RGPV WING)		•	OMA	OBE CURRI COURSE	CULUM FOR TI	HE	FORMA	T-3	Sheet No. 1/5		
Branch		ormatic inginee		chnology / Com	nputer Science	Sem	nester	V			
Course Code				Course Name	Java Programn	ning					
Course C	)utc	ome -		Apply basic programming constructs of Teac h S Hrs							
Learning 1	Ou	itcome			entals and a vironment of			6	10		
Contents			betw prog appli (jdk, apple java	reen object ramming la cations of Ja jde), structu et), JVM (Java	ct oriented p oriented and nguage, His va, Java Edit Ire of java pr Virtual Machin nterpreter and pse)	d p tory, ions, ogra ie), l	rocedur Fea java m (app Executio	ral d tures envir olicati	oriented, and onment on and ocess of		
Method Assessme	ent	of	Interr	nal: Mid semester	theory examinat	ion (F	Pen papei	r test)			
Learning 2	Ou	itcome	Illustrate the building blocks of Java 10 programming 10								
Introduction to objects and classes - defining a classed field declaration and method declaration, Data Ty Symbolic Constants, creating objects, accessing of members, constructor and object method invocated Scope of class members - Instance and class, Casting, Math class.  Operators: Arithmetic, Relational, Logical Assignment Increment & Decrement, Conditional, Bit wises, Special Expressions & its Evaluation  Control statements in Java  Decision making Control Statement; if statement, Simple if statement, ifelse statement, Nesting of if						Types, g class ocation, s, Type nments, Special					

	else statement switch statement Iteration Control Statement : for loop , while loop, do- while loop, break, continue.			
Method of Assessment	External: End semester theory examination (Pen paper test).			
Learning Outcome 3	Develop simple java programs in Java 10 10 programming environment			
Contents	Installation and setup of java, Installation of IDEs for java(netbean,eclipse). Compiling and running simple Java programs - Writing simple java programs displaying some output string , Programs taking input from the end user and giving desired output, programs using command line arguments, Programs using methods of Math class.			
Method of Assessment	Internal: Laboratory observation/Assignment, Internal viva			
Learning Outcome 4	Develop programs using basic 12 10 programming constructs in Java.			
Contents	programming using branching statements-if, if-else, if-elif, nested if- else statements, ternary operators, switch statement programs using looping constructs- for, while, do-while constructs, break and continue statements.			
Method of Assessment	External: Laboratory observation and viva voce.			
RGPV (DIPL WING) BHOPAL	OMA OBE CURRICULUM FOR THE FORMAT-3 Sheet No. 2/5			
Branch Information & Enginee	on Technology / Computer Science Semester V ring			
Course Code	Course Name Java Programming			
Course Outcome - Apply the concept of Object Oriented Programming in Java.  Teac h Hrs				

Learning Outcome 1	Illustrate the concept of Data hiding 6 and Inheritance in Java.
Contents	Data hiding concept - public, private access. Inheritance: Concept of subclass and superclass, Types of Inheritance, Defining a subclass, subclass constructor super keyword, Overriding Methods, Final Variables & Methods, Final Classes, Finalizer Methods, Protected access.
Method of Assessment	External: End semester theory examination (Pen paper test).
Learning Outcome 2	Explain Multiple inheritance and 6 10 polymorphism
Contents	Abstract Method and Abstract Class in Java Implementing multiple inheritance using Interfaces Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interfaces Variables Polymorphism: Compile time polymorphism, runtime polymorphism, Static vs Dynamic binding
Method of Assessment	External: End semester theory examination (Pen paper test).
Learning Outcome 3	Demonstrate Arrays, String, Wrapper 8 classes, inbuilt and user defined Packages
Contents	1D, 2D and multidimensional Arrays in Java- Declaration creation, initialization and array length, variable size array, String class and its methods, StringBuffer class and its methods, Wrapper classes, methods of different wrapper classes and their uses.  Introduction to Java API Packages, Using System Packages, Naming Conventions, Creating Packages Accessing a Package, Using a Package, Adding a Class to a Package, Hiding Classes, Static Import
Method of Assessment	Internal: Mid semester theory examination (Pen paper test).
Learning Outcome 4	Experimenting with object oriented 14 features of Java, Arrays, String and Wrapper classes.

