	/Dialogo	Wine \ Dhanal		SCHE	MEFORLEARNING	SCHEMEFORLEARNING Branch Co			Couc		Course Code		Code	Code	Л
KGPV	(טוףוסma	Wing ) Bhopal			OUTCOME	1	E	0	3	4	0		1	1	Format No. <b>4</b>
OURSE	NAME	Microprocessor and Mi	crocontroller												
O Desc	ription	Explain 8085 Micr	oprocessor,	, its architectur	re and memory mapping.										
O Desc	ription	Demonstratethe arc	chitecture o	f 8085 Microp	processor.										
					SCHEME OF STUDY										
S. No.	Lear	ning Content		ng –Learning Iethod	Description of T-L Process	Teach Hrs.				act. tHrs.		LRs Red	quired		Remarks
0-01	Architect	roprocessor: ure, am with function of	hands on	onstration, practice, lab ents, V-Lab.	<ul> <li>Teacher will explain the contents</li> <li>Teacher with support from lab staff will demonstrate the procedure of lab experiments.</li> <li>Student will conduct lab assignment based on these experiments.</li> </ul>	-				4	expe instr mea instr with simu	manual riments suring uments releval lation shigh sponet.	al trai s/kit w s, com nt softwa	ner vith puter	
					SCHEME OF ASSESSM	ENT									
6. No.	Methodo	fAssessment		Descript	tion of Assessment				Maxi Mark	-	Reso	urces Re	equired		External / Internal
		<ol> <li>Assemble</li> <li>Draw the</li> </ol>	t will be asked to (and/or) semble and explain different blocks of 8085Architecture where the Pin Diagram of 8085 Microprocessor. t out and verify the function of given pin of 8085.			·-	1	0		Rubrics sc	s, Ratin ale	g	Internal		

**SCHEMEFORLEARNING** 

**Branch Code** 

Course Code

RGPV (Diploma Wing ) Bhopal		SCHE	SCHEMEFORLEARNING OUTCOME				Course Code		s	CO Code	LO Code	A
						3	4	0		1	2	FormatNo.4
COURSE NAME Microprocessor and Microcontroller												
CO Description	Explain 8085 Mic	eroprocessor, its architectur	re and memory mapping.									
LO Description	Define function of	f various blocks, buses and	d cycles of 8085.									
	,		SCHEME OF STUDY	•								
S. No. Learning Content Tea		Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract /TutH		L	Rs Req	uired			Remarks
LO-02 Block	Diagram and its	Interactive classroom	Teacher will explain the	10		]	Γext B	ooks,	PPT,			

Handouts, chalk board,

charts, Video lecture-

NPTEL and others.

contents and provide

handouts to students.

Teacher will conduct

quiz/tutorial to make

students practice their

assignments/

knowledge.

description-

control bus.

Signals

Timing

Register Array,

ALU, Timing and Control

Address, Description of

Machine cycle & BUS

Address bus, data bus and

lecture, PPT, Video,

Demonstration, quiz,

assignments.

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

	/Dialogo	- MC \ Dh l	SCI	HEMEFORLEARNING		Branch Cod	e	С	ourse Code	2	CO Code	LO Code	
KGPV	(טוpioma	a Wing ) Bhopal		OUTCOME	E	. o	3	4	0		1	3	FormatNo.4
COURS	E NAME	Microprocessor and Mi	icrocontroller									1	
CO Desc	cription	Explain 8085 Micr	roprocessor, its architec	eture and memory mapping.									
LO Desc	cription	Compare differents	memory mapping techr	niques and interrupts of 808	5.								
				SCHEME OF STUD	<u>'</u>								
S. No.	Lea	rning Content	Teaching— Learning Method	DescriptionofT-L Process	Teach Hrs.	Prac /Tuth			LRs Req	uired			Remarks
LO-03	O-03 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		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	•		Resour	ces Req	uired		External / Internal
LO-03 External Theory Exam		<ol> <li>Compare various N</li> <li>What are interrupt</li> <li>Describe Addressir</li> </ol>	will be asked to(and/or): pare various Memory mapping techniques of 8 are interrupts and explain each types. ibe Addressing modes of 8085. late the number of address lines required to a		1	0		~	stion j		-,	External	

## SCHEMEFORLEARNING OUTCOME

	LO Code	CO Code	e	urse Code	Co		anch Code	Ві
Format No. 4	4	2		0	4	3	0	Ε

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.	<ul> <li>Teacher with support from lab staff will demonstrate the procedure of lab experiments.</li> <li>Student will conduct lab assignment based on these experiments.</li> </ul>	-	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)

