GAUTAM COLLEGE OF PHARMACY HAMIRPUR

LESSON PLAN

Course: D Pharmacy (1st Year)

Session: 2023-2024

Subject Name: Pharmaceutical chemistry

Subject Code: ER20-12T

Total Teaching Hours Allocated by PCI: 75

Name of Faculty: RAKESN KUMAR/SUNIL Each Lecture: 1Hour

Chapter No.	Topic No.	Title of Topic	Learning Outcome	Date	Pedagology	Assignment Details	Remarks
1	1.	Introduction to pharmaceutical Chemistry/ Scope and objectives	After completion of topic, students will	19/04/93	Hand Written notes/ PPTs		Qdan !
	2.	Sources and types of errors: Accuracy	understand introduction	11/00/13			000
	3.	Precision, Significant figures	to pharmaceuti	18/06/13			(Park
r. Ja	4.	Impurities in Pharmaceuticals: Source and effect of impurities in	cal chemistry, source of errors and	21/08/23			Detanh.
		Pharmacopoeial substances	impurities in pharmaceuti				
	5.	Importance of limit test	cal chemistry.	25 July.	2		Pan
	6.	Principle and procedures of Limit tests for chlorides	12 to 22	96/18/2	3		Park
		Principle and procedures of Limit tests for Sulphates, and arsenic.		39/10/93			Potah
	8.	Principle and procedures of Limit		30/04/23	}	*	Palur
		tests for Iron, and Heavy metals			1 74	A	() . I.
2	9.	Volumetric analysis:	After	01/04/93	Hand Written		pach
MAT 1969	1 1	Fundamentals of	completion of	1-10	Dire	ste de cinama	

	volumetric analysis	topic,	04/06/23	notes/ PPTs	197	O docto
10.	Acid-base titration	students will	05/01/03			Oldo h
11.	Non-aqueous titration	understand	06 84 83		THE STATE OF THE S	(hot-
12.	Precipitation titration	volumetric	11108 93			(D)
13.	Complexometric	analysis,	1104100	1 2 2 2 2 2	44. 500	alak
	titration	titration	13/11/23		1 1 1 1 1 1	13/30
14.	Redox titration	methods and	15/04/93	ter . It . Unit -	100000000000000000000000000000000000000	(D)don
15.	Gravimetric analysis:	gravimetric	19/1/10		100	61
	Principle	analysis	1609/20	and the second	7 13 1 190 1	(P)
16.	Gravimetric analysis:	Principles	901 102	3283	175	
	method	and methods	0010124	Hand		(a) 10-
17.	Inorganic	After	25	Written	19331	Chair
	Pharmaceuticals:	completion of	1.10	notes/ PPTs	in the	
	Pharmaceutical	topic,	25 199120		f	
	formulations, market	students will	1.1.1.1		1	
	preparations, storage	understand	#11 J/			111
18.	conditions and uses Haematinics: Ferrous	inorganic	-		12	() do
10.	sulphate, Ferrous	pharmaceuti cal	Jula do		* 24	(hale
	fumarate, Ferric	formulations,	00/04/33			
	ammonium citrate,	their	Jan 180			HI DAY
	Ferrous ascorbate,	preparation	4			
	Carbonyl iron	methods,		Harris of		
19.	Gastro-intestinal	uses of	041.410			OLIC
	Agents: Antacids	haematinics,	89/09/2	3		16
	:Aluminium hydroxide	gastro-	1			
	gel, Magnesium	intestinal	120 at			
	hydroxide, Magaldrate,	agents,		- 6		
	Sodium bicarbonate,	topical	of m	-size of All Thirty	-1	
1	Calcium Carbonate,	agents,		No.		1 1 1
20.	Acidifying agents,	dental	AVILLE	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		01
	Adsorbents,	products,	MARC	P		(Page
	Protectives, Cathartics	and	6	1 65	10 m	
21.	Topical agents: Silver	medicinal	dali in	125	1	
	Nitrate, Ionic Silver,	gases	104/10/23	Lorente	\$ " T	(0)
	Chlorhexidine	<u>'</u>	77.7	k 1 - 40		Pa
*	Gluconate, Hydrogen			1 100		
	peroxide, Boric acid,		-			
100	Bleaching powder,	1	行行			
	Potassium		1	A street		
1	permanganate	1		0		
22.	Dental products:	The state of the s	nll.co.		U)-	
CHE OF	Calcium carbonate,	15.774M. A.	11/1/23	1 A		(D)1
The same of	Sodium fluoride,	THE YELL	Dire	ector principal utant college o amirpur (H.P)-1	Anarmacy T	1