Contents			polyr Write class	Write programs demonstrating inheritance, polymorphism and data hiding features of java Write programs using arrays, strings and wrapper classes.  Create package containing classes and interfaces.							
Method Assessme	ent	of	Exterr	nal: Laboratory o	bservation and vi	va vo	ce.				
RGPV WING)			OMA	OMA OBE CURRICULUM FOR THE FORMAT-3 S COURSE							
Branch		ormatic Enginee		chnology / Com	nputer Science	Sem	nester	V			
Course Code Course Name Java Programmin						ming					
Course C	Outc	ome -		Apply Multithreading and Exception Teac handling features in Java  Mark s Hrs							
Learning 1	Οι	ıtcome		Illustrate multithreading concepts in   8   10   java programs							
Contents			Class Threa	Introduction, Creating Threads, Extending the Thread Class, Stopping and Blocking a Thread, Life Cycle of a Thread, Thread Priority, Synchronization, implementing runnable interface, inter thread communication.							
Method Assessme	ent	of	Exterr	nal: End semeste	r theory examina	tion (	Pen pape	er test).			
Learning 2	Οι	ıtcome		rpret inbuilt eption handlir		r de	efined	8	10		
Types of Errors, Exceptions, implementation of keywords like throw & throws, built in exception subclasses, importance in practical implementation of live p						ke tr ception	ry, cato ons, C except	ches, reating	finally, g own		
Method Assessme	ent	of	Exterr	nal: End semeste	r theory examina	tion (	Pen pape	er test).			

Learning 3	Ou	ıtcome		erimenting w eption handli		eadin	ig and	12	10		
Contents			prior Progi	ram using the ity of a thread ram demonstrads and inter t	, ating synchro	nizati	on amo				
Method of Internal: Laboratory observation/Assignment, internals assessment							, internal	al viva			
RGPV WING)	BH	(DIPL OPAL	ОМА	OBE CURRICULUM FOR THE FORMATION COURSE					Sheet No. 4/5		
Branch Information Technology / Computer Science Semester & Engineering							nester	V			
Course Code											
Course C	Outc	ome -		oly Java I/O blem	concepts fo	or a	given	Teac h Hrs	Mark s		
Learning 1	Ou	ıtcome		Explain Concept of Stream classes and 12 10 File handling in Java							
Contents			Class strea File ( readi	am classes, Byses, Performing classes, inpolenation by attending and	ng interactive out/output exc n of files, rea vtes, handling	e inp eptio ding/ g prir	ut / C ns writing mitives	output g char data	using acters, types,		
Method of External: End semester theory examination (Pen pa							Pen pape	er test)			
10						using ng in	12	10			
Contents  Write programs for taking interactive input a using stream classes.  Write programs for creating a file, reading a						·					

into a file. Write programs for buffering and concatenating files.											
Method Assessme	ent	of	Exterr	nal: Laboratory o	bservation and vi	va vo	ce.				
RGPV WING)		(DIPL	OMA	OBE CURRI COURSE	T-3	Sheet No. 5/5					
Branch Information Technology / Computer Sc & Engineering						Sem	nester	V			
Course Code				Course Name	Java Programn	ning					
Course (5	Dutc	ome -	Inte	rpret Java ne	etworking Co	ncep	ots	Teac h Hrs	Mark s		
Learning 1	Ou	ıtcome		Explain the concepts of Socket 6 10 Programming in Java							
Contents			Fund for c class open to the according	amentals of solient and serve of java.io pacter, open a socket, reading to the socket.	es : protoco ocket and sock ver side socke kage, client side en an input str ead from and server's proto Server side Datagram soc	ket prede some sold writer to the sold with	orogram ogramr ocket po and oo ite to close t	nming, rograutput the che s	stream stream treams, ming -		
Method Assessme	ent	of	Exterr	nal: End semeste	r theory examina	tion (	Pen pape	er test)	).		
Learning Outcome Illustrate URL processing in Java 2								5	10		
Contents			URL,	Reading dire	constructors, ctly from a Uwriting to a UR	RL,	Connec	ting	· ·		
Method of Internal: Short Answer Type Test/Quiz/Pen Paper Test Assessment											

