactive power is 125 VAR, then the true power is _____**
   A) 70.2 W
   B) 320.2 W
   C) 150W
   D) Data is insufficient
6. **For a three phase, three wire system, the two Wattmeter read 4000 watts and 2000 watts respectively. Then, the power factor of the circuit is _____**
   A) 1
   B) 0.5
   C) 0.866
   D) 0.6
7. **In a star connected three phase AC circuit _____**
   A) $V_{ph}=\sqrt{3}V_L$; $I_L = I_{ph}$
   B) $V_L = \sqrt{3}V_{ph}$; $I_L = I_{ph}$
   C) $V_L=V_{ph}$; $I_L =\sqrt{3}I_{ph}$
   D) $V_L = \sqrt{2}\, V_{ph}$; $I_L = I_{ph}$
8. **Which of the following statements is not the definition of power factor (pf)?**
   A) pf=cos of the angle between voltage & current
   B) pf=resistance / impedance
   C) pf=active power / apparent power
   D) pf=apparent power / active power
9. **The rating of a transformer is specified in _____**
   A) kW
   B) kVAR
   C) HP
   D) kVA
10. **Turns ratio of the transformer is directly proportional to_____**
    A) Resistance ratio
    B) power ratio
    C) Voltage ratio
    D) Not proportional to any terms
11. **The full-load iron loss of a transformer is 3200 W. At 75% of full load, the iron loss will be _____**
    A) 3200W
    B) 6400W
    C) 1800W
    D) 5600W
12. **Transformer core is generally made of _____**
    A) silicon steel
    B) aluminium
    C) copper
    D) wood

b) Define root mean square value of an alternating quantity. Derive an expression for RMS value of an alternating current. 6 L3

c) Explain the method of measuring 3 phase power using two wattmeters. 8 L2

Unit – II

4. a) A transformer has primary coil with 1200 turns and secondary coil with 1000 turns. If the current in the primary coil is 4 Ampere, then what is the current in the secondary coil? 8 L3

b) With neat diagram explain the principle of operation of DC Motor. 6 L2

c) From the fundamentals, derive the EMF equation of a DC generator. 6 L3

5. a) Derive the EMF equation of single phase Transformer. 6 L3

b) A transformer has a primary coil and a secondary coil with the number of turns are 100 and 1000. Input voltage is 230 V. What is the output voltage? 6 L3

c) Explain the principle of operation of Synchronous Motor. 8 L2

6. a) Derive the condition for maximum efficiency of a single-phase transformer. 6 L2

b) Explain different losses occurring in transformer when it is excited by AC source. 6 L2

c) An 8-pole wave connected DC generator has 1000 armature conductors and flux/pole 0.035 Wb. At what speed must it be driven to generate 500 V? 8 L3

Unit – III

7. a) With neat schematic diagram and vector diagram, explain working of capacitor start type single phase induction motor. 7 L2

b) Explain the necessity of Starter for 3 Phase Induction Motor. 6 L2

c) What is meant by earthing? With neat diagram explain plate earthing. 7 L2

8. a) Explain the concept of rotating magnetic field in three phase induction motor. 7 L2

b) With neat diagram explain concealed conduit wiring. 6 L2

c) Explain the importance of Fuse and MCB in domestic wiring. 7 L2

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

(An Autonomous Institution affiliated to VTU, Belagavi)

First Semester B.E. (Credit System) Degree Examinations

April - May 2022

21EE104 – BASIC ELECTRICAL ENGINEERING

tion: 3 Hours | Max. Marks: 100

*Note: Answer **Five full** questions choosing **Two full** questions from **Unit – I & Unit – II** each and **One full** question from **Unit – III.***

	Unit – I	Marks	BT*	CO*	PO*
a)	Find the current through each branch of the network shown in Fig. 1a. Use mesh analysis.				

