RGPV	(DIPL) BHC	OMA W OPAL	/ING)	OBE CURRICU THE COU	LUM FO RSE	DR	FORM	AT- 3	Sheet No. 1/4		
Branch		ELECTR	ICAL ANI	ELECTRONICS ENGINEER	ING	Se	mester	1	11		
Course	Code	301/684	40	Cours	se Name			D C Ma al Transf	achines nd ormers		
Course	Outco	ome 1	Describe constructional details of DC machine, explain working principle and calculate performance of DC generator						Marks		
Learnin	g Outo	ome 1	Descril princip their a	be various parts of DC m le of DC generator, class oplications. <i>(Cognitive d</i> e	achine, exp sify DC gene omain)	olain v erator	vorking and	10	12		
Cc	ontent	S	•	 Construction of DC machine: Parts - materials and their functions, armature windings. DC generator: Working principle, armature reaction, commutation, interpoles, compensating winding, classification and applications. 							
Method	of Asse	essment	Extern	xternal : End Semester Theory Exam - Pen paper test							
Learnin	g Outo	ome 2	Derive emf equation and calculate induced emf, losses & efficiency of DC generators. (Cognitive domain)						8		
Cc	ontent	S	•	 Emf equation, losses & efficiency of DC generators. Numerical problems related to emf, losses and efficiency. 							
Method	of Asse	essment	Internal: Mid Semester Exam 1 - Pen paper test & Assignment								
Learnin	g Outo	ome 3	Plot the magnetization and internal characteristics of DC shunt generator. (<i>Psychomotor & affective domain</i>)						7		
Co	ontent	s	•	Magnetization and inte	rnal charac	terist	ics of DC sh	iunt gene	rator.		
Method	of Asse	essment	Interno	l: Performance of Task,	observatio	n &Viv	va Voce.				
Learnin	g Outo	ome 4	Plot th (Psych	e load characteristics of omotor domain)	DC shunt g	enera	tor.	8	10		
Co	ontent	s	•	Load characteristic of D	C shunt ge	nerato	or.				
Method	of Asse	essment	Extern	al: End Semester Practico	al Exam - P	erforn	nance of To	isk & Vivo	a Voce		
Course	Outco	ome 2	Select type of DC motor for a given application, apply speed control methods and conduct tests of DC motors.					Teach Hrs	Marks		
Learning Outcome 5			motors. Explain working principle of DC motor, classification, applications and describe construction, working and applications of Brushless DC motor. (Cognitive domain)						7		

Contents	 Principle of operation, back emf and its significance equation, classification of DC motors. 	e, torque								
Method of Assessment	Construction, working and applications of Brushless DC motor ternal: Mid Semester Exam 1 - Pen paper test & Assignment plain performance characteristics, starting methods of									
Learning Outcome 6	Explain performance characteristics, starting methods of DC motors and calculate back emf, torque, speed, losses and efficiency.(<i>Cognitive domain</i>)	10	12							
Contents	 Characteristics and starting methods of DC motors Necessity of starters, construction & working of the four-point starter. Speed control of DC shunt and series motor: Flux a control method. Numerical related to back emf, torque, speed, loss 	ree point nd Armat es and eff	and ure iciency.							
Method of Assessment	External : End Semester Theory Exam - Pen paper test									
Learning Outcome 7	Apply field and armature control methods to vary speed of DC shunt motor. (Psychomotor domain)	8	10							
Contents	 Field and armature control methods of DC shunt ar 	nd series r	notor.							
Method of Assessment	External: End Semester Practical Exam - Performance of To	isk, Viva N	/oce.							
Learning Outcome 8	Perform Swinburne and brake test on DC motor. (Psychomotor & affective domain)	6	8							
Contents	Swinburne's test on DC shunt motor.Brake test on DC series motor.									
Method of Assessment	Internal: Performance of Task, observation & Viva Voce.									
Course Outcome 3	Classify types of single phase transformer and determine its performance by conducting various tests.	Teach Hrs	Marks							
Learning Outcome 9	Describe construction, explain working principle, derive emf equation and classify single phase transformer. (Cognitive domain)	6	8							
Contents	 Construction of transformer: Parts-materials and the Principle of operation, emf equation, transformation name plate rating. Types of transformer: Shell type and core type, ste down, distribution and power transformer. 	neir funct on ratioar p up and s	ions. nd step							
MethodofAssessment	Internal: Mid Semester Exam 2- Pen paper test & Assignment									
Learning Outcome 10	Draw & explain equivalent circuits, phasor diagrams and determine efficiency & voltage regulation of single phase transformer. (<i>Cognitive domain</i>)	10	14							
Contents	 Equivalent circuits and phasor diagrams. Losses, efficiency, condition for maximum efficiency efficiency and voltage regulation. 	y, Allday								

