	PV (Diploma Wing) Bhopal			SCHE	MEFORLEARNING		Brai	nch	Code		Со	ourse Cod	е	Code	Code	
KGPV	(טוףוסma	wing / Bhopai			OUTCOME		0	C) .	1	4	0	2	1	1	Format No. 4
COURSE	E NAME	Microprocessor and M	icrocontroller													
O Desc	cription	Explain 8085 Micr	oprocessor	, its architectu	re and memory mapping.											
O Desc	ription	Demonstratethe are	chitecture o	of 8085 Microp	processor.											
					SCHEME OF STUDY	•										
S. No.	Lear	ning Content		ng –Learning Nethod	Description of T-L Process	Teach Hrs.				Pract TutH			LRs Re	quired		Remark
LO-01	Architectu	roprocessor: ure, am with function of	hands on	onstration, practice, lab ents, V-Lab.	 Teacher will explain the contents Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 		-			4		expe instrumeas instru with simu	rimen umen suring umen releva lation nigh s	s, com int softwa	iner vith nputer	
					SCHEME OF ASSESSM	ENT										
S. No.	Methodo	of Assessment		Descrip	tion of Assessment				Ma Ma	ximu rks	ım	Reso	urces R	equired		External / Internal
-O-01	Interna		 Assem Draw t 	he Pin Diagrar	nd/or) in different blocks of 8085 in of 8085 Microprocessor e function of given pin of		ecture	Э.		10				s, Ratir cale	ıg	Internal

SCHEMEFORLEARNING

Branch Code

Course Code

COURSE NAM	T 1: 0005	nd Microcontroller	OUTCOME	0	0	1	4	0	2	1	2	FormatNo.4
	T 1: 0005			'								
`O Doccrintic	Explain 8085							·				
o bescription	ion Explain 6003	Microprocessor, its architect	ture and memory mapping.									
O Descriptio	on Define function	n of various blocks, buses a	nd cycles of 8085.									
			SCHEME OF STUD	1								
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Prac /TutH		Li	Rs Req	uired			Remarks
des	ock Diagram and its scription-egister Array,	Interactive classroom lecture, PPT, Video, Demonstration, quiz,	Teacher will explain the contents and provide handouts to students.	10			Text B Hando charts,	uts, c	halk bo			

Signals

Timing

control bus.

ALU, Timing and Control

Address, Description of

Machine cycle & BUS

Address bus, data bus and

assignments.

SCHEME OF ASSESSMENT

Teacher will conduct

quiz/tutorial to make

students practice their

assignments/

knowledge.

NPTEL and others.

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-02	External Theory Exam	 Studentwillbeaskedto(and/or): Compares different cycle of 8085 microprocessors. Describe the function of ALU and Flag Resister. Describe the buses of microprocessor. 	10	Question paper, Rating scale	External

	/Distance	- 146	SCI	HEMEFORLEARNING		Branch Cod	e	С	ourse Cod	le	CO Code	LO Code	
KGPV	(Dibioma	a Wing) Bhopal		OUTCOME		0	1	4	0	2	1	3	FormatNo.4
COURS	E NAME	Microprocessor and Mi	crocontroller			ı							
CO Desc	cription	Explain 8085 Micr	oprocessor, its architec	ture and memory mapping.									
LO Desc	cription	Compare differenti	nemory mapping techr	niques and interrupts of 808	5.								
				SCHEME OF STUDY	/								
S. No.	Lea	rning Content	Teaching— Learning Method	DescriptionofT-L Process	Teach Hrs.	Prad /Tutl		ı	LRs Red	quired			Remarks
Memory Interfacing, IO Interfacing, Block Diagram of Memory and I/O Interfacing, 8085 Interfacing Pins. Addressing modes of 8085. Interrupts and its types. Memory Mapped I/O & I/O mapped I/O		Facing, iagram of Memory Interfacing, erfacing Pins. ing modes of 8085. is and its types. Mapped I/O & I/O	Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments. Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		10			Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.					
	'			SCHEME OF ASSESSM	ENT								
S. No.	Method	d of Assessment	Descript	ion of Assessment		Maxim Ma			Resoui	rces Re	quired		External / Internal
LO-03	O-03 2. What are interrup 3. Describe Address 4. Calculate the num			Memory mapping techniques of and explain each types.	o access	1	0		-	stion ng sc	pape ale	r,	External

RGPV (Diploma Wing) Bhopal

SCHEMEFORLEARNING OUTCOME

Ві	ranch Code		Co	urse Code	:	CO Code	LO Code	
0	0	1	4	0	2	2	4	Format No. 4

COURSE NAME	Microprocessor and Microcontroller
CO Description	Identify the microcontroller 8051 and its architecture
LO Description	Model the architecture of Microcontroller 8051.