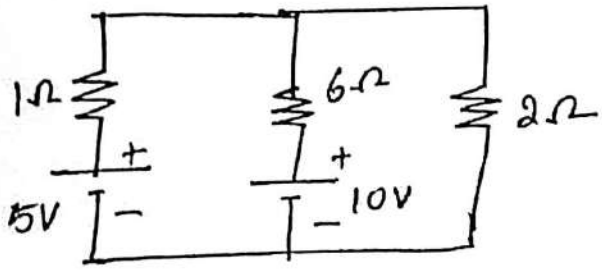

Fig. 1a

		8	L*3	1	1,2
b)	With neat circuit diagram and waveforms derive the relationship between voltage and current in a RL circuit. Also derive the expression for power consumed.	6	L2	2	1,2
c)	A coil of resistances 8 Ω and inductance 15mH is connected in series with a capacitor of capacitance 150μF, across a supply of 200V, 50Hz. Calculate (i) impedance of the circuit (ii) current (iii) power consumed.	6	L3	2	1,2
a)	A sinusoidal varying alternating current of frequency 50 Hz has a value of 15 sin(314t-30°) amperes. Determine the i) peak value of the current, ii) Average value of the current, iii) RMS value of the current, and iv) phase angle.	6	L3	1	1,2
b)	Explain the terms Average value, RMS value, Form factor, Peak factor of sinusoidally varying voltage and current.	6	L2	1	1,2
c)	A voltage of 177V is applied to a series circuit consisting of a resistor, inductor and capacitor. The respective voltage across these components are 170V, 150V and 100V and current is 4A. Find the power factor of the circuit.	8	L3	2	1
a)	For the circuit in Fig. 3a below, find voltages Va, Vb and Vab				

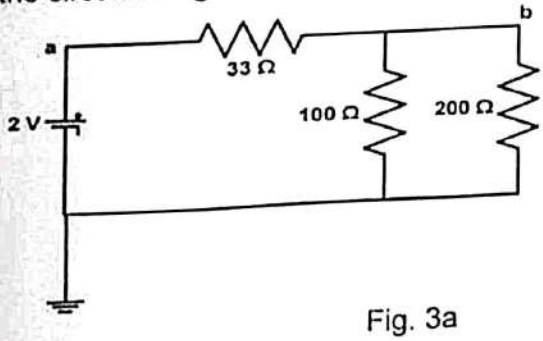

Fig. 3a

		6	L3	1	1,2

P.T.O.

c) Two impedances $Z_1=(10+j15)\ \Omega$ and $Z_2=(6-j8)\ \Omega$ are connected in parallel. If the total current of the combination is 15A, what is the power taken by each branch? — 8 L3

Unit – II

4. a) State and explain (i) Faraday's Laws of Electromagnetic Induction (ii) Lenz Law. — 6 L2
   b) Show that an e.m.f induced in primary $E1=4.44\Phi_m f N_1$ in a single phase transformer. — 7 L2
   c) A 4 pole DC motor has lap connected armature winding. The flux per pole is 30 mWb. The number of armature conductors is 250. When connected to 230 V DC supply, it draws an armature current of 40 A. Calculate the back e.m.f and the speed with which motor is running. Assume armature resistance is 0.6 Ω — 7 L3

5. a) Explain the characteristics of DC Shunt motor — 6 L2
   b) In a 50 kVA, 1100/220 V single phase transformer the iron and full load copper losses at full load are 350W and 425W respectively. Find (i) Efficiency at full load unity p.f (ii) The load at which maximum efficiency occurs iii) Maximum efficiency — 8 L3
   c) A 16 pole star connected alternator has 144 slots and 10 conductors per slot. The flux per pole is 30 mWb and the speed is 375 rpm. Find the frequency, the phase and line EMFs. Assume $K_p = 1$ and $K_d = 0.096$. — 6 L3