# REFERENCE BOOKS:

S No	Title & Publication	Author
1	Programming with Java	E. Balagurusami
2	Java Network Programming: Developing Networked Applications 4th Edition	Harold, Elliotte Rusty
3	Java The Complete Reference, Eleventh Edition	Herbert Schildt
4	Effective Java , Third edition	Joshua Bloch
5	https://www.javatpoint.com/java-tutorial	
6	https://docs.oracle.com/javase/tutorial/	
7	https://www.javatpoint.com/java-networking	
8	https://www.geeksforgeeks.org/java-networking/	
9	E-books/E-tools/Relevant software to be used as recommended by AICTE/NITTTR/RGPV	

R <i>G</i>	RGPV (Diploma Wing ) Bhopal	SCHEME FOR L		Bra	nch (	Code	Co	ourse Code	CO LO Code Code	Format No. 4		
100	T v (Diplome	t wing / Dilopar	OUTCO	ME	C/I	0	4			1	1	1 01111at 110. 4
COUI	RSE NAME	JAVA PROGR	AMMING								I.	
CO D	escription	Apply basic pro	ogramming constructs o	f Java langua	age							
LO D	escription	Explain fundan	nentals and application	Programmin	g envir	onme	nt of J	ava				
				SCHEME O	F STU	DΥ						
S. No.	Le	arning Content	Teaching Learning Method	Descri	ption o	f T-L		each Irs.	Pract. /Tut Hrs.	LRs I	Required	Remarks
1	programming object oriented programming Features, and Editions, java structure of jand applet), Machine), Exprograms (in	Object oriented g, difference betweed and procedural g language, Histor applications of J a environment (jdava program (application process of terpreter and coma (netbean, eclipse	oriented teaching, demonstratio quiz, assignments, lication l of java pilation),	Teacher the cont provide students will cor assignm quiz/tut students their kn	tents and handous. Teach aduct nents/ orial to s practic	d its to er make		6	NIL		,	
			SC	HEME OF A	SSESS	MEN	T					
S. No.	Method o	f Assessment	Description of Ass	essment	Maxi Ma			]	Resources R	equired		External / Internal
1		nester theory nination	Pen-Paper test/ Quiz/ M	1CQ	1	0		Test paper + Rating scale			<b>)</b>	Internal
		A	DDITIONAL INSTRU	CTIONS FO	R THE	HOD	/ FAC	ULTY	(IF ANY)			
				Part of prog		_						

R	GPV (Diplom:	a Wing ) Bhopal	SCHEME FOR LEARNIN	G Br	anch	Code	Cours	e Code	CO Code	LO Code	Forn	nat No. 4
	(= <b>-k</b> -3	· · · <b>g</b> / =• <b>F</b> · · ·	OUTCOME	C/I	0	4			1	2		
COI	URSE NAME	JAVA PROGRA	MMING									
CO	Description	Apply basic pro	gramming constructs of Java lar	iguage								
LOI	Description	Illustrate the bu	ilding blocks of Java programm	ing								
			SCHEMI	E OF STU	DY							
S. No.		Learning	Content	Teaching Learnin Method	g		ption of Process	Teach Hrs.	Pract. /Tut Hrs.	LF Requ		Remark
1	declaration a Constants, cre and object me and class, Typ Operators: Increment & Expressions & Control staten Decision mak statement , i switch statement	ating objects, acce thod invocation, So e Casting, Math cl Arithmetic, Rela Decrement, Co cits Evaluation hents in Java ing Control State felse statement ent	lasses - defining a class, field ration, Data Types, Symbolic sing class members, constructor cope of class members - Instance ass. tional, Logical Assignments, onditional, Bit wises, Special ment: if statement, Simple if , Nesting of if-else statement coop, while loop, do-while loop,	Interactive classroom teaching, demonstration, quiz, assignment, tutorial	tti ptti tti tti tti tti tti tti tti tti	Teacher explain contents or stude Teacher conduct assignment assignment or actice knowled	the s and handouts nts. will hents/orial to udents their	10	NIL	Hando chalk board PPT, t book, charts video film.	text	
S. No.	Method of	Assessment	Description of Assessment	Max	MEN imun arks		Reso	ources Re	equired			xternal / nternal
1	End semester theory examination Pen- Paper Test				10		Question	n paper +	rating sca	ale	F	External