	Numerical problems.		
Method of Assessment	External : End Semester Theory Exam –Pen paper test		
Learning Outcome 11	Conduct various tests of single phase transformer and perform parallel operation of two single phase transformer. (<i>Psychomotor domain</i>)	12	15
Contents Method of Assessment	 Perform polarity test on a single phase transformer Perform open circuit & short circuit test on single p transformer and determine voltage regulation and Perform parallel operation of two single phase transformer External: End Semester Practical Exam - Performance of Tag 	r. phase efficiency psformers psk &Viva	ı. Voce.
Course Outcome 4	Compare and illustrate various types of 3-phase transformer.	Teach Hrs	Marks
Learning Outcome 12	Compare single unit of three phase transformer with bank of 3 single phase transformers and sketch the different types of connections of 3-phase transformers including vector groups. (Cognitive domain)	10	12
Contents	 Bank of 3 single phase transformers, single unit of t transformer. Connections, vector groups, Scott and open delta c 	three pha	se n.
Method of Assessment	External : End Semester Theory Exam - Pen paper test		
Learning Outcome 13	Explain need and condition of parallel operation of three phase transformer and describe criteria for selection of distribution and power transformer. (Cognitive domain)	6	7
Contents	 Need and conditions of parallel operation of three transformer. Cooling methods and criteria for selection of distritransformer and power transformer as per-IS: 10028 (Part-1)-1985. 	phase	
Method of Assessment	Internal: Mid Semester Exam 2 - Pen paper test & Assignm	ent	
Course Outcome 5	Select special purpose transformers for various applications	Teach Hrs	Marks
Learning Outcome 14	Describe constructional features and working principles of various special purpose transformers. (Cognitive domain)	10	12
Contents	 Single phase and three phase auto transformers: Convorking principle. Instrument transformers: Construction and working transformer & Potential transformer. Isolation transformer: Constructional features Single phase welding transformer: Constructional features 	onstruction g of Curre eatures.	on and

	Pulse transformer: Constructional features.		
Method of Assessment	External - End Semester Theory Evam - Den namer test		
Wethou of Assessment	Externul : End Semester meory Exam - Pen paper lest	r	1
Learning Outcome	State applications of different type of special		
15	purpose transformers.	6	8
Contents	Applications of-		
	 Single & three phase auto transformers. 		
	 Instrument transformers. 		
	 Isolation transformer. 		
	 Single phase welding transformer and 		
	Pulse transformer.		
Method of Assessment	External: End Semester Theory Exam - Pen paper test		

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RGPV (DII BI	PLOMA WI HOPAL	NG)	OBE CRR THE	FORMAT-3		Sheet No. 1/6				
Branch	ELECTR	ICAL AI	ND ELECTRONICS E	NGINEERING	Sen	nester		3		
Course Cod	e 302/6841		Course Name	Electrical and E Measurin	Electr 1g Ins	onics M trumen	easure ts (EEN	ments IMI)	and	
Course O	utcome 1	Iden	Identify various type of measuring instruments Teach Hrs						arks	
Learning (Outcome 1	Expla (Cog	Explain fundamentals of measuring instruments (Cognitive domain) 7 10							
Cont	ents	• Me • Sta • Ca	 Measurement: Significance, units, fundamental quantities and standards. Static and dynamic characteristics of instruments, types of errors. Calibration: Need and procedure. 							
Method of A	Assessment	Inter	mal: Assignment a	nd viva voce						
Learning (Outcome 2	Class	Classify measuring instruments (Cognitive domain) 6 9							
Cont	ents	• Sta • Ca • Cla abs inc	atic and dynamic c libration: Need an assification of Instr solute and second licating, recording	haracteristics, type d procedure. ruments: Null and c ary instruments, ar ; and integrating in	es of e deflec nalog s strum	rrors. tion type and digit ients.	e instru tal instr	nents, uments	S,	
Method of A	Assessment	Exte	rnal: End semeste	r theory examinatio	on (Pe	en paper	test)			
Learning (Outcome 3	Calib doma	Calibrate given measuring instruments (Psychomotor domain)						6	
Cont	ents	 To perform calibration and calculation of errors for Ammeter and Voltmeter To perform calibration and calculation of errors for Wattmeter. 								
Method of A	Assessment	Internal: Performance of given task and viva voce								