6. a) Write a note on applications of synchronous motors. — 4 L1
   b) Two identical coils A and B of 1000 turns each lie in parallel planes such that 80% of the flux produced by one coil links with the other. A current of 5 A flowing in coil A, produces a flux of 0.05 mWb in it. If the current in coil A changes from +12 A to -12 A in 0.02 seconds, calculate i) mutual inductance ii) emf induced in coil B. — 8 L3
   c) With suitable notations, derive the expression for EMF induced in an alternator. — 8 L2

Unit – III

7. a) With relevant circuit diagram and truth table, explain three-way control of lamp. — 6 L2
   b) A 3 Phase Induction Motor has 6 poles and runs at 960 r.p.m. on full load. It is supplied from an alternator having 4 poles and running at 1500 rpm. Calculate the full load slip and frequency of the rotor currents of the Induction motor. — 6 L3
   c) Why earthing is required? With a neat diagram, explain pipe earthing. — 8 L2

8. a) With necessary phasor diagram, prove the existence of rotating magnetic field in airgap of three phase induction motor. — 10 L2
   b) Mention the precautions to be taken to prevent electric shocks. — 6 L1
   c) Explain the necessity of Fuse. — 4 L2

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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First / Second Semester B.E. (Credit System) Degree Examinations

Supplementary Examinations - September 2022

20EE104 / 17EE105 – BASIC ELECTRICAL ENGINEERING

uration: 3 Hours

Max. Marks: 100

*Note:1) Answer **Five full** questions choosing **Two full** questions from **Unit – I & Unit – II each** and **One full** question from **Unit – III.***

2) Assume missing data if any.

Unit – I

		Marks	BT*	CO*	PO*
1. a)	Using mesh analysis, find current through each branch of the network shown in fig. 1a.				

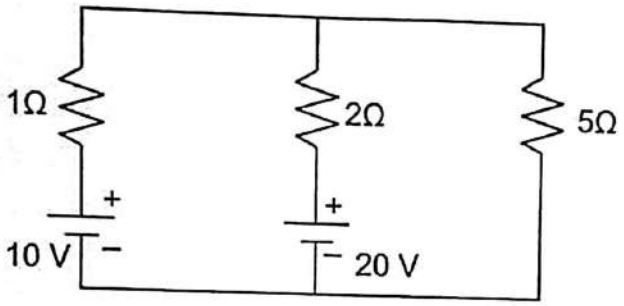
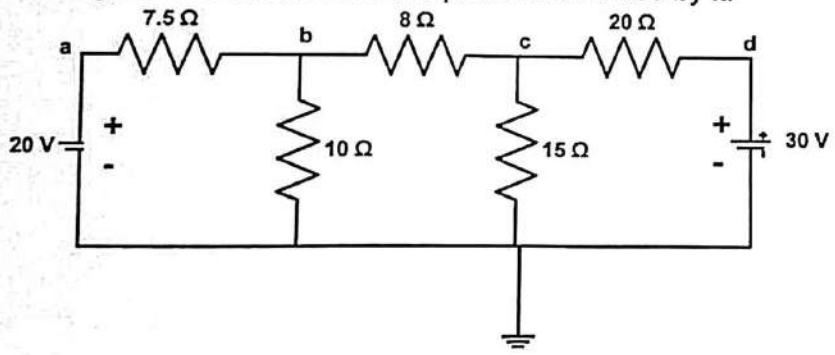


Fig 1 a.

b)	Prove that the average power consumed by a pure inductor is zero with the necessary waveforms and phasor diagram.	6	L*1	1	1,2
c)	Derive an expression for RMS value of a sinusoidal voltage.	7	L2	2	1,2
		7	L2	1	1,2
2. a)	Explain the terms Average value, RMS Value and Instantaneous value for an AC.	6	L2	1	1,2
b)	Using mesh analysis, find voltage drop across 8Ω resistor in the circuit given below. Also find the power consumed by it.				



c)	A coil of resistance 8 Ω and inductance 15mH is connected in series with a capacitor of capacitance 150μF, across a supply of 200V, 50Hz. Calculate i) impedance of the circuit ii) current iii) power consumed.	8	L3	1	1,2
		6	L3	2	1,2
3. a)	Show that the current in a RC circuit leads voltage by an angle Φ. Show the necessary waveforms and phasor diagrams	6	L2	2	1,2
b)	An AC circuit consists of a pure resistance of 10Ω and is connected to a supply of 230V, 50 Hz. Calculate the (i) current (ii) power consumed and (iii) equations for voltage and current.	6	L2	2	1,2

P.T.O.

