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-  **Special program for advanced learners**
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SPECIAL PROGRAMS FOR ADVANCED LEARNERS

- ✚ The college promotes advanced learners by organizing and encouraging them to participate in various competitions like research project competition, poster presentation competition, model making competition at University/State/National and International level.
- ✚ The advanced learners are encouraged to attend seminar/guest lecturers/workshops/NSS activities.
- ✚ For advanced learners, the college organizes training sessions on sophisticated instruments like HPLC, Gas Chromatography, Fluidized bed processor, FTIR etc.
- ✚ Coaching is given for competitive exams like GPAT /MBA entrance to students opting for higher studies.
- ✚ The advance learners are encouraged to attend the certificate courses conducted by college.
- ✚ The advanced learners are encouraged to learn from resources like SWAYAM, e-PG Pathshala, MOODLE etc.
- ✚ The academic achievers from each class are awarded during Annual Social Gathering.



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STATE LEVEL POSTER COMPETITION (2018-19)

Pharmacy student council of Maharashtra organized state level poster competition in SGB , Amravati University, in Jan. 2019 , the objective of competition to enhance research attitude, creativity, innovation, skills in students, various poster were presented by students of B.Pharm, M.Pharm & Pharm D course and the students from B.Pharm-I (Nived Sahu, Kishor Kaple & Aditya Kohekar) awarded with first prize

List of students participated in poster competition

Sr. no	Name of Student	Title of project	Award
1	Nived Sahu	Novel drug delivery system	I st Prize
2	Aditya Kohekar		I st Prize
3	Kishor Kaple		I st Prize
4	Rekhansh Jain	Essence cigar	Participant
5	Nikhil Dandage		Participant
6	Rohit Deshmukh	Branded vs. Generic drug	Participant
7	Rahul Nagargoje		Participant
8	Suraj Kute		Participant
9	Durgesh Wankhade	Nanoparticulate drug delivery system	Participant
10	Shivaji Mawal		Participant
11	Yogesh Thigle		Participant
12	Aman Pande	Consumer right choice : online pharmacy or retail pharmacy	Participant
13	Nilesh Chatur		Participant
14	Om Supe	Retail vs Online pharmacy	Participant
15	Rushikesh Chapaitkar		Participant
16	Tushar Thakare		Participant
17	Vishal Vahrade		Participant
18	Shreya Khandelwal	Stealth liposomes	Participant



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Student award certificate in poster competition



INNOSPIRE 2019

A national level innovative idea competition for rising innovators organized by Rajashri Shahu College of Pharmacy, Buldhana dated on 3 march 2019. The competition was co-Sponsored by Pharma Industries with a motive of building a pipeline for "Student-Industry Interaction". Posters were presented with various models & demonstrations. All Jury Members from Pharma Industries like GSK, Wokhardt, Genova Biopharma, Alkem Lab., Lupinet etc. There was excellent interaction between students and Industrial experts.

List of students participated in poster competition

Sr. no	Name of Student	Title of project	Award
1	Kishor Kaple	Novel drug delivery system	Participant
2	Aditya Kohekar		Participant
3	Parth Takey		Participant
4	Nived Sahu		Participant
5	Nikhil Dandage	Essence cigar: Model	Participant
6	Rekhansh Jain		Participant
7	Abrar Khaitib	Green synthesis	Participant



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AVISKAR COMPITATION (2017-18)

Inter-university student research convention, AVISKARI17 held at SGB, Amravati University dated on 28-29 Dec.2017, Miss. Rucha Mohta (Pharm D-V) bagged first prize in PG-MP category, her project entitled as "Case report on Pemphigus Vulgaris". She was also represented SGBU, Amravati at Maharashtra State Inter University Research Convention, MFKV, Rahuri, Maharashtra and got certificate for appreciation in disciple of Medicine & Pharmacy

Achievement

Sr.no.	Name of student	Title of project	Program	Award
1	Miss. Rucha Mohta (Pharm D-V)	Case report on Pemphigus Vulgaris	Inter-university level Aviskar Compilation	Ist Prize



ALL INDIA PHARMA QUIZ COMPETITION (2016-17)

All India pharmacy quiz competition organized by Madras Medical College, Chennai , almost 35 student participated from Amravati region from various pharmacy institution , TWO student from institute were qualified for final round at Chennai.