# SCHEMEFORLEARNING OUTCOME

В	Branch Code			Course Code			Course Code			LO Code
Ε	0	3	4	0	3	2	5			

FormatNo.4

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

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
O-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
LO-05	External Theory Exam	<ol> <li>Student will be asked to (and/or)</li> <li>Draw and explain the block diagram of 8051.</li> <li>Describe and relate various register of 8051.</li> <li>Draw the block diagram of 8051 and explain each block.</li> </ol>	10	Question paper, Rating scale	External

## SCHEMEFORLEARNING OUTCOME

В	ranch Code		Co	urse Cod	e	CO Code	LO Code
Ε	0	3	4	0		2	6

FormatNo.4

COURSE NAME	Microprocessor and Microcontroller
CO Description	Identify the microcontroller 8051 and its architecture.
LO Description	Describe I/O ports and Machine cycles in 8051 Microcontroller.

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
O-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

	/Dialama	Mina \ Dhanal		S	CHEMEFORLEARNING		Brar	nch Code		С	ourse Cod	e	CO Code	LO Code	
KGPV	וטוpioma	Wing ) Bhopal			OUTCOME		E	0	3	3	0	3	2	7	FormatNo.4
COURSE	NAME	Microprocessor and I	Microcontroller					'							'
CO Desc	ription	Develop the prog	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	Teachi Learr Met	ning	Description of T-L Process	Teach Hrs.	/	Pract /TutHr		l	Rs Rec	quired			Remarks
LO-07	Instructions Set and their classification.  Data Transfer operation		Interactive classroom PPT, Vide Demonstr quiz, assig	lecture, eo, ation,	Teacher will explain the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	s and provide s to students. chi will conduct lents/ quiz/tutorial to ludents practice their		Hando charts	Text Books, PPT, Iandouts, chalk board, harts, Video lecture- IPTEL and others.						
					SCHEME OF ASSESSM	ENT									
S. No.	Method	d of Assessment		Desc	ription of Assessment		N	/laximu Marl			Resour	ces Re	quired		External / Internal
LO-07	External	l Theory Exam	<ol> <li>Exp</li> <li>Desc</li> <li>Exp</li> <li>Class</li> <li>their wor</li> </ol>	olain different Instruction set of 8085. Socribe data transfer operation of 8085. Colain 1 byte,2 byte and 3 byte instructions of 8085 instruction of 8085 microprocessor base orking/ operation (Arithmetic operation Logic on jumping looping etc).		ed on		10	)	Question paper, Rat scale		ating	External		

	/Diploma	a Wina \ Dhana	SCI	HEMEFORLEARNING		Branch Code		C	ourse Code	CO Code	LO Code	
KGPV	(טוpוoma	a Wing ) Bhopa		OUTCOME	E	0	3	4	0	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.	Prac /Tutl		L	.Rs Req	uired		Remarks
LO-08 Arithme		tic operation	Interactive classroom	Teacher will explain the	10			Text E	Books,	PPT,		
	Logic op	peration	lecture, PPT, Video,	contents and provide				Hando	outs, cl	halk board,		
	Branch C	Operation	Demonstration, quiz,	handouts to students.				charts	, Video	o lecture-		

#### SCHEME OF ASSESSMENT

Teacher will conduct assignments/ quiz/tutorial

their knowledge.

to make students practice

Stack, Subroutine and related assignments.

instruction

NPTEL and others.

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

	<b>/</b> 5.1		SCHI	EMEFORLEARN	IING		Branch Cod	e	С	ourse Code	Co	-	LO Code	_
RGPV	(Diploma Wi	ing ) Bhopal		OUTCOME		Ε	0	3	4	0	3	3	9	FormatNo.4
COURSE	E NAME M	icroprocessor and Mic	rocontroller			<u> </u>								I
CO Desc	cription D	evelop the progra	am using Assembly La	inguage of 8085.										
LO Desc	ription Ex	xecute simple prog	rams in 8085.(Psychomo	otor)										
	'			SCHEME (	OF STUD	Y								
S. No.	Learning	g Content	Teaching –Learning Method	Description of Process	f T-L	Teach Hrs.	Prac /Tuth		l	.Rs Req	uired			Remarks
LO-09	simple progra Arithmetic on Logical opera Branch Opera	ation	Lab demonstration, hands on practice, lab assignments, V-Lab.	<ul> <li>Teacher with some from lab staff of the demonstrate the procedure of leaver ments.</li> <li>Student will contain lab assignments on these experiments.</li> </ul>	will the ab onduct t based	-	5		exper instru measi comp simula	iments ments uring i uter w	charts, al trainer /kit with nstrumer ith relevanternet.	nts, ant		
				SCHEME OF	ASSESSN	IENT								
S. No.	Method of	Assessment	Description of Asso	essment	Maxir Ma	num arks		Re	esource	es Req	uired			External / Internal
	External pr	ractical	Student will be asked to	2025 to perform										