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY) NIL

R	RGPV (Diploma Wing	a Wing ) Bhopal	SCII							Code	Code	Format No. 4
	` •	37		OUTCOME	C/I	0	4			1	3	
COI	URSE NAME	JAVA PROGE	RAMMING									
CO	Description	Apply basic pr	ogramming	g constructs of Java lan	guage							
LO	Description	Develop simple	e Java prog	rams in Java programr	ning envi	ronm	ent					
				SCHEME	OF STU	DY						
S. No.	Le	earning Content		Teaching — Learning Method	Descript Pr	ion of ocess	T-L	Teach Hrs.	Pract. /Tut Hrs	s. F	LRs Required	Remarks
1				classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents in Lab Class and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.			10	NIL	cha PP boo	ndouts, lk board, Γ, text ok, charts eo film.	
				SCHEME OF	ASSESS	MEN'	T					
S. N	o. Method	of Assessment	I	Description of Assessme	nt	N	Maxim Mark		Resource	s Requ	iired	External / Internal
1		ry observation/ nment/ viva	system and programs Afterward	vill be asked to install JD d start writing simple jav and executing them on co s students will install ID d execute java programs	a onsole. E like	t.	10		Observation schedule/check-li/rating scales /rubrics			Internal
		A	DDITION	AL INSTRUCTIONS F	OR THE	HOD	/ FAC	ULTY (I	IF ANY)			
				N	NIL							

SCHEME FOR LEARNING

RGPV (Diploma Wing ) Bhopal

CO

**Course Code** 

**Branch Code** 

LO

Code Code Format No. 4

RGPV (Diploma Wing ) Bhopal		SCHEME FOR LEARNING OUTCOME		nch (	Code	<b>Course Code</b>	Code	Code	Format No. 4	
				0	4		1	4		
COURSE NAME JAVA PROGRAMMING										
<b>CO Description</b>	Apply basic progr	Apply basic programming constructs of Java language								
LO Description Develop programs using basic programming constructs in Java.										
SCHEME OF STUDY										

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	<ul> <li>programming using branching statements-if, if-else, if-elif, nested if-else statements, ternary operators, switch statement</li> <li>Programs using looping constructs- for, while, do-while constructs, break and continue statements.</li> </ul>	Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents in lab/class and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.	NIL	12	Handouts, chalk board, PPT, text book, charts, video film.	

## SCHEME OF ASSESSMENT

S. No.	Method of Assessment	Description of Assessment	Maximum Marks	Resources Required	External / Internal
1	Laboratory observation and viva voce	Students will be asked to write java code for given problem, compile and execute the code, debug if bugs are found and create lab file attaching the code and output.	10	Observation schedule/check- list /rating scales /rubrics	External

# ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGI	PV (Diploma	Wing ) Bhopal	SCHEN	ME FOR LEARN	NING	Bra	nch C	Code	Co	ourse C	ode	CO Code	LO Code	Format No. 4
	· •			OUTCOME		C/I	0	4				2	1	
COUR	SE NAME	JAVA PROG	RAMMING											
CO De	scription	Apply the con	cept of Objec	t Oriented Progr	rammiı	ng in Ja	ıva.							
LO De	scription	Illustrate the	concept of Da	ta hiding and In	heritan	ce in J	ava.							
				SCHE	ME OF	STUD	Y							
S. No.	]	Learning Conte	nt	Teaching – Learning Method	Desc	ription Proces		L	Teach Hrs.	Pract /Tut Hrs.	1	LRs Req	uired	Remarks
1	access. Inheritance: superclass, 7 a subclass, s keyword, Ov Variables &	Concept - public, Concept of subcl Types of Inheritar ubclass construct verriding Method Methods, Final Cethods, Protected	ass and nce, Defining or, super s, Final Classes,	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	the contents and provide handouts to book n, students. Teacher will board book		andouts, opard, PPT pok, chart deo film, anual.	, text s,						
				SCHEME	OF AS	SESSN	<b>IENT</b>							
S. No.	Method of	f Assessment	Descript	ion of Assessmer	nt		imum ırks		]	Resour	ces Re	equired		External / Internal
1		ester theory nination	Pen- Paper T	Test/MCQ		1	.0		Que	stion pa	per + 1	rating sca	ale	External
	I	Al	DDITIONAL	INSTRUCTION	IS FOR	THE	HOD/	FA(	CULTY	(IF AN	(Y)			1
					NIL									