		Denture cleaners,	45				O Lab
		Denture adhesives,		10/10/95		1	g de
	22	Mouth washes Medicinal gases:	1	7177	-		
2	23.	Carbon dioxide,		13/4/92			(1) Jah
		nitrous oxide, oxygen		ן און יו			(P)
4	24.	Introduction to	After		Hand		~ h
A.		nomenclature of	completion of	93/p/92	Written		(D) Jon,
		organic chemical	topic,	L'INA	notes/ PPTs		
		systems with particular	students will				
		reference to	understand				h
		heterocyclic	the		X.		
3		compounds containing	nomenclatur				
	25.	up to Three rings Introduction to	e of organic		-		- h
	23.	nomenclature of	compounds	20/1.62			Delas,
		organic chemical		20/1/23			4-
		systems with particular	1				
		reference to			,		
		heterocyclic			1		
		compounds containing					Ja.
7.		up to Three rings					
5	26.	Drugs Acting on	After	01112	Hand	Hand	(potent
->4	-	Central Nervous	completion of	1111 00	Written notes/ PPTs	Written	4
	136	System: introduction	topic,		notes/1115	Notes/PPTs	
3	3.4	to CNS	students will				
	27.	Anaesthetics:	understand the drugs	21/11/23	Hand Written		(Bokenh
1	100	Thiopental Sodium*,	acting on the		notes/ PPTs		4
		Ketamine Hydrochloride*,	central				17
		Propofol.	nervous				
	28.	Sedatives and	system and	2 11/0	Hand	1	0.1
8	20.	Hypnotics:	classification,	29/11/23	Written		(Par
		Diazepam*,	chemical		notes/ PPTs		1
5	9	Alprazolam*,	name,		1		
		Nitrazepam,	chemical	1			
A Page		Phenobarbital*	structure				2
	29.	Antipsychotics:	uses, stability	9611.10	Hand		(a) Jean
- 4	Mr.	Chlorpromazine	and storage	19 DILLA	Written	100	Par
1-1-11		Hydrochloride*,	conditions,		notes/PPTs		
11		Haloperidol*,	different			Ų.	214
	30.	Risperidone*,	types of	04/4/92	Hand		Q 00"
	M. Charles	Sulpiride*,	formulations	2,11,10	Written	V.	
वे त्यादी		Olanzapine,	and their		notes/PPTs	- Hillian	
Wy.	17x 1275m2	· · · · · · · · · · · · · · · · · · ·	X.Y	567	C- 1	1	

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	T	Quetiapine,	popular brand names	01/11/13	Hand	18.00	
		Lurasidone	brand Ham	vel day	**! witten	Harries .	
	31.	Anticonvulsants: Phenytoin*, Carbamazepine*,		06/11/33	notes/ PPTs	.0	
		Clonazepam,		00/10/0	Hand Written		
	32.	Valproic Acid*, Gabapentin*,		08/18/33	notes/ PPTs		
		Topiramate, Vigabatrin,	4	9 F			The state of the s
	33.	Lamotrigine Anti-Depressants:		13/6/13	Hand Written	()	
	33.	Amitriptyline Hydrochloride*,		121013	notes/ PPTs		•
		Imipramine Hydrochloride*,		114			
	34.	Fluoxetine*, Venlafaxine,		15/12/23	Hand Written		
		Duloxetine, Sertraline, Citalopram,		10/18/30	notes/ PPTs	7	
		Escitalopram, Fluvoxamine,		.7	•		
		Paroxetine Paroxetine	- 12°	4.	<i>.</i>	Hand	
6	35.	Drugs Acting on Autonomic Nervous System	After completion of topic,	16/12/23	Hand Written notes/ PPTs	Written Notes/PPTs	
	36.	Sympathomimetic Agents: Direct	students will understand	19/12/23	Hand Written		
		Acting: Nor- Epinephrine*,	the drugs acting on the		notes/ PPTs		
		Epinephrine,	autonomic		le de la company	10	
		Phenylephrine, Dopamine*,	nervous system and	1.170	in an an		
		Terbutaline, Salbutamol	classification, chemical		Cal.	•	
		(Albuterol), Naphazoline*,	name,		The state of the s	1	
		Tetrahydrozoline.	structure	* · · · · · · · · · · · · · · · · · · ·	Contract of	,	
-	37.	Agents: Hydroxy	uses, stability and storage	20/12/23	Hand Written	of College	
	żų	Amphetamine, Pseudoephedrine.	conditions, different		notes/PPTs		
A		Agents With Mixed Mechanism:	types of formulations	Higely	rune de	1	