RGPV (D	BHC	OMA WI	NG)	OBE CRR THE	ICULUM FO	R	FORM	ат-3	Sh No	eet 5. 2/6	
Branch			Elec	trical Engineerin	ıg	Semester 3					
Course Co	ode	302/6841		Course Name Electrical and Electronics Measurements and Measuring Instruments (EEMMI)							
Course Outcome	2	1	Use mea	different types of suring current, v	measuring instru oltage and freque	imen ncy.	ts for	Teac Hrs	h	Marks	
Learning	g Ou	tcome 4	Expla and t	Explain basics of electrical measuring instruments and their construction (Cognitive domain)710							
Сот	nten	its	• Bas • Ele Ele • Cos • Fre	sics of measuring i ectrical measuring ectrodynamometer nstruction of Instr equency meter: Co	instruments. instruments: Cons r, Moving iron and ument transforme nstruction of West	tructi Induc rs and on an	on of PM tion type l Tong te d Reson	IMC me e instru ester. ance ty	eter, mei pe n	nts. neter.	
Method of	f Ass	sessment	Inter	nal: Mid semester	-I theory examinat	ion (P	'en pape	r test)			
Learning	; Ou	tcome 5	Ident expla	Identify use of electrical measuring instruments and explain their working (Cognitive domain)79							
Сот	nter	ıts	• Ele Ele • Wo • Fre Ext CT Sin	ectrical measuring ectrodynamometer orking of instrume equency meter: Op tension of range of and PT. nple numerical pro	instruments: Oper r, Moving iron and nt transformers. peration of Weston f Ammeter and Vol oblems.	ation Induc and R tmete	of PMM tion type cesonanc r using s	C meter e instru ce type shunt, n	, mei met nult	ıts er. iplier,	
Method of	f Ass	sessment	Exte	rnal: End semester	theory examination	on (Pe	en paper	test)			
Learning	; Ou	tcome 6	Extend the range of instruments for given requirement (Psychomotor domain)69								
Сот	Contents			• To measure current and voltage using C.T. and P.T. for extension of instrument range.							
Method of	f Ass	sessment	Inter	Internal: Performance of given task and viva voce							

RGPV (D	BHC	OMA WI	NG)	OBE CRR THE	ICULUM FOI COURSE	R	FORM	ат-3	Sheet No. 3/6		
Branch			Elec	ctrical Engineerin	g	Sen	nester		3		
Course Co	ode	302/6841		Course Name	Electrical and E Measurin	lectr g Ins	onics M trumen	easure ts (EEN	me 1Ml	nts and ()	
Course Outcome	3	1	Use mea	Use different types of measuring instruments for Teach Marks measurement of power, energy and power factor. Hrs							
Learning Outcome 7			Expland e	ain construction of energy measureme	f instruments used ent (Cognitive domai	in po n)	wer	7		10	
Contents			• Dy • Sin fea • Dy (bl	 Dynamometer type Wattmeter: Construction. Single phase and three phase electronic energy meter: Constructional features (block diagram). Dynamometer type power factor meter and digital power factor meter (block diagram). 							
Method of	f Ass	essment	Internal: Mid semester-II theory examination (Pen paper test)								
Learning	g Ou	tcome 8	Make powe	Make use of various instruments for measurement of power, energy and power factor (Cognitive domain)1014							
Сот	nten	ıts	 Po Dy ext Sir pri Dy (bl Syr 	 Power measurement using Voltmeter - Ammeter method. Dynamometer type Wattmeter: Working, errors, compensations and extension of range of Wattmeter using CT and PT. Single phase and three phase electronic energy meter: Working principle and constructional features (block diagram). Dynamometer type power factor meter and digital power factor meter (block diagram) Synchroscope: Working principle and application. 						; and [.] meter	
Method of	f Ass	essment	Exte	rnal: End semester	theory examinatio	on (Pe	en paper	test)			
Learning	; Ou	tcome 9	Use o quan	of given instrumen itities (Psychomotor	t for measurement and affective domain	of elen)	ectrical	10		14	
Contents			 Measurement of P.F. by Ammeter, Voltmeter and Wattmeter method. Measurement of 3-phase power by two Wattmeter method and follow standard safety norms. Demonstration and measurement of energy by digital Energy meter. 								
Method of	f Ass	sessment	Exte	rnal: Performance o	f given task and Obse	ervatio	on / viva	voce			