5.	a)	Explain the principle of operation of D.C motor. What is the significance of back emf?	6	L
	b)	Derive the characteristics of D.C. series motor.	6	L
	c)	A single phase transformer working at 0.8 power factor has an efficiency of 94 % at both three fourth full load and full load of 600 kW. Determine the efficiency at half full load, unity power factor.	8	L
6.	a)	Explain the principle of operation of synchronous motor.	6	L
	b)	A 3 phase, 16 pole alternator has a star connected winding with 144 slots and 10 conductors per slot. The flux per pole is 30 mWb sinusoidally distributed. Find the phase and line voltages if the alternator is driven at 375 r.p.m. Given K_d=0.96, K_p = 1.	6	L
	c)	Differentiate between salient pole and non salient pole synchronous generator.	8	L

Unit – III

7.	a)	Explain the principle of operation of three phase induction motor.	7	L1
	b)	Draw and explain torque slip characteristics of an induction motor.	6	L2
	c)	Explain with neat diagram pipe earthing provided for domestic installation.	7	L3
8.	a)	Draw the circuit diagram and truth table of a lamp controlled at two different places.	6	L1
	b)	Write explanatory notes on Fuse and Circuit breaker employed for domestic wiring.	7	L1
	c)	A 4 pole, 50 Hz induction motor has a slip of 1% at no load. When operated at full load the slip is 2.5%. Find the change in speed from no load to full load.	7	L2

BT* Bloom's Taxonomy, L* Level; CO* Course Outcome; PO* Program Outcome

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First / Second Semester B.E. (Credit System) Degree Examinations

September - October 2022

21EE104 - BASIC ELECTRICAL ENGINEERING

Duration: 3 Hours | Max. Marks: 100

*Note: Answer **Five full** questions choosing **Two full** questions from **Unit – I & Unit – II each** and **One full** question from **Unit – III.***

			Marks	BT*	CO*	PO*
		Unit – I				
1.	a)	Define the following with respect of sinusoidal alternating quantity. (i)Time period (ii) frequency (iii) instantaneous value (iv) Amplitude (v) peak to peak value (vi) cycle.	6	L*1	1	1,2
	b)	Illustrate with necessary waveforms and phasor diagram that the average power consumed by a pure capacitor is zero.	6	L2	2	1,2
	c)	Find the voltage across resistance R in the network shown in Fig. 1c by mesh analysis. All resistances are in ohms.				