S.N.	Events name	Organized by	No of participant	Awards/Winners (outcomes)
1	Quiz competition	Madras Medical College ,Chennai	35	2 Qualified for final round at Chennai

Sr.No.	Name of Student	Award (outcome)
1	Bhavesh Kshirsagar	Qualified for final round at Chennai
2	Akash Gadhav	

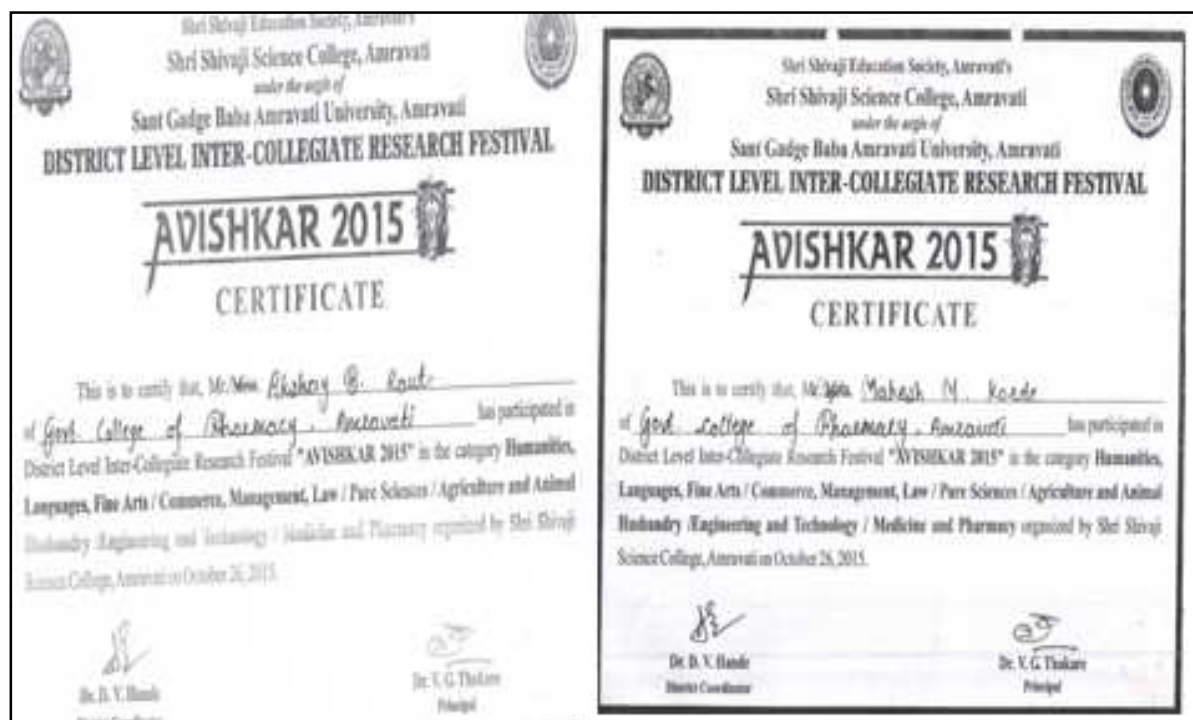


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AVISKAR COMPETATION (2015-16)

SGB, Amravati University undertaken research based inter university competition AVISKAR in 2015-16, Akshay Baburao Raut and Mahesh M. Korde recognized for best paper presentation in UG category and secured second prize in competition

s.n.	Name of student	Course /Class	Presentation Types (Paper/Poster/Model)	Venue	Award (outcome)
1	Akshay Baburao Raut	B.Pharm-II (IV SEM)	Research Paper	AVISHKAR -2015 (SGB Amravati University ,Amravati)	II nd Prize
2	Mahesh M.Korde	B.Pharm-II (IV SEM)	Research Paper	AVISHKAR -2015 (SGB Amravati University ,Amravati)	II nd Prize