RGPV (I	DIPI BH	.OMA WIN OPAL	IG)	OBE CRR THE	ICULUM FOI COURSE	R	FORM	RMAT- 3		neet o. 4/6	
Branch			Elec	ectrical Engineering Semester						3	
Course Co	ode	302/6841		Course Name	Electrical and E Measurir	Electr 1g Ins	onics M trumen	easure ts (EEN	easurements and ts (EEMMI)		
Course Outcome	4	1	Mea brid	sure circuit paraı ges.	meters using DC a	nd A	С	Teac Hrs	h	Marks	
Learning	g Ou	tcome 10	Appl (Cog	y various methods nitive domain)	used to measure r	esista	ince	8		11	
Со	onte	nts	 Me Lo Me Hig Eat 	 Measurement of resistance Low resistance: Kelvin's double bridge. Medium resistance: Voltmeter-Ammeter method, Wheatstone bridge. High resistance: Megger and Ohm meter. Earth resistance: Earth tester. 							
Method o	of As	sessment	Exte	rnal: End semester	theory examinatio	on (Pe	en paper	test)			
Learning	g Ou	tcome 11	Use of AC bridges for measurement of inductance, capacitance and frequency (Cognitive domain) 7 9								
Со	onte	nts	 Me An Me ph Me 	easurement of self- derson bridge (No easurement of capa asor diagram) easurement of freq	inductance: Maxwo phasor diagrams). acitance: De-Sauty's uency by Wien's br	ell's b s brid ridge.	ridge, H ge & Scł	ay's bri nering b	dge rid	e, ge (No	
Method o	of As	sessment	Exte	rnal: End semester	theory examinatio	on (Pe	en paper	test)			
Learning	g Ou	tcome 12	Meas (Psyc	sure given electrica homotor domain)	al circuit paramete	rs		8		12	
Со	onte	nts	 Measurement of low resistance by Kelvin's Double bridge. Measurement of medium resistance by Wheatstone bridge. Measurement of insulation resistance by Megger. Measurement of inductance by Maxwell's bridge. 								
Method o	of As	sessment	External: Performance of given task / viva voce								

RGPV (I	DIPL BH	.OMA V OPAL	/ING)	OBE CRR THE	ICULUM FOI COURSE	R	FORMAT-3		Sł N	1eet o. 5/6		
Branch			Elec	trical Engineerin	g	Sen	nester			3		
Course Co	ode	302/684	1	Course Name	Electrical and E Measurir	Electr 1g Ins	onics M trumen	easurements and ts (EEMMI)				
Course Outcome	5	1	Apply e measur	electronic and dig rement of various	gital instruments f s electrical quanti	for ties.		Teac Hrs	h	Marks		
Learning	g Ou	tcome 1	3 Expl meas (Cog	Explain working of oscilloscope and utilize it for measurement of various electrical quantities 69 (Cognitive domain)								
Со	nte	nts	Sir Ca ger Us dif Dig	 Single & dual trace CRO: Basic block diagram, specification & working, Cathode ray tube, electrostatic deflection, vertical amplifier, time base generator, horizontal amplifier. Use of CRO: Measurement of voltage, time period, frequency & phase difference (Lissajous patterns). Digital Storage Oscilloscope (DSO): Plack diagram and functioning 								
Method o	of As	sessmen	t Exte	External: End semester theory examination (Pen paper test)								
Learning	g Ou	tcome 1	4 Use of meas (Cog	Use of electronic and digital instruments for measurement of various electrical quantities 69 (Cognitive domain)								
Со	nte	nts	 Elean Dig Dig Dig 	ectronic Voltmeter d Rectifier type vo gital LCR meter: Bl gital Voltmeter: Bl gital frequency me	: Block diagram an ltmeter. ock diagram and fu ock diagram and w ter: Block diagram	d fund inctio orkin; and f	ctioning ning. g of ram unctioni	of TVM p type I ng.	, FE DVN	:TVM 1.		
Method o	of As	sessmen	t Exte	rnal: End semester	theory examination	on (Pe	en paper	test)				
Learning	g Ou	tcome 1	5 Perfo	Perform measurement of voltage, frequency and phase difference by oscilloscope (Psychomotor domain)69								
Со	Contents			 Use of CRO for measurement of voltage, frequency and phase difference. Demonstration of digital storage oscilloscope. 								
Method o	Method of Assessment			rnal: Performance o	f given task and viva	voce						