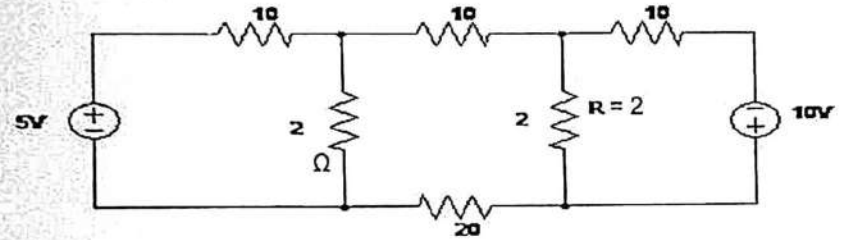

Fig. 1c

			8	L3	1	1,2
2.	a)	Derive the expression for the average value and rms value of sinusoidal varying alternating current.	6	L2	1	1,2
	b)	An alternating current varying sinusoidal with a frequency of 50 Hz has an rms value of 20 A. (i) Write down the equation for the instantaneous value of current. (ii) Find the value at the instant 0.0125 sec, after passing through a +ve maximum value and (iii) At what time measured from the +ve maximum value will the instantaneous current be 14.14 A.	6	L3	1	1,2
	c)	A series RLC circuit is composed of 10 ohms resistance, 16mH inductance and 150 μF capacitance. A voltage 100 volts at 50 Hz frequency is applied to the circuit. Determine the current and V_R, V_L and V_C. Find Power consumed by the circuit. Draw the vector diagram.	8	L3	2	1,2
3.	a)	Define real power, reactive power and apparent power in a single phase ac circuit.	6	L1	2	1,2
	b)	Derive the relationship between line and phase values of balanced three phase delta connected load.	6	L2	2	1,2
	c)	Two wattmeters are used to measure power input to a three phase balanced circuit. What would be the reading of each wattmeter if i) $\Phi=60^0$ ii) $\Phi=30^0$ iii) $\Phi= 0^0$ and iv) $\Phi=90^0$.	8	L3	2	1,2
		Unit – II				
4.	a)	Derive the emf equation of single phase transformer and obtain complete transformation ratio.	6	L2	3	1,
	b)	Explain B-H curve with neat diagram.	6	L1	3	1,
	c)	A six-pole, lap-wound 400 V series motor has following data: No. of armature conductors = 920, flux/pole = 0.045 Wb, total motor resistance = 0.6 Ω, iron and friction losses = 2kW. If current taken by the motor is 90 A, find i) total torque ii) useful torque at the shaft iii) power output.	8	L3	4	1,

P.T.O.

b)	The armature of a four-pole d.c. generator has 47 slots, each containing six conductors. The armature winding is wave-connected, and the flux per pole is 25mWb. At what speed must the machine be driven to generate an emf of 250V?	6	L3
c)	A three-phase, star-connected synchronous generator, driven at 900 rpm, is required to generate a line voltage of 460 V at 60 Hz on open circuit. The stator has two slots per pole per phase and four conductors per slot. Calculate: (a) number of poles (b) useful flux per pole.	8	L3

Unit – V

a)	Deduce an expression for frequency of rotor current in induction motor.	6	L3
b)	With a neat diagram explain the working principle of fluorescent lamp.	6	L1
c)	If a six-pole induction motor supplied from a three phase 50Hz supply has a rotor frequency of 2.3Hz, calculate: (a) percentage slip (b) speed of the rotor in revolutions per minute.	8	L3
a)	An induction motor has four poles and is energized from a 50 Hz supply. If the machine runs on full load at 2 percent slip, determine the running speed and frequency of the rotor currents.	6	L3
b)	Define earthing and explain the necessity of earthing.	6	L2
c)	Justify the statement "single phase induction motor is not a self-starting machine". Explain the technique to overcome the limitation.	8	L3

om's Taxonomy, L* Level

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Unit – II

3. a) Derive the relation between RMS value and maximum value of a sinusoidal alternating voltage/current. 6

   b) Define the following with respect to alternating quantity: (a) instantaneous value (b) frequency (c) time period (d) amplitude 6

   c) A 15Ω, non-reactive resistor is connected in series with a coil of inductance 0.08 H and negligible resistance. The combined circuit is connected to a 240 V, 50 Hz supply. Calculate: (a) reactance of the coil (b) impedance of the circuit (c) current in the circuit (d) power factor of the circuit 8

4. a) From fundamentals, deduce the relation for power in a RC series circuit. Also show the necessary phasor diagram. 6

   b) A coil having a resistance of 20Ω and an inductance of 0.15H is connected in series with a 100μF capacitor across a 230 V, 50 Hz supply. Calculate: (a) current through the coil (b) voltage across the coil. 6

   c) A coil, having a resistance of 20Ω and an inductance of 0.0382H, is connected in parallel with a circuit consisting of a 150μF capacitor in series with a 10Ω resistor. The arrangement is connected to a 230 V, 50 Hz supply. Determine the current in each branch and the total supply current. 8