RGPV (Diplo	oma Wing ) Bhopal	SCHEME FOR DOUTCO		Branch	Code	<b>Course Code</b>	CO LO Code Code	Format No. 4
		OUICO		C/I 0	4		2 2	
COURSE NAM	E JAVA PROG	RAMMING						
CO Description	Apply the con	cept of Object Oriente	d Programmi	ng in Java.				
LO Description	Explain Multi	ple inheritance and po	lymorphism					
			SCHEME O	F STUDY				
S. No.	Learning Content	Teaching – Learning Method	Description Pro-		Teach Hrs.	Pract. /Tut Hrs.	Rs Required	Remarks
Class in multiple Interface Extending Implement Accessing Polymon poly	Abstract Method and Abstract Class in Java, Implementing multiple inheritance using Interfaces - Defining Interfaces, Extending Interfaces, Implementing Interfaces, Accessing Interfaces Variables  Interactive classroom the content to the content		Teacher will the contents provide hand students. Te conduct assi quiz/tutorial students pra knowledge.	and douts to acher will gnments/ to make	6	boa boo vid	ndouts, chalk ard, PPT, text ok, charts, eo film, lab nual.	
		SC	CHEME OF A	SSESSMEN	T			
S. No. Metho	od of Assessment	Description of As	sessment	Maximum Marks	l	Resources Re	quired	External / Internal
	semester theory examination	Pen- Paper Test/MCQ	Q	10		Question paper + r	ating scale	External
	A	DDITIONAL INSTRU	CTIONS FO	R THE HOI	)/ FACU	LTY (IF ANY)		
			NII	L				

R	GPV (Diploma	Wing ) Bhopal	SCH	EME FOR LEAR	NING	Bra	nch (	Code	C	Course C	code	CO Code	LO Code	Format No. 4
	` •	8 / <b>1</b>		OUTCOME		C/I	0	4				2	3	
COU	RSE NAME	JAVA PROGI	RAMMINO	3										
COI	Description	Apply the cone	cept of Obj	ect Oriented Prog	grammir	ng in Ja	ıva.							
LOD	Description	Demonstrate A	Arrays, Str	ing, Wrapper clas	sses, inb	uilt and	l user	define	d Pac	ckages				
				SCH	EME O	F STU	DY							
S. No.	Le	earning Content		Teaching – Learning Method		iption o		Tea Hi		Pract. Hr		LRs Re	equired	Remarks
1	Java- Declarate and array leng String class are class and its methods of different uses. Introduction to System Packa Creating Pack Using a Packa	ultidimensional Action, creation, inites, th, variable size and its methods, Structhods, Wrapper of Java API Packages, Naming Conages, Accessing age, Adding a Classes, Stational Classes, Stational Control of the Cont	cialization array, ringBuffer classes, lasses and ges, Using ventions, a Package, ss to a	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher the comprovide student will coassign quiz/tu student their ki	tents are handous. Teach nduct ments/torial to spractions.	nd outs to her o mak			NII	L	Handout board, P book, ch video fil	PT, text arts,	
				SCHEM	E OF A	SSESS	MEN	Т						
S. No.	Method of	Assessment	Descri	iption of Assessmo	ent	Maxi Ma	mum rks			Resour	ces R	equired		External / Internal
1		ester theory ination	Pen-Paper	test/ Quiz/ MCQ		1	0		Т	est pape	r + Ra	ating scale		Internal