10

Rubrics, Rating scale

External

1. Write a program in 8085 to perform the given operation. (Refer list of

practical)

LO-09

	ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)										
DCDV/Dialogo	Mina \ Dhanal	SCHEMEFORLEARNING	Branch Code		Co	Course Code		CO Code	LO Code	Λ	
RGPV (Diploma	wing ) Bhopai	OUTCOME		0	3	4	0		3	10	FormatNo.4
COURSE NAME	COURSE NAME Microprocessor and Microcontroller										
CO Description Write and execute assembly language programs for 8051 Microcontroller.											

Classify addressing modes and instruction set of 8051 with example

LO Description

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	<del></del>	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		<ul><li>1.Explain addressing mode if 8051</li><li>2.Explain instruction set of 8051</li></ul>	10	Question paper, Rating scale	External

		ADDITIONAL INSTRUCTIONS FOR THE HOD	/ FACULT	TY (IF A	NY)						
DODY/D' I	· Martin A Bloomed	SCHEMEFORLEARNING	Branch Code  E 0 3		Course Code			O de	LO Code		
KGPV (Diplom	a Wing ) Bhopal	OUTCOME			4	0		4 11		Format No. 4	
COURSE NAME	Microprocessor and Microcontro	oller									
CO Description	Write and execute assemb	ly language programs for 8051 Microcontroll	er.								
LO Description	Analyze particular program	mming 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	<ol> <li>Student will be asked</li> <li>Describe the programmingconcept to solve arithmetic operation using 8051.</li> <li>Write a program based on Logical instruction of 8051.</li> <li>Explain the programming concept of counting on 8051 with the help to example.</li> </ol>	10	Question paper, Rating scale	Internal

## SCHEMEFORLEARNING OUTCOME

Ві	ranch Code		Co	ourse Cod	CO Code	LO Code	
Ε	0	3	4	0	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.	<ul> <li>Teacher with support from lab staff will demonstrate the procedure of lab experiments.</li> <li>Student will conduct lab assignment based on these experiments.</li> </ul>		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)

DCDV/Diplom	- Wing \ Dhanal									
KGPV (Diploma	RGPV (Diploma Wing ) Bhopal  Microprocessor and Microcontrol	OUTCOME	E 0		3	4	0	5	13	FormatNo.4
COURSE NAME	Microprocessor and Microcontroller		·					<u>'</u>		
CO Description	Describe Peripherals and its	interfacing with 8085								

CO DescriptionDescribe Peripherals and its interfacing with 8085LO DescriptionIllustrate Pin diagram and block diagram of various peripherals.

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching –Learning Method	Description of T-L Process	Teach Hrs.	Pract. /TutHrs.	LRs Required	Remarks
LO-13	PIN DIAGRAM,BLOCK DIAGRAM,	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	<ol> <li>Student will be asked to (and/or)</li> <li>Explain the given peripheral device.</li> <li>Draw the block diagram of given peripheral.</li> </ol>	10	Question paper, Rating scale	External

RGPV (Diploma Wing ) Bhopal		SCHEMEFORLEARNING	E	Branch Cod	le	(	Course Coo	de	CO Code	LO Code	_
		OUTCOME	E	0	3	4	0		5	14	FormatNo.4
COURSE NAME	Microprocessor and Microcontrol	er									
CO Description	Describe Peripherals and it	s interfacing with 8085									
LO Description	Demonstrate the interfacing	g 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	<ol> <li>Student will be asked to (and/or)</li> <li>Explain the interfacing of given peripherals.</li> <li>Describe various concept to interface the given peripherals with 8085 microprocessor.</li> </ol>	10	Question paper, Rating scale	Internal

RGPV (Diploma Wing ) Bhopal		SCHEMEFORLEARNING	Branch Code Course Code				CO LO Code Code		
		OUTCOME E 0		3	4	0	5		15
COURSE NAME	Microprocessor and Microcontroller								
CO Description	Describe Peripherals and its interfacing with 8085.								
LO Description	ption 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
LO-15	Develop assembly language program to use peripherals with 8085.	Lab demonstration, hands on practice, lab assignments, V-Lab.	<ul> <li>Teacher with support from lab staff will demonstrate the procedure of lab experiments.</li> <li>Student will conduct lab assignment based on these experiments.</li> </ul>		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	<ul><li>Student will be asked to</li><li>1. Develop a program for the given peripherals.(Refer list of practical)</li></ul>	10	Rubrics, Rating scale	Internal

#### ADDITIONALINSTRUCTIONSFORTHEHOD/FACULTY(IFANY)