Unit – III

5. a) With a neat diagram explain the working of a dynamometer type wattmeter. 6

   b) Explain briefly the principle of operation of transformer and show that the voltage ratio of primary and secondary is equal to turns ratio. 6

   c) Three coils are connected in delta to a three-phase, three-wire, 400 V, 50 Hz supply and take a line current of 5 A, 0.8 power factor lagging. Calculate the resistance and inductance of the coils. 8

6. a) With the aid of phasor diagram, obtain relation between line and phase values of voltage in a three phase star connected system. 6

   b) The primary winding of a single-phase transformer is connected to a 230 V, 50 Hz supply. The secondary winding has 1500 turns. If the maximum value of core flux is 0.00207Wb, determine: (a) number of turns on the primary winding (b) secondary induced voltage (c) net cross-sectional core area if the flux density has a maximum value of 0.465T. 6

   c) With a neat sketch explain the working of single phase energy meter. 8

Unit – IV

7. a) With a neat sketch explain the construction of DC machine. 6

   b) Explain the essential difference between cylindrical type and salient type rotor. 6

   c) A d.c. shunt motor runs at 900 rpm from a 480 V supply when taking an armature current of 25 A. Calculate the speed at which it will run from a 240 V supply when taking an armature current of 15 A. The resistance of the armature circuit is 0.8Ω. Assume the flux per pole at 240 V to have decreased to 75 per cent of its value at 480 V.

8. a) Derive an expression for emf equation of an alternator.

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First / Second Semester B.E. (Credit System) Degree Examinations

Make up / Supplementary Examinations - July 2017

16EE105 – BASIC ELECTRICAL ENGINEERING

ıtion: 3 Hours | Max. Marks:

*Note: Answer **Five full** questions choosing **One full** question from **each Unit.***

Unit – I

		Marks	BT*
a)	For the network given in Fig. Q1.a, calculate the current through 40 Ω resistor using mesh analysis.		

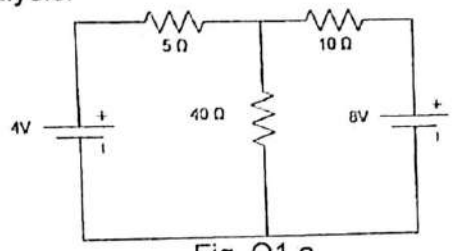

Fig. Q1.a

		6	L*3
b)	State and explain Faraday's laws of electromagnetic induction.	6	L2
c)	For the network shown in Fig.Q1.c find the value of R_L to obtain maximum power. Also calculate the maximum power in R_L.		

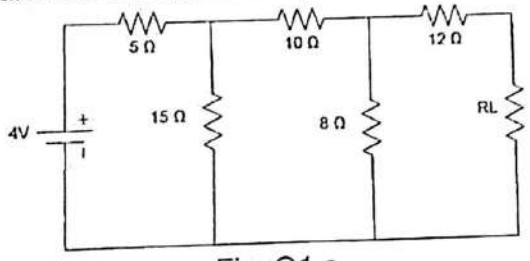

Fig. Q1.c

8 L3

Unit – II

a)	List the similarities and differences between electric and magnetic circuits.	6	L1
b)	A solenoid 1m in length and 10cm in diameter has 5000 turns. Calculate inductance and energy stored in magnetic field when current of 2A flows in the solenoid. Assume relative permiability of 1.	6	L3
c)	For the circuit shown in Fig. Q2.c, calculate the current flowing through 18 Ω resistor using the principle of Superposition.		

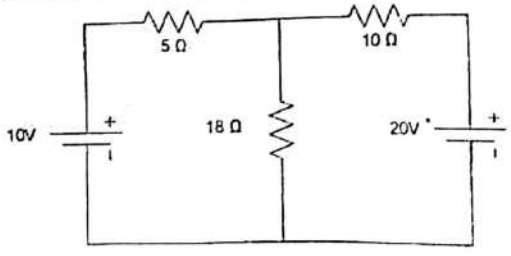

Fig. Q.2c

8 L3