SCHEME OFSTUDY

S. No.	Learning Content	Teaching— Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-04	Introduction to micro- controller, Comparison between microprocessor and micro-controller, 8051 Microcontroller and its architecture, Pin diagram and its description	Lab demonstration, hands on practice, lab assignments, V-Lab.	 Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 	-	4	Lab manual, charts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-04	Internal practical	Student will be asked to(and/or): 1. Demonstrate the architecture of 8051. 2. Sketch the explain pin diagram of 8051 and verify pins.	10	Rubrics, Rating scale	Internal

ADDITIONALINSTRUCTIONSFORTHEHOD/FACULTY(IFANY)

RGPV (Diploma Wing) Bhopal

SCHEMEFORLEARNING OUTCOME

В	ranch Code		Co	ourse Cod	e	CO Code	LO Code
0	0	1	4	0	2	2	5

FormatNo.4

COURSE NAME	Microprocessor and Microcontroller
CO Description	Identify the microcontroller 8051 and its architecture.
LO Description	Explain block diagram and registers of Microcontroller 805

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-05	Block diagram of 8051 I/O ports Pins and their functions, Registers 8051 data type, On-chip ROM memory and RAM Memory organization register banks, stack and stack pointer, SFR registers, Registers - A, B, SP, DPTR, PC and SFRs.	Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S.	No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LC	0-05	External Theory Exam	 Student will be asked to (and/or) Draw and explain the block diagram of 8051. Describe and relate various register of 8051. Draw the block diagram of 8051 and explain each block. 	10	Question paper, Rating scale	External

DCDV/Dialoma	M/ing \ Dhanal	SCHEMEFORLEARNING	В	Branch Code			Course C	ode	Code	Code	
RGPV (Diploma	wing) Bhopai	OUTCOME	0	0	1	4	0	2	2	6	FormatNo.4
COURSE NAME	Microprocessor and Microcontroller										
CO Description	Identify the microcontroller 80)51 and its architecture									

Describe I/O ports and Machine cycles in 8051 Microcontroller.

LO Description

S. No.	Learning Content	Teaching –Learning Method	ng Description of T-L Process		Pract. /TutHrs.	LRs Required	Remarks
LO-06	I/O ports structure and operation bit address. General Format and functions of each bit of PSW SFRs, machine cycle, Time delay calculations. Machine Cycles. Calculation of Time delay for different cycles of microcontroller.	assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	6		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-06	Internaltheory	Student will be asked to 1. Explain I/O structure of 8051. 2. Calculate the time delay for different cycles of microcontrollers.	10	Question paper, Rating scale	Internal

DCDV/	/D:l	Mary Dhamal		S	CHEMEFORLEARNING		Brai	nch Code		Co	ourse Cod	e	CO Code	LO Code	4
KGPV	(טוpioma	Wing) Bhopal			OUTCOME		0	0	1	4	0	2	2	7	FormatNo.4
COURSE	NAME	Microprocessor and N	Microcontroller								1				
CO Desc	ription	Develop the progr	ram using A	ssembly I	Language of 8085.										
LO Desci	ription	Identify different	instructions	formats a	and sets of Microprocessor 808	35.									
					SCHEME OF STUDY	,									
S. No.	Lear	ning Content	Teachii Learn Meti	ing	Description of T-L Process	Teach Hrs.		Pract. /TutHrs	•	L	Rs Red	quired			Remarks
Instruction Format Instructions Set and their classification. Data Transfer operation		ruction Format ructions Set and their sification. ta Transfer operation Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments. Teac contractive classroom lecture, paragraphic paragraphic processing assignments.		Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10			H ch	Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.						
					SCHEME OF ASSESSM	ENT									
S. No.	Method	d of Assessment		Desc	ription of Assessment		N	/laximun Marks		ı	Resour	ces Re	quired		External / Internal
LO-07	Externa	l Theory Exam	 Expl Desc Expl Classi their wor 	ain differe cribe data t ain 1 byte, fy instruct king/ oper	ent Instruction set of 8085. transfer operation of 8085. ,2 byte and 3 byte instructions of ation of 8085 microprocessor base tation (Arithmetic operation Logical looping etc).	ed on		10			Quest scale	cion pa	iper, Ra	ating	External