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SEMINAR/GUEST LECTURERS/WORKSHOPS

S. No.	Name of faculty	Organization	Date	Topic
1	Madame Justyna Kowska	Director, JBL, Europe Council, Poland	23.1. 2018	Environmental Science
2	Dr. Marek Krukowski	Environmental Scientist, University of Warclow, Poland	23.1. 2018	Environmental issues
3	Dr. Vikram Pachlore	Dy. Director, MHRD, Delhi	23.1. 2018	Environmental concern and solutions
4	Mr. Arpit Rahamatkar	Executive HR, Lupin Ltd, Nagpur	23.2. 2018	Interviewing skills
5	Mr. Mithilesh Nagpure	QA Manager, Lupin Ltd, Nagpur	23.2. 2018	Development as per industrial requirement.
6	Dr. Nidhi Sapkal	Principal research coordinator, ZIM Labs. Nagpur	23.2. 2018	Industrial briefings
7	Prof. Basavarajappa	Principal, Bapuji College of Pharmacy, Karnataka	15.5. 2018	Future trends in research and career opportunities
8	Prof. Ashok Chanchi	Professor, Bapuji College of Pharmacy, Karnataka	15.5. 2018	Modern Analytical Techniques
9	Prof. Sadhana Shahi	Associate professor, GCOP, Aurangabad	12.7. 2018	Development of soft skill



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List of student participant

PAGE NO.		DATE
		12/7/19
Dr. Sadhana R. Shah		Prin
Associate Prof.		
Govt. College of Pharmacy, Amravati		
"Development of soft skills" - TOPIC.		
Audience: Pharm. D students.		
S.No.	Name of student	Sign.
1	Prajakta K. Nidhantkar	Talwar
2	Pankaj A. Pandhore	Sevak
3	Rushikesh S. Karkute	Prin
4	Keshini S. Dhande	Prin
5	Tejal M. Umap	Prin
6	Kalyani Londe	Prin
7	Shyam B. Khodve	S.B. Khodve
8	Yogesh Pawar	Prin
9	Shruti T. Tyagar	Tyagar
10	Vedanti V. Kale	Prin
11	Sushil A. Patil	Prin
12	Dipika Wanur	Prin
13	Rutuja U. Raut	Kantilal
14	Mayuri S. Chauhan	M.S. Chauhan
15	Rushikesh Asewar	Prin
16	Kanishk Deshmukh	Prin
17	Aboli V. Pawar	Pawar
18	Kalyani Londe	Prin
19	Prajakta K. Nidhantkar	Prin
20	Rushikesh Borwar	Prin
21	Pratik D. Muralkar	Prin
18	Yogesh Pawar	Yogesh
19	Rutuja Raut	Kantilal
20	Tejal Umap	Kantilal
	Kalyani Londe	Prin



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B. Pharm. I

PAGE No. 87

DATE

Date: 14/05/2018 Time: 2:30-4:30 pm

Speaker: Prof. A.P. Basavarajappa

Principal,
Bapuji College of Pharmacy,
Davangiri, Karnataka.

Topic: Anatomical terminology

Sr.	Name	Class	Sign
①	Mohd. Anas Furkan		✱
②	Arti Navnath Dukare		✱
③	Ashlesha Ajankar		Rajankar
④	Ashutosh Maitmare		Cot
⑤	Ashwini Yelam		Anelam
⑥	Chetan Khodke		Chetan
⑦	Komal Khandare		Khandare
⑧	Uli Nanoka		Nanoka
⑨	Pratibha A. Amzare		Amzare
⑩	Pranali B. Kadukar		Kadukar
⑪	Sagar R. Shahade		S.R.S
⑫	Sameer S. Kaware		Kaware