Part of Progressive II

RGI	PV (Diploma V	Ving ) Bhopal		OR LEARNING Branch Coo		Code	Co	ourse C	ode	CO Code	LO Code	Format No. 4	
	(= - <b>F</b>	· <b>g</b> / <b>I</b> · · ·	OUT	COME	C/I	0	4				2	4	
COURS	SE NAME	JAVA PROGR	AMMING										
CO Des	scription	Apply the conc	ept of Object Orie	nted Programmi	ing in J	lava.							
LO Des	cription	Experimenting	with object orient	ed features of Ja	va, Ar	rays,	String a	and W	Vrappe	r clas	ses.		
				SCHEME O	F STU	DY							
S. No.	Learni	ng Content	Teaching – Learning Method	Teaching – Learning Description of T-L Process Method				ach rs.	Pract. Hrs		LRs R	equired	Remarks
1	polymorphism hiding feature programs usi and wrapper	g inheritance, m and data es of java, Write ng arrays, strings classes. ge containing	Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will explain the contents in lab/class and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.		NIL		14		Handout board, P book, ch video fil	PT, text arts,		
				FASSESSMENT								·	
S. No.	Method of	Assessment	Description of	Assessment		imum ırks		]	Resour	ces R	equired		External / Internal

ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)
NIL

10

Observation schedule/check-list /rating

scales /rubrics

External

Laboratory observation and

viva voce

Practical

1

RGI	PV (Diploma	Wing ) Bhopal	SCHEME FOR LE	–	Bra	nch (	Code	Course	Code		O de	LO Code	Format No. 4
-10-	(2- <b>p</b> -0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	OUTCOM	E	C/I	0	4			3	}	1	
COUR	RSE NAME	JAVA PROGRA	MMING										
CO Des	scription	Apply Multithrea	nding and Exception h	andling feat	tures ir	Java	1						
LO Des	scription	Illustrate multith	reading concepts in ja	va progran	ıs								
			S	CHEME O	F STU	DY							
S. No.	Lear	ning Content	Teaching – Learning Method	Descript Pro	ion of '	Γ-L	Teach Hrs.	Pract. / Hrs.		LRs I	Requ	uired	Remarks
1	Extending the Stopping and Thread, Life Thread Prior Synchroniza	the Thread Class, and Blocking a teaching, demonstration, quiz, assignments, atterface, inter thread the Thread Class, classroom teaching, demonstration, quiz, assignments, tutorial quiterface, inter thread the Thread classroom the teaching, demonstration, quiz, assignments, tutorial stu		provide ha students. T conduct as quiz/tutori students pr	the contents and provide handouts to students. Teacher will conduct assignments/ quiz/tutorial to make students practice their knowledge.			NIL	,	Handor board, book, c video f	PPT hart	, text	
			SCH	EME OF A	SSESS	MEN	T						
S. No.	Method o	f Assessment	Description of Asses	sment		mum rks		Resou	irces	Requir	ed		External / Internal
1		nester theory mination	Pen- Paper Test/MCQ		1	0		Question ]	paper	+ rating	sca	ıle	External
	I	ADD	OITIONAL INSTRUC	TIONS FOI	R THE	HOD	/ FACUI	LTY (IF	ANY)	)			1
				NII									

RGI	PV (Diploma V	Ving ) Bhopal	SCHEME FOR LE		Bra	nch (	Code	Co	ourse C	Code	CO Code	LO Code	Format No. 4
	` 1	87 1	OUTCOM	E	C/I	0	4				3	2	
COUR	SE NAME	JAVA PROG	RAMMING										
CO Des	scription	Apply Multit	hreading and Exception	handling fe	eatures	in Ja	va.						
LO Des	scription	Interpret inb	uilt and user defined exc	eption han	dling.								
			S	CHEME O	F STU	DY							
S. No.	Learn	ing Content	Teaching – Learning Method	Descripti Pro	ion of T	Γ <b>-L</b>	Teach	Hrs.		t./Tut rs.	LRs ]	Require	d Remarks
1	Exception has implementational like try, catch & throws, but Creating own subclasses, in exception has	on of keywords es, finally, throw alt in exceptions, exception	quiz, assignments, tutorial	ill expl ts and indouts Ceacher ssignme al to ma ractice	to will nts/ ake	8		N	TIL				
			SCH	EME OF A	SSESS	MEN'	T						
S. No.	Method of	Assessment	Description of Asses	sment		imum ırks		]	Resour	ces Re	quired		External / Internal
1		ster theory	Pen- Paper Test/MCQ		1	0		Que	stion pa	aper + 1	rating sca	le	External
	<u> </u>	AI	DDITIONAL INSTRUC	TIONS FO	R THE	HOD	) FAC	ULTY	(IF A	NY)			