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		Ephedrine, Metaraminol	and their popular	22/12/23	20		Alch.
	38.		brand names	11414	**	1	Yam
		Antagonists:	Diana names	96/10/10	Hand Written		
		Alpha Adrenergic		\(\p \	notes/ PPTs		(1) h
		Blockers: Tolazoline,			notes/1115		1 (Mari
	Y	Phentolamine		1	apata II a		
		Phenoxybenzamine,	***				
		Prazosin.	20,000		· .		
	39.	Beta Adrenergic		Δ	TT and	-	
		Blockers:		K7/m/2	Hand Written		(D) 1/w
		Propranolol*,		1 // // M	notes/ PPTs		1 Pol
		Atenolol*, Carvedilol	1,000	/			1
	40.	Cholinergic Drugs	-		Uand		
	į.	and Related Agents:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 20/13/92	Hand Written		(P) Stan
		Direct Acting Agents:	3	1 ~ 11/1/18/2	notes/ PPTs	.2	1 God
		Acetylcholine*,					
		Carbachol, And	, , , ,	. 13			
		Pilocarpine.					
	41.	Cholinesterase	-		(A. C. A. A.)	4	
	41.	Inhibitors:		Maria	Hand		(de 21/1)
	E				y Written notes/ PPTs		
	1	Neostigmine*,	F- 1		notes/ PPIS		
		Edrophonium	grand da				
	* *	Chloride, Tacrine					
		Hydrochloride,	§			,	
		Pralidoxime Chloride,	1 10 1 1 1 1 1 1				
	10	Echothiopate Iodide	2 a	11			
175	42.	Cholinergic Blocking		12/01/16	Hand		\wedge \wedge
		Agents: Atropine		1171016	Written		1/1/
		Sulphate*, Ipratropium			notes/ PPTs		
		Bromide Synthetic	E.A.	- 17			
	43.	Cholinergic Blocking	(-)	N21 11	Hand	1	
		Agents: Tropicamide,	dra tra	123/1/24	Written		
	\$	Cyclopentolate		' ' '	notes/ PPTs		0 <i>L</i>)
	S .	Hydrochloride,		7			1 \$
		Clidinium Bromide,	e mai lan				,
		Dicyclomine Dicyclomine					
		Hydrochloride*		, .			
6	44.	Drugs Acting on	After		LICTI		11
				30/01/24	Hand Written	\$ 8	Y.J
		Cardiovascular	completion of	' '	notes/ PPTs		¥]
3	AFMU	System ⁴	topic,		HOLES/ II IS		1
	45.	Anti-Arrhythmic	students will	02/19/9194			
, 75 h	ii-, 1	Drugs: Quinidine	understand	x 12 /2 /	Di	ector Principal	8
14) 7417	Les All	Sulphate,	the drugs		Ga	utam College h	harmacy
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		At.	1849	7		1	
		VIZI		1 3			