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	9780000279744	
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3	A Text Book of Electrical Technology Vol-I (Basic	Theraja B. L. and Theraja A. K.
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	Delhi, ISBN : 9789385676017	
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RGPV	(DIPL) BHC	OMA W DPAL	ING)	OBE CURI THE	RICULUM FO COURSE)R	FORMA	T- 3	Sheet No. 1/5			
Branch		ELECTRI	CAL AN	D ELECTRONICS EN	GINEERING	Se	mester		3			
Course	Code	303/6840)	Course Name		Electr	ical circuit	1				
Course	e Outc	ome 1		Analyse	electrical circuits			Teac Hrs	h Marks			
Learnin	ng Out	come 1	Explair (Cogni	Explain electrical circuit terms and elements45(Cognitive domain)5								
C	ontent	ts	 Circu Source source Classe bilate 	it terms: Mesh, loop ees: Ideal and practic es transformation ification of Element eral elements, linear	b, node, branch, junct cal voltage, Ideal and ts: Active and passive and nonlinear element	ions o practi e elem nts,	f a network cal current ents, unilat	k. source eral an	e, d			
Method	of Ass	essment	Extern	al: End semester the	eory examination (Per	n pape	r test)					
Learnin	ng Out	come 2	Calculate the current, voltage, power in a given DC circuit using loop and Nodal method (Cognitive domain)									
C	ontent	ts	 Kirch Loop Probl Noda 	hoff current law, K and Nodal method em based on Kirchh Il method	irchhoff voltage law	hhoff	voltage law	v, loop	and			
Method	of Ass	essment	Extern	al: End semester the	eory examination (Per	n pape	r test)					
Learnin	ng Out	come 3	Detern networ	nine Z and Y parame k (Psychomotor dor	eters of T and π main)			4	5			
C	ontent	ts	 To determine Z -parameter of T and π network To determine Y-parameter of T and π network To simulate T and π network for determining Z and Y parameters 									
Method	of Ass	essment	Extern	al: Performance of g	given task and viva vo	oce						

RGPV (E	DIPL(BHC	OMA W PAL	ING)	OBE CUR THE	RICULUM FO	DR	FORMAT-3		Sheet No. 2/5		
Branch			Elec	ctrical Engineering		Se	mester		3		
Course Co	ode	303/6840)	Course Name]	Electri	cal circuit	1			
Course Outcome	2	1	Apply	Apply network theorems in electrical circuit.TeachMHrs						Marks	
Learning	Oute	come 4	Explain circuit	Explain different theorems and solve DC810circuit using a given theorem (Cognitive domain)10							
Contents			 Super Theve Maxi Probl 	rposition theorem enin's theorem mum Power Transfe ems based on above	er Theorem e theorems						
Method o	f Asse	essment	Interna	nternal: Mid semester-I theory examination (Pen paper test)							
Learning Outcome 5			Calcula circuit	Calculate the current, voltage in a given DC1215circuit using theorem. (Cognitive domain)15							
Cor	ntent	S	 Super Theve Norto Maxi Nume 	rposition theorem enin's theorem on's theorem mum Power Transfe erical problems base	er Theorem ed on above theorems	5					
Method o	f Asse	essment	Extern	al: End semester the	eory examination (Per	n pape	r test)				
Learning	Out	come 6	Perform find the	m experiment on a g e parameters (Psych	iven theorem and omotor domain)			8		10	
Cor	ntent	S	• To fii • To fii	nd branch current us nd load current usin	sing Superposition the g Thevenin's theorem	eorem 1		1			
Method o	f Asse	essment	Extern	al: Performance of §	given task / viva voce	;					
Learning	Oute	come 7	Perform find the	Perform experiment on a given theorem and810ind the parameters (Psychomotor domain)10							
Contents • To • To • To Po			 To fin To fin To sin Power 	 To find load current using Norton's theorem. To find load resistance for Maximum Power Transfer To simulate electrical circuit for verification of Norton's theorem and Maximum Power Transfer theorem 							
Method o	f Asse	essment	Interna	l: Performance of g	iven task and viva vo	ce					