NIL

RGI	PV (Diploma	Wing ) Bhopa	SCHEME FOR		Bra	nch (	Code	Co	urse (	Code	Co		LO Code	Format No. 4
			0010		C/I	0	4				3		3	
COUR	RSE NAME	JAVA PROC	GRAMMING											
CO Des	scription	Apply Multi	threading and Excepti	on handling feat	tures ir	. Java	a							
LO Des	scription	Experimenti	ng with multithreadin	g and exception	handli	ng in	Java.							
				SCHEME O	F STU	DY								
S. No.	Learning	g Content	Teaching –Learning Method	Description Proces		1	Teach Hrs.	Pr	act. /T Hrs.	ut	LRs F	Req	uired	Remarks
1	Program usin multithreading java, setting thread, Program den synchronizat various thread thread comm	ng feature of priority of a nonstrating ion among ads and inter	Interactive lab classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will ex contents in lab/ provide handou students. Teach conduct assign quiz/tutorial to students practic knowledge.	class and ts to der will ments/make		NIL		12		Handou board, F book, cl video fi	PT nart	, text	
			\$	SCHEME OF A	SSESS	MEN	T							
S. No.	Method of	Assessment	Description of A	ssessment	Maxi Ma	mum rks	l	ŀ	Resour	ces l	Require	d		External / Internal
1	Laboratory Assignment	observation/ / viva	Lab Work		1	0	Obse	ervati			e/check- ubrics	list	/rating	Internal
	<u> </u>		ADDITIONAL INSTI	RUCTIONS FOI	R THE	НОГ	)/ FACU	LTY	(IF A	NY)				
				NIL	<u>,</u>									

RGPV (Diplo	ma Wing ) Bhopal	SCHEME FOR I		Bra	anch (	Code	<b>Course Code</b>		LO Code	Format No. 4
` 1	8/ 1	OUTCO	ME	C/I	0	4		4	1	
COURSE NAM	E JAVA PROGRAM	MMING								
CO Description	Apply Java I/O co	oncepts for a given p	roblem.							
LO Description	Explain Concept of	of Stream classes and	d File handlin	g in Ja	ıva					
			SCHEME O	F STU	DY					
S. No.	Learning Content	Teaching – Learning Method	Descriptio Proc		·L	Teach Hrs.	Pract. /Tut Hrs.	LRs Req	uired	Remarks
Classes, Performi Output u input/out File class reading/ reading/ primitive concaten	Stream classes, Byte Stream Classes, Character Stream Classes, Performing interactive input / Output using stream classes, input/output exceptions File class, Creation of files, reading/writing characters, reading/writing bytes, handling primitives data types, concatenating and buffering files, random access files		Teacher will explain the contents and provide handouts to students. Teacher wi conduct assignments quiz/tutorial to make students practice the knowledge.			12	NIL	board, PPT, text book, charts, video film.		
		SC	HEME OF A	SSESS	MEN	T				
S. No. Metho	d of Assessment	Description of Ass	essment		imum arks	1	Resources 1	Required		External / Internal
	semester theory xamination	Pen- Paper Test/MCQ		1	10		Question paper	+ rating scale		External
	ADD	OITIONAL INSTRU	CTIONS FOI	R THE	НОІ	D/ FACU	LTY (IF ANY)			
			NIL	<u> </u>						