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	11.		Procainamide 4 / /	acting on the	19 10 2 12V	2.1		V ()
			Hydrochloride,	cardiovascul	' ' ' ' '		J. T.	NE
	ng.		Verapamil, Phenytoin	ar system				7
	,		Sodium*	and		7.	,	
14		46.	Lidocaine	classification,	127/02/91	1		
			Hydrochloride,	chemical	100/a	1.		PA
	3 E		Lorcainide	name,	70.7	251. 1.		
			Hydrochloride,	chemical	4,5%,2	1,13.		1
			Amiodarone and	structure		1-1		
119			Sotalol	uses, stability		et at i Britan i i		
		47.	Anti-Hypertensive	and storage	1001	1,20 113		Λ
			Agents: Propranolol*,	conditions,	10 10 10 10 W		vi	
			Captopril*, Ramipril,	different	11.0			Ma
1 4	4	y y	Methyldopate	types of	17 1 1 M		d.	
		48.	Hydrochloride,	formulations				, , , , , , , , , , , , , , , , , , ,
	4	1 7	Clonidine	and their	30.0			
			Hydrochloride,	popular	12/00/01			() /
	7	- 2	Hydralazine	brand names	110 100 12 4			
	-		Hydrochloride,		/		9	1
NI			Nifedipine,					-
1-4) 1	49.			1 1			1
1	100	49.	Antianginal Agents: Isosorbide Dinitrate	,	114/02/24		-	[<i>],</i> ,
	7	50		A 6:	1, 4	Hand		 VII
4		50.	Diuretics:	After	14/ 0/4	Written	i	1 1
		4	Acetazolamide,	completion of	11221241	notes/ PPTs		() ()
		1	Frusemide*,	topic,	• 19 =	notes/1115		1
社 争。			Bumetanide,	students will	1.2			T T
		51.	Chlorthalidone,	understand	90/01			. 1
0			Benzthiazide,	the Diuretics	1 KP1 PX 124			
		137	Metolazone,	and its				
W I			Xipamide,	classification,	7.3			1971
		1	Spironolactone	chemical	\ -			
)	A STATE OF THE STA	name,				
1			5 10 7 11	chemical		***************************************		1 . 1
14		7 7.	P out		91-0100		1	1 1//
· 1				uses, stability	21102124			M.
			1. 1.	uses, stability	7,			1 2
			Washington and	and storage				
				conditions,				1
			Approximation of the second	different	-			
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				formulations	95/19/2	L		() //
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3	of the party of the same		10011111111111111111111111111111111111	brand names	1.5		1)21	1
W .	10-	F 52 (4)	Hypoglycemic		0// 1/4	D/M	Confine of	pharma
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11.	30:14	The Party	N D		(18)	Har Har		
		1,400	W.	- 1	M	1	(4)	

13.00

							
2,		Agents: Insulin and Its	completion of	1/03/94	Written notes/ PPTs		
	- 4	Preparations,	topic,	7-0/27	Hotes/11-15	P.	1
	53.	Metformin*,	students will				
		Glibenclamide*,	understand //	15/03/24	s, and establish	4	M
		Glimepiride,	the games	4.49 _ 01	date is a s	***	
(1)	54.	Pioglitazone,	hypoglycemic	1-11-110	P. Allegan A.	1	111
No.		Repaglinide,	agents and	18/03/20	Allegan Sound !	1	J. J.
1	1 1	Gliflozins, Gliptins	classification,		ALL URAN MANUAL SING		
		49.	chemical	. 111	January A	100	
4		Chilar Francis	name,	261	and the state of		
			chemical	in last Au	ATTENDED BY THE	4	1 () ()
			structure	14 102 g.	Sover These		M.
		0.15	uses, stability		mi sasti v		121
0	h	alleilgy	and storage conditions,	Total and	21 St. No. 19	1 1	
	1.,	will a to a	different		741 5 - 141		
	. 17		types of	Dal- 10	100		^ 1
	1/	143	formulations	X0 (03 gu		1	1)//
			and their	101	ar t	13	1
Val		1000	popular		W41		
X .	3.	1374, c	brand names	7.5			
9	55.	Analgesic And Anti-	After	22/03/2	Hand	i i	Λ /)
· A		Inflammatory	completion of	. Whis six	VIIICCCII		1 PH,
12		Agents: Morphine	topic,		notes/ PPT	S	
		Analogues, Narcotic	students will	96/01/9			$ \dot{h} () \rangle$
		Antagonists;	understand	XD CO DO	4 (2		1/2-
	56.	Nonsteroidal	the Anti-		mark P.		V
11.	1 .	AntiInflammatory	Inflammator	27/03/2) d		\setminus \wedge
		Agents (NSAIDs) -	y Agents and	1 1 1	1).	
		Aspirin*, Diclofenac,	Nonsteroidal	1	ni, -		\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
		Ibuprofen*,	AntiInflamm		de la contrata		
	57.	Piroxicam, Celecoxib,	atory Agents	01/04/	94		
		Mefenamic Acid,	and their	1,0 11	u '		14/1.
		Paracetamol*,	classification	1 = II,			1 9 1
		Aceclofenac	s, chemical	0.9 /14/	1		1 1
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			chemical	(1)	And the fact	, le	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
N. Carlotte			structure	4 -1	Q 40	b	//
	Jan.		uses, stabilit	y 04/00			101
	A. Mil		and storage	ווייוטן	24		
	1 (1/2) 31		conditions,	1997			n 107/1/1)
/6				Sir.	19 TO 18 LAN		1) 180
2) \			different		The bottle.		
2)			different types of			Director Princip	
an ann an			different	S	in the second	Director Princip Gautam College Hamirgur (H.P.)	of Pharmacy