13)	Shivprasad J. Charan	<i>Shivprasad</i>
14)	Shridhar. H. Kadam	<i>Shridhar</i>
15	Shaikant Ambhore	<i>Shaikant</i>
16)	Shruti. G. Sarwade	<i>Shruti</i>
17)	Vaibhav R. Kakade	<i>Vaibhav</i>
18)	Vaishnavi D. Sable	<i>Vaishnavi</i>
19)	Vinod K. Kapre	<i>Vinod</i>
20)	Yogeshwar R. Yunde	<i>Yogeshwar</i>
<i>Shivprasad</i> 15/5/18		



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SPECIAL TRAINING PROGRAM (SKILL/ ENTREPRENEURSHIP DEVELOPMENT)

Govt. College of Pharmacy, Amravati

In collaboration with

MITCON, Amravati

Three days "Enterprenurship Awareness Training Camp"

10 Jan -12 Jan 2019


Three days Entrepreneurship Awareness Camp organized at Government college of Pharmacy, Amravati in collaboration with MITCON Amravati on 10-12 Jan 2019. The program was aimed to create awareness among faculty and students of Pharmacy about various facets of entrepreneurship as an alternative career option as also to highlight the merits of pursuing such an option. In EAC, about 80 students were exposed to different aspects of entrepreneurship, including opportunity guidance, services offered by agencies of support system etc. The event was inaugurated by Assistant Joint director, RO-DTE, Amravati-Mr. M.A. Ali, Mr. Anil Karwa-Vice President, MITCON Amravati, Dr. S. S. Khadabadi- Principal, Government College of Pharmacy, Amravati, Dr. B. A. Baviskar- Program coordinator, Dr. S. L. Deore- Program Co-coordinator, Dr. N. N. Inamdar, Dr. N. Kotagale, Dr. B. V. Ghule, Dr. V. P. Nagulwar, Dr. M. S. Charde, Mr. G. S. Bangale, Mr. H. N. Gupta. Expert speaker Dr. Godbole from Nagpure, Mr. Sarvesh Rathí, Mr. Zanwar and Mr. Deshmukh have covered various government funding schemes, soft skills necessary for entrepreneurs, project preparation and marketing skills respectively. Dr. Godbole given wonderful and very simpler presentations with unique examples on entrepreneurship opportunities in pharma field. On third day students visited different industries from MIDC, Amravati like plastic bottles, water tanks&dustbins, spices, glass work and food products.



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List of student participation

G.A.C.
Duration: 10/11/19 to 12/11/19
Venue: Govt. Pharmacy College, Amravati
Attendance Sheet



Sr. no.	Name of Participants	Day-1	Day-2	Day-3
1	Amreen Alim Qureshi	Amreshi	Amreshi	Amreshi
2	Mukta madan Selokar	Peskar	Peskar	Peskar
3	Farhin P. Khan	F Khan	F Khan	F Khan
4	Avantika R. Shitka	Asitka	Asitka	Asitka
5	Arushi S. Madhoo	Arushi	Arushi	Arushi
6	Chintamani G. Khatkar	Chintamani	Chintamani	Chintamani
7	Yogesh P. Nikam	Yogesh	Yogesh	Yogesh
8	Pooja S. Khadke	Pooja	Pooja	Pooja
9	Vaishnavi G. Gole	Vaishnavi	Vaishnavi	Vaishnavi
10	Dhanashree S. Durai	Durai	Durai	Durai
11	Pallavi D. Janarkar	Pallavi	Pallavi	Pallavi
12	Manish V. Harne	Manish	Manish	Manish
13	Kanchan A. Hiv	Kanchan	Kanchan	Kanchan
14	Ankita S. G. Gonde	Ankita	Ankita	Ankita
15	Shyam B. Dolphode	Shyam	Shyam	Shyam
16	Roshan V. Padwal	Roshan	Roshan	Roshan
17	Shital S. Rahangale	Shital	Shital	Shital
18	Heta S. Gupta	Heta	Heta	Heta