RGPV	(DIPL) BHC	OMA W DPAL	ING)	OBE CURRICULUM FOR THE COURSE			FORMAT-3		Sheet No. 3/5		
Branch			Elec	ctrical Engineering		Se	Semester 3				
Course	Code	303/6840)	Course Name		cal circuit	1				
CourseDeteOutcome 3phase			Deterr phase	nine electrical qua AC circuit	Teac Hrs	h Marks					
Learning Outcome 8		come 8	Represent AC quantities and Calculate electrical quantities of single phase AC circuit (Cognitive domain)						15		
Contents			 Representation of AC quantities by phasor method, Conversion of polar to rectangular and vice versa. RL, RC, RLC series and parallel circuits. combination of AC circuits, impedance, admittance, reactance, phasor diagram, impedance triangle, power factor, active power, reactive power, apparent power, power triangle. Resonance in AC circuits, bandwidth, Q factor. Numerical problems on AC fundamentals 								
Method	of Ass	essment	Explain AC quantities and solve given single								
Learnin	g Out	come 9	phase AC circuit (Cognitive domain)					8	10		
C	ontent	ts	 Representation of AC quantities by phasor method, Conversion of polar to rectangular and vice versa. RL, RC, RLC series and parallel circuits. combination of AC circuits, Impedance, admittance, reactance, phasor diagram, impedance triangle, power factor, active power, reactive power, apparent power, power triangle. Resonance in AC circuits bandwidth O factor. 								
Method	of Ass	essment	Interna	l: Mid semester-II t	heory examination (F	Pen paj	per test)				
Learnin	g Outo	ome 10	Measu AC cir	re electrical quantiti cuit (Psychomotor d	es of single phase omain)			8	10		
Contents			 To determine parameters impedance, admittance, reactance of given RLC series circuit. To determine active power, reactive power, apparent power and power factor of given RLC series circuit. To measure resonance frequency of given RLC series circuit. 								
Method	of Ass	essment	External: Performance of given task and viva voce								

RGPV	RGPV (DIPLOMA WING) BHOPAL			OBE CURRICULUM FOR THE COURSE			FORMAT-3		Sheet No. 4/5		
Branch			Eleo	ctrical Engineering		Se	mester	3			
Course	Code	303/6840)	Course Name	Electrical circuit						
Course Outcome 4			Deterr AC cir	Determine electrical quantities of three phase AC circuit					h	Marks	
Learning Outcome 11			Explai phase	Explain concepts and solve problems on three phase AC circuit (Cognitive domain)						10	
Contents			 Phasor and complex representation of three phase supply, Phase sequence and polarity Three phase power, active, reactive and apparent power in star and delta system for balanced load. 								
Method of Assessment Inte				l: Assignment and Q	Quiz						
Learnin	g Outo	ome 12	Determine parameter of three phase AC circuit (Cognitive 8 10 domain)						10		
C	onten	ts	 Phasor and complex representation of three phase supply, Phase sequence and polarity Phase and line quantities in three phase star and delta system for balanced load. Three phase power, active, reactive and apparent power in star and delta system for balanced load. 								
Method	of Ass	essment	Extern	External: End semester theory examination (Pen paper test)							
Learnin	g Outo	ome 13	Perform (Psych	m experiment on throom on the omotor and affective	ee phase AC circuit e domain)			8		10	
C	onten	ts	 To verify relation between Phase and line voltage, current in a star network and follow standard safety norms. To verify relation between Phase and line voltage, current in a delta Network and follow standard safety norms. 								
Method	of Ass	essment	Extern	al: Performance of g	iven task and Observ	ation	/ viva voce	9			

RGPV (DIPLOMA WING) BHOPAL			ING)	OBE CURRICULUM FOR THE COURSE			FORMAT-3		Sheet No. 5/5		
Branch			Eleo	ctrical Engineering		Se	Semester		3		
Course	Code	303/6840)	Course Name]	Electrical circuit					
Course In Outcome 5 C				Interpret transient response of an electrical circuit.					h Marks		
Learning Outcome 14			Detern circuit	etermine time constant (τ)' for R-L and R-C reuit and explain performance (Cognitive domain)					15		
Contents			 Initial and final condition for inductors, capacitors DC transients and steady state response of a series R-L circuit and R-C Circuit 								
Method	of Ass	essment	Extern	External: End semester theory examination (Pen paper test)							
Learnin	g Outo	ome 15	Calcul circuit	Calculate time constant (τ)' for R-L and R-C45circuit and explain its performance (Psychomotor domain) \bullet \bullet							
Contents .			 To simulate R-L series DC circuit and plot transients and steady state response To simulate R-C series DC circuit and plot transients and steady state Response 								
Method	of Ass	essment	Interna	Internal: Performance of given task and viva voce							