RCI	PV (Dinloma )	Wing ) Bhopal	SCHEME FOR L	–	Bra	nch (	Code	Course	Code	CO Code	LO Code	Format No. 4
KOI	V (Dipioilla	wing / Dilopai	OUTCO	ME	C/I	0	4			4	2	1 01111at 110. 4
COUI	RSE NAME	JAVA PROGE	RAMMING							l.	ı	
CO Des	scription	Apply Java I/C	O concepts for a given	problem								
LO Des	scription	Demonstrate in	nput output using stre	am classes an	d File l	andl	ing in Ja	va				
				SCHEME O	F STUI	ΟY						
S. No.	Learni	ing Content	Teaching – Learning Method	Descripti Pro	ion of T ocess	-L	Teach Hrs.	Prac /Tut I		LRs Rec	quired	Remarks
1	interactive in using stream Write prografile, reading a file.	ms for creating a and writing into a ms for buffering		Teacher will contents in la provide hand students. Teaconduct assi quiz/tutorial students pracknowledge.	ab/class douts to acher wi gnments to make	and	NIL	12		Handouts, board, PP' book, char video film	Γ, text rts,	
			SC	HEME OF A	SSESSI	MEN'	T					
S. No.	Method of	Assessment	Description of Asse	essment	Maxir	num ]	Marks	Re	sourc	es Require	ed	External / Internal
1		bservation and voce	Practical			10				chedule/che ales /rubric		External
		AD	DITIONAL INSTRU	CTIONS FO	R THE	HOD	/ FACUI	LTY (IF A	NY)			1
				NII								

RGPV (Diploma	Wing ) Bhopal	SCHEME FOR LEARNING OUTCOME	Br	anch (	Code	Course Code	Code	Code	Format No. 4
		OUTCOME	C/I	0	4		5	1	
COURSE NAME	JAVA PROGRA	AMMING							
CO D	T T	4 11 0							

**Branch Code** 

 $\mathbf{CO}$ 

**Course Code** 

LO

CO Description	Interpret Java networking Concepts
LO Description	<b>Explain the concepts of Socket Programming in Java</b>

#### **SCHEME OF STUDY**

S. No.	Learning Content	Teaching – Learning Method	Description of T-L Process	Teach Hrs.	Pract. /Tut Hrs.	LRs Required	Remarks
1	Networking basics: protocol, ports, TCP,	Interactive	Teacher will	6	NIL	Handouts, chalk	
	UDP Fundamentals of socket and socket	classroom	explain the contents			board, PPT, text	
	programming, Steps for client and server	teaching,	and provide			book, charts,	
	side socket programming, Socket class of	demonstration,	handouts to			video film.	
	java.io package, client side socket	quiz,	students. Teacher				
	programming- open a socket, open an	assignments,	will conduct				
	input stream and output stream to the	Tutorial.	assignments/				
	socket, read from and write to the stream		quiz/tutorial to				
	according to the server's protocol, close		make students				
	the streams, close the socket. Server side		practice their				
	socket programming - serversocket class,		knowledge.				
	Datagram sockets which use UDP.						

### SCHEME OF ASSESSMENT

S. No.	Method of Assessment	<b>Description of Assessment</b>	Maximum Marks	Resources Required	External / Internal	
1	End semester theory examination	Pen- Paper Test/MCQ	10	Question paper + rating scale	External	

## ADDITIONAL INSTRUCTIONS FOR THE HOD/ FACULTY (IF ANY)

NIL

RGPV (Diploma Wing ) Bhopa		SCHEME FOR LEARNING OUTCOME		Branch Code		Code	de Course Co		Code CO		LO Code	Format No. 4
				C/I	0	4			5		2	1 0111141 110. 4
COURS	SE NAME JAVA PROG	GRAMMING										
CO Des	scription Interpret Jav	a networking Concep	ts									
LO Des	scription Illustrate URI	processing in Java										
			SCHEME O	F STU	DY							
S. No.	Learning Content	Teaching –Learning Method	Description of T-L Tea Process Hr					LRs Required		d	Remarks	
1	URL class and URL constructors, creating and parsing of URL, Reading directly from a URL, Connecting to URL, Reading from and writing to a URL connection.	Interactive classroom teaching, demonstration, quiz, assignments, tutorial	Teacher will ex the contents and provide handou students. Teach conduct assigns quiz/tutorial to students practic knowledge.	ts to er will nents/ make	5		0	t	board, l	uts, chalk PPT, text harts, vio	t	
		S	SCHEME OF AS	SSESS	MEN	T						
S. No.	Method of Assessment	Description of Assessment		Maximum Marks			Resources Required				External / Internal	
1	Pen Paper / Short answer / Quiz/MCQ	Short Answer Type Test/Quiz/Pen Paper Work		10		Т	Test paper + Rating scale				Internal	
	A	ADDITIONAL INSTR	RUCTIONS FOR	R THE	HOD	/ FA	CULTY	(IF AN	NY)			I
			NIL	,				,				