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			and their	12	1 1 1 1 1		
		1000	popular	,			
		10 g' 1 g	brand names				
		A40	After	1	Hand		
10	58.	Anti-Infective Agents	completion of	1.	Written	-	
	59.	Antifungal Agents:	topic,	05/84/8	notes/PPTs		1 11/)
		Amphotericin-B,	students will	1 7"	1		M. 1
		Griseofulvin,	understand		N .		
		Miconazole,	the Anti-				\
		Ketoconazole*,	Infective				1
		Itraconazole,	0.00				3.1
	-1	Fluconazole*,	agents and their		- 3.1		
		Naftifine	classification	*		*1	
		Hydrochloride	N 20 110 C		-		
	60.	Urinary Tract Anti-	s, chemical	OBLOW	Qu		()/)
		Infective Agents:	name,		q a	-	
		Norfloxacin,	chemical	' '			1 1.
		Ciprofloxacin,	structure	141			
		Ofloxacin*,	uses, stability				
		Moxifloxacin,	and storage		,		0.0
	61.	Anti-Tubercular	conditions,	Malph	9.1		100
		Agents: INH*,	different	1,000	XX		KV
		Ethambutol, Para	types of	1 '	N. 4 . 11 . 14		
		Amino Salicylic Acid,	formulations		12. ***		
	62.	Pyrazinamide,	and their	A.I I	27.		1 1
		Rifampicin,	popular	1991 041	2H		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
		Bedaquiline,	brand names	1			1 M
		Delamanid,	10 m 2 m 1 m 1		at I	31 ¹	V
		Pretomanid*	Design and the second	100	. In the second		
	63.	Antiviral Agents:	- '	23. "	1, 2		
		Amantadine	ALCOHOLD TO	F (, , , , -		
1		Hydrochloride,		100	[0.]		
		Idoxuridine,	a de transcription	W PY	124		()//
	,	Acyclovir*, Foscarnet,			1.3		1 St
		Zidovudine, Ribavirin,	1		and the second		1 V
7.7		Remdesivir,	D 10 1 3				
	t	11 7 11					
NA BOOK	(1	Favipiravir		-			
kala.	64.	Antimalarials:		> 41			
		Quinine Sulphate,		12/00	1/4/	L-10	()
		Chloroquine	1000	" 0"	1 62 4	43.1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	1	Phosphate*,	the state of	1		B	141,
1		Primaquine Phosphate.	A CONTRACTOR		0	1	
1	Land Advantage	Mefloquine*,	The state of	×.	\) ,	- 1013
1 Marion	NOH-SUE	Cycloguanil,	1000	-	Die A		The die
4 73	ALL VI	Pyrimethamine,	111		Billecton Prival		- Vin
1	THE PARTY	10	Am		Hamirpur VA	111	/
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-		Erythromycin,	s, chemical	03/05/24			10
	·	Erythromycin, Azithromycin,		03/05/24			10
	72.	Miscellaneous:	name, chemical	1.01			Af
		Chloramphenicol*	structure	03/26/0.			A
	es li	(MOA) Clindamycin		1 2 1 63 1 4			ΛΛ
		(MOA) Clindamycin	uses, stability	, ,			DD
		(WOA)	and storage				M.
	4	1,5	conditions,				
			different			,	
			types of				
			formulations				
	F 2		and their			4	
			popular				
			brand names		4 ga		
13	73.	Anti-Neoplastic	After	Oblertan	Hand		ΛΛ
	of t.v.	Agents:	completion of	1 x 15/1/2	Written		
	N-	Cyclophosphamide*,	topic,	1 ' '	notes/ PPTs		
	74.	Busulfan,	students will				1, 1
	/						^
		Mercaptopurine,	understand	c/ 1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
		Fluorouracil*,	the Anti-	100/1/1911			1 12
		Methotrexate,	neoplastic	12/1/0/34			12/
							141
	7	Dactinomycin,	agents and	2	3.54		1
1 3/2	75.	Doxorubicin	their	ANI IT	, i		-
* 1		Hydrochloride,	classification	104/05/a	d ·		111
		Vinblastine Sulphate,	s, chemical	10/2		\cap	1
	5				197		Ju
	I VA	Cicnistin*	name,	1		1/	1
	184	Cisplatin*, Dromostanolone	name,		No.	iredior Priacipal	

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	Duanianata		structure		07/05/14		\ DD
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			and storage				- 1
			conditions,				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
1	•		different				
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			popular			3	
	41	11.14	brand names		3		118

Teacher Signature

Academic I/C

Director/Principa