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3	A Text Book of Electrical Technology Vol-I, S. Chand &	Theraja, B. L. : Theraja, A. K;,
	Co. Ram-nagar, New Delhi, ISBN : 9788121924405	
4	Circuit and network, McGraw Hill Education, New	Sudhakar, A. ; Shyammohan, S. Palli
	Delhi,	
	ISBN : 978-93-3921-960-4	
5	Fundamentals of Electrical Engineering, Cambridge	Saxena, S.B Lal; Dasgupta, K
	University	
	Press Pvt. Ltd., New Delhi, ISBN : 978-11-0746-435-3	
6	Electrical Circuits (Hindi), Satya Prakashan New Delhi	Suresh Kumar Soni & Umesh
		Kumar Soni

RGPV (DIPLOMA WING) BHOPAL

OBE CURRICULUM FOR

THE COURSE

CORMAT 3
FORMAT- J

Sheet No. 1/5

Branch			Ele	ectrical & Electronic	cs	Semester	3				
Course (Code	304/6	822	Course Name	D	igital Electro	nics				
Course	Outco	ome 1	Exam and le	ine the structure of ogic gates.	f various number sys	stem, codes	Teach Hrs	Marks			
Learnin	g Out 1	come	List o conve	ut different types o ert one to another.	of number system & (Cognitive)	code and	5	8			
Co	ntents	5	Numl Binar V Conv	 Decimal number, binary number, octal and Hexadecimal number. Binary Codes: Weighted and un-weighted codes BCD, Gray, Excess-3. Conversion of number system and code: (Decimal number, binary number, octal and Hexadecimal number, BCD, Gray, Excess-3) 							
Method ofExternal: End semester theory examination (Pen paper test)Assessment											
Learning Outcome 2			Perfo (Cogi	Perform various binary arithmetic operation. 6 (Cognitive) 6							
Co	Binary operations: Binaryaddition, subtraction, Multiplication, Division. Contents Complement of number: Complements: 1's, 2's, 9's and 10's. Subtraction using 1's and 2's complement.										
Me Asse	thod o	of nt	Interi	nal: Mid semester-I	theory examination	n (Pen paper t	est)				
Learnin	g Outo	come 3	Veri	fy truth table of all	the gates. (Psychom	notor)	7	12			
Cc	ontent	S	Log Log Veri NOF	ic Gates: Symbol, operation : AND, OR, NOT, N Realization of ic System: Positive and fication of the basic R).	and truth-table: NAND, NOR, EX-OF logic gates using univ d negative logic system logic gates (AND, OR	R, EX-NOR versal gates. m. ,NOT NAND ,	NOR ,EX-OR a	and EX-			
Method	of Asse	essment	Exte	ernal: Verification o	f given task and viva	voce					

RGPV (DIPLOMA WING) BHOPAL

OBE CURRICULUM FOR THE COURSE

Sheet FORMAT-3

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Branch			Ele	ectrical & Electroni	cs	Semester 3				
Course	Code	304/6	822	Course Name	Digit	tal Electronic	5			
Course	Outco	ome 2	Construct and Examine simple combinational digital circuit.					Marks		
Learnin	g Outo	come 4	Verify	Verify Boolean algebra laws and theorems. (Psychomotor)58						
Cc	ontent	S	Laws and theorems of Boolean algebra: Boolean laws, De-Morgan's Theorem and Duality Theorem, Complement of Boolean equations. Verification of De- Morgan's theorem.							
Method	of Asse	essment	Internal: Verification of given task and viva voce							
Learning Outcome 5		Solve logic c	Solve Boolean expressions using K-map and realize its610logic circuit. (Cognitive)10							
Contents			Boolean expressions: Sum of product and product of sum, Karnaugh maps and its use for simplification up to four variable Boolean expressions, Don't care condition. Realization of logic equations: The universal building blocks-NAND & NOR, AND-OR network, NAND-NAND Logic for implementation of Boolean expressions.							
Method	of Asse	essment	Extern	al: End semester t	heory examination (Pe	en paper test)				
Learnin	g Outo	ome 6	Implement different type of adder and subtractor circuits. (Cognitive)				8	14		
Co	ontent	s	Adder and Subtractor Circuit: Half adder, full adder, parallel binary adder, 8421 adder, half subtractor, full subtractor, parallel binary subtractor.							
Method	of Asse	essment	Extern	al: End semester t	heory examination (Pe	en paper test)				
Learnin	g Outo	ome 7	Desig (Psych	n different type of nomotor)	coder and multiplexer	circuits	4	7		
Contents Coder Circuit: Encoder, Decoder (2 to 4 line,3 to 8 line, BCD to Decimal, Decimal to7 segment) MUX Circuit: Multiplexers: 4 to1 and 8 to1. De-Multiplexers: 1 to 4 and 1 to 8. (Block Diagram and Truth table) Verification of encoder, decoder, multiplexer and de-multiplexer ci						ent) blexer cir	cuit.			
iviethod	UT ASSE	essment	intern	al: Performance of	given task and viva vo	lice				