DCDV	/Dinloma	· Wing \ Phono	SCH	HEMEFORLEARNING		Branch C	C	ourse Cod	e	CO Code	LO Code		
KUPV	וסואוס)	a Wing) Bhopa		OUTCOME	0	0	1	4	0	2	3	8	FormatNo.4
COURSE	NAME	Microprocessor an	d Microcontroller			·	·	·					
CO Desc	ription	Develop the pr	ogram using Assembly La	anguage of 8085.									
LO Desc	ription	Utilize the arit	hmetic, logic and branch of	operation in programming of	of 8085.								
				SCHEME OF STUD	Υ								
S. No.	Lea	rning Content	Teaching— Learning Method	DescriptionofT-L Process	Teach Hrs.		act. tHrs.	L	.Rs Rec	Juired			Remarks
LO-08	Logic op	ic operation eration Operation	lecture, PPT, Video,	Teacher will explain the contents and provide handouts to students.	10	-		Text I Hando charts	outs, c	halk b	oard,		

SCHEME OF ASSESSMENT

NPTEL and others.

Teacher will conduct

their knowledge.

assignments/ quiz/tutorial to make students practice

Stack, Subroutine and related assignments.

instruction

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-08	External Theory Exam	 Student will be asked to(and/or): Compare different operations of 8085 programming. Describe arithmetic operation. Explain Stack, subroutine instructions in 8085. 	10	Question paper, Rating scale	External

DCD\/	/Diploma \	Ning \ Dhonel		SCHE	MEFORLEARN	ING		Branch Code	2	С	ourse Cod	le	CO Code	LO Code	
KGPV	וסוpioma ו	Wing) Bhopal			OUTCOME		0	0	1	4	0	2	3	9	FormatNo.
COURSE	ENAME	Microprocessor and Mic	rocontrolle	,			<u>'</u>	·			·				
CO Desc	cription	Develop the progra	am using	Assembly La	nguage of 8085.										
LO Desc	ription	Execute simple prog	grams in 8	085.(Psychomo	otor)										
					SCHEME (OF STUD	Υ								
S. No.	Learni	ing Content		ing −Learning ⁄Iethod	Description of Process	T-L	Teach Hrs.	Prac /TutH	-	l	Rs Rec	quired			Remarks
LO-09	simple prog Arithmetic Logical ope Branch Op	eration eration routine and related	hands o	Method Process Importation, son practice, ssignments, V- Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments.				5		comp	iment ments uring i uter w ation s	al trai s/kit w instrui vith re softwa	iner vith ments, elevant are and		
					SCHEME OF A	ASSESSIV	IENT								
S. No.	Method	of Assessment	Des	cription of Asse	ssment	Maxir Ma	num ırks		Re	source	es Req	uired			External / Internal
LO-09	External	practical	1. Write the gi	vill be asked to e a program in a early	8085 to perform (Refer list of		10	I	Rubric	s, Ratii	ng scal	le			External

practical)

		ADDITIONAL INSTRUCTIONS FOR THE HOD	/ FACULT	Y (IF A	NY)						
RGPV (Diploma Wing) Bhopal		SCHEMEFORLEARNING	SCHEMEFORLEARNING Branch Code		SCHEMEFORLEARNING Branch Code Course Code		de	CO Code	LO Code		
RGPV (Diplom	a wing) Bhopai	OUTCOME 0		0	1	4	0	2	3	10	FormatNo.4
COURSE NAME	Microprocessor and Microcontr	oller									
CO Description	Write and execute asser	bly language programs for 8051 Microcontrol	ller.								
LO Description	Classify addressing mod	es and instruction set of 8051 with example									

S. No.	Learning Content	Teaching— Learning Method	DescriptionofT-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-10	Addressing Modes: Immediate, Register, Direct, Indirect, Indexed, Relative and bit addressing Instruction set: Data Transfer, Arithmetic, Logical, Branching, and Machine Control	lecture, PPT, Video, Demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
	External Theory Exam.	Student will be asked to			
LO-10		1.Explain addressing mode if 8051 2.Explain instruction set of 8051	10	Question paper, Rating scale	External

		ADDITIONAL INSTRUCTIONS FOR THE HOD	/ FACULT	ΓY (IF A	NY)								
DODY/D: 1	we had t	SCHEMEFORLEARNING	Branch Code		Branch Code			C	ourse Cod	le	CO Code	LO Code	_
RGPV (Diplom	a Wing) Bhopal	OUTCOME 0		0	1	4	0	2	4	11	Format No. 4		
COURSE NAME	Microprocessor and Microcont	roller											
CO Description	Write and execute assem	bly language programs for 8051 Microcontroll	er.										
LO Description	Analyze particular progra	amming concept on 8051 Microcontroller as pe	er require	ement									

S. No.	Learning Content	Teaching-Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-11	Arithmetic, logical instruction, Looping, Counting, sorting and Indexing.	Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-11	Internal theory	 Student will be asked Describe the programming concept to solve arithmetic operation using 8051. Write a program based on Logical instruction of 8051. Explain the programming concept of counting on 8051 with the help to example. 	10	Question paper, Rating scale	Internal

RGPV (Diploma Wing) Bhopal

SCHEMEFORLEARNING OUTCOME

Br	anch Code		Co	urse Cod	e	CO Code	LO Code	
0	0	1	4	0	2	4	12	FormatNo.4

COURSE NAME	Microprocessor and Microcontroller
CO Description	Write and execute assembly language programs for 8051 Microcontroller.
LO Description	Develop programs to perform the operations on 8051 microcontroller.

SCHEME OF STUDY

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-12	Programs on arithmetic and logic instructions, Looping, Counting, sorting and Indexing. Data manipulation, Masking, Stack operation.	Lab demonstration, hands on practice, lab assignments, V-Lab.	 Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 		4	Lab manual, charts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-12	External practical	Student will be asked to 1. Write the program in 8051 to perform the given operation on kit. (Refer list of practical)	10	Rubrics, Rating scale	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

RGPV (Diploma Wing) Bhopal		SCHEMEFORLEARNING	Branch Code			Course Code			CO Code	LO Code	
		OUTCOME		0	1	4	0	2	5 13	FormatNo. 4	
COURSE NAME	Microprocessor and Microcontrol	er									

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. 71 . 🗆	1 - 11	/I F	L JF	. 7 1 1	

Illustrate Pin diagram and block diagram of various peripherals.

LO Description

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-13	Peripherals: PIN DIAGRAM,BLOCK DIAGRAM, INTERFACING WITH 8085 8255programmable peripheral interface 8279programmable key board interface 8259 programmable interrupt controllers 8257 DMA controller.	Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-13	End Semester Theory Exam	 Student will be asked to (and/or) Explain the given peripheral device. Draw the block diagram of given peripheral. 	10	Question paper, Rating scale	External

RGPV (Diploma Wing) Bhopal		SCHEMEFORLEARNING	E	Course Code			CO Code	LO Code	_		
RGPV (Diplom	a wing) Bhopai	OUTCOME		0	1	4	0	2	5	14	FormatNo.4
COURSE NAME	Microprocessor and Microcontrolle	r									
CO Description	Describe Peripherals and its	Describe Peripherals and its interfacing with 8085									
LO Description	Demonstrate the interfacing	Demonstrate the interfacing of various peripherals with 8085.									

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
LO-14	Interfacing of 8255, 8279, 8259 and 8257 with 8085	Interactive classroom lecture, PPT, Video, Demonstration, quiz, assignments.	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	10		Text Books, PPT, Handouts, chalk board, charts, Video lecture- NPTEL and others.	

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-14	Internal theory	 Student will be asked to (and/or) Explain the interfacing of given peripherals. Describe various concept to interface the given peripherals with 8085 microprocessor. 	10	Question paper, Rating scale	Internal

RGPV (Diploma Wing) Bhopal		SCHEMEFORLEARNING	E	Branch Code		(Course Code		CO Code	LO Code	_
		OUTCOME		0	1	4	0	2	5	5 15	FormatNo.4
COURSE NAME Microprocessor and Microcontroller											
CO Description	Describe Peripherals and its interfacing with 8085.										
LO Description	Develop assembly language	program to use peripherals with 8085.									

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
	Develop assembly language program to use peripherals with 8085.	Lab demonstration, hands on practice, lab assignments, V-Lab.	 Teacher with support from lab staff will demonstrate the procedure of lab experiments. Student will conduct lab assignment based on these experiments. 		4	Lab manual, charts, experimental trainer instruments/kit with measuring instruments, computer with relevant simulation software and high speed internet.	

SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
LO-15	Internal practical	Student will be asked to1. Develop a program for the given peripherals.(Refer list of practical)	10	Rubrics, Rating scale	Internal

ADDITIONALINSTRUCTIONSFORTHEHOD/FACULTY(IFANY)