RGI WI	PV (D NG) E	IPLOM BHOPA	A L	OBE CURR THE	FORMA	r- 3	Sheet No. 3/5				
Branch			Ele	ectrical & Electronic	CS	Semester	Semester				
Course	Code	304/6822		Course Name	Digital Electronics						
Course	Outco	ome 3	Analyze flip-flop circuit, counters, shift registers and understand their operation.					ch Marks			
Learning Outcome 8			Analyze the working of various flip-flops and verify its outputs. (<i>Psychomotor</i>)					12			
Contents			Flip-Flop: S-R flip-flops(FF), D FF, Types of Triggering, Glitch, JK FF race around condition and remedies, JK Master Slave FF and T FF. Verification of various flip-flops								
Method of Assessment			Exterr	nal: Performance of	given task and viva vo	се					
Learnin	g Outo	come 9	Draw	6	10						
Co	ontent	S	Registers: Shift Register (3 to 4 bits only)- introduction, circuit diagram and waveforms of SISO, SIPO, PISO, PIPO shift registers.								
Method	of Asse	essment	External: End semester theory examination (Pen paper test)								
Learnir	ng Out 10	come	Desigi count	n different type of s ers. <i>(Psychomotor)</i>	synchronous and asyno	chronous	7	11			
Contents			Counters: Asynchronous: Up/down counters, Up-down counters. Synchronous Counters. Up/down counters, Ring counter, Johnson counter. Design Mode-4 counters.								
Method	Method of Assessment			nal: End semester th	neory examination (Pe	n paper test					

RGI WI	RGPV (DIPLOMA WING) BHOPAL			OBE CURF THE	FORMA	г- З	She No.	et 4/5		
Branch			Ele	ectrical & Electroni	ical & Electronics Se			3		
Course	Code	304/6	5822	Course Name	Digital Electronics					
Course Outcome 4			Demonstrate the functioning of A to D and D to A Converters.					h S	∕Jarks	
Learning Outcome 11			Draw and explain various operation of D/A conversion circuits. (<i>Cognitive</i>)						10	
Contents		D/A Weigh	C onversion : ted resister, R-2R lad	der network.						
Method	of Asse	essment	Internal: Mid semester-II theory examination (Pen paper test)							
Learnii	ng Out 12	come	Draw and explain various operation of A/D conversion circuits. (<i>Cognitive</i>)						10	
Co	ontent	S	A/D Counte (Theor	Conversion: er type, Successive ap etical aspects)	oproximation, Flash type,	Dual slope ty	pe.			
Method	of Asse	essment	External: End semester theory examination (Pen paper test)							

RGI WI	PV (D NG) B	IPLOM BHOPA	A L	OBE CURR THE	FORM	иат-3	Sheet No. 5/5					
Branch			Ele	ectrical & Electroni	Semest	er	3					
Course	Code	e 304/6822		Course Name	Digital Electronics			;				
Course Outcome 5		Compare various digital logic family.					ch S.	Marks				
Learning Outcome 13			Compare digital ICs on different parameters. (Cognitive)					5				
Contents			Characteristics of digital ICs: Fan-in, Fan-out, Propagation delay, Power dissipation, Noise margins, Figure of merit. Logic ICs: NAND Gate using TTL, NOR gate using ECL.									
Method of Assessment			Exterr	External: End semester theory examination (Pen paper test)								
Learning Outcome 14		come	Construct universal gates and inverter using MOS and CMOS logic. (<i>Cognitive</i>)						10			
Contents		S	Classifications of logic families: Saturated and Non-saturated logic. MOS and CMOS Logic: MOS based NOT gate, Two input NAND & NOR gate. CMOS based NOT gate, Two input NAND & NOR gate.									
Method	of Asse	ssment	External: End semester theory examination (Pen paper test)									
Learnir	ng Out 15	g OutcomeMake use of PAL & PLA for implementation of Boolean expression and design simple logic circuit. (Cognitive/Affective)6							10			
Cc	ontent	S	PLD:	PLD: PAL, PLA Implementation of Boolean expression using PAL, PLA (Up-to 2 variables)								
Method	of Asse	ssment	Internal: Assignment and Quiz									