OST-NMAT: Entrepreneurship Awareness Camp



Sr. no.	Name of Participants	Day-1	Day-2	Day-3
19	Kiran B. Pinjarkar	Kiran	Kiran	Kiran
20	Khushi A. Rode	Khushi	Khushi	Khushi
21	Radhika S. Ingole	Radhika	Radhika	Radhika
22	Vibhavana A. Rode	Vibhavana	Vibhavana	Vibhavana
23	Kothari Dharshani	Dharshani	Dharshani	Dharshani
24	Malsumindar C.C.	Malsumindar	Malsumindar	Malsumindar
25	Mangire Smriti S.	Smriti	Smriti	Smriti
26	Preraj R. Gudape	Preraj	Preraj	Preraj
27	Nikhil S. Dandekar	Nikhil	Nikhil	Nikhil
28	Neha K. Goswami	Neha	Neha	Neha
29	Archana V. Soyam	Archana	Archana	Archana
30	Shruti A. N. N. N.	Shruti	Shruti	Shruti
31	Shruti A. N. N. N.	Shruti	Shruti	Shruti
32	Rohini B. Dhokane	Rohini	Rohini	Rohini
33	Sanjayani C. Chavhan	Sanjayani	Sanjayani	Sanjayani
34	Avantika D. Khatkar	Avantika	Avantika	Avantika
35	Kiran V. Wadkar	Kiran	Kiran	Kiran
36	Katrin K. Kadam	Katrin	Katrin	Katrin



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2.2.1: Special program for slow and advanced learners

				
Sr. no.	Name of Participants	Day-1	Day-2	Day-3
37	Rasika P. Gajjar	<i>Rasika</i>	<i>Rasika</i>	<i>Rasika</i>
38	Pritya S. Deshmukh	<i>Pritya</i>	<i>Pritya</i>	<i>Pritya</i>
39	Anvita K. Dhote	<i>Anvita</i>	<i>Anvita</i>	<i>Anvita</i>
40	Datta M. Dhakane	<i>Datta</i>	<i>Datta</i>	<i>Datta</i>
41	Kabir S. Shaikh	<i>Kabir</i>	<i>Kabir</i>	<i>Kabir</i>
42	Ratnash S. Jain	<i>Ratnash</i>	<i>Ratnash</i>	<i>Ratnash</i>
43	Santosh D. More	<i>Santosh</i>	<i>Santosh</i>	<i>Santosh</i>
44	Badrude Amil B.	<i>Amil</i>	<i>Amil</i>	<i>Amil</i>
45	Santosh N. Bhadange	<i>Santosh</i>	<i>Santosh</i>	<i>Santosh</i>
46	Sushant K. Dargone	<i>Sushant</i>	<i>Sushant</i>	<i>Sushant</i>
47	Tulsi A. Fule	<i>Tulsi</i>	<i>Tulsi</i>	<i>Tulsi</i>
48	Syed Sajid ali	<i>Sajid</i>	<i>Sajid</i>	<i>Sajid</i>
49	Pritya R. Kattide	<i>Pritya</i>	<i>Pritya</i>	<i>Pritya</i>
50	Sumit A. Gaur	<i>Sumit</i>	<i>Sumit</i>	<i>Sumit</i>
51	Pankaj M. Jadhav	<i>Pankaj</i>	<i>Pankaj</i>	<i>Pankaj</i>
52	Yashwantrao Patil	<i>Yashwantrao</i>	<i>Yashwantrao</i>	<i>Yashwantrao</i>
53	Sumit D. Jainwal	<i>Sumit</i>	<i>Sumit</i>	<i>Sumit</i>
54	Mangur W. Toke	<i>Mangur</i>	<i>Mangur</i>	<i>Mangur</i>

				
Sr. no.	Name of Participants	Day-1	Day-2	Day-3
55	Dhruvi R. Doghmare	<i>Dhruvi</i>	<i>Dhruvi</i>	<i>Dhruvi</i>
56	Satish D. Kulkarni	<i>Satish</i>	<i>Satish</i>	<i>Satish</i>
57	Dnyaneshwar V. Kade	<i>Dnyaneshwar</i>	<i>Dnyaneshwar</i>	<i>Dnyaneshwar</i>
58	Kalyani V. Bhadwaj	<i>Kalyani</i>	<i>Kalyani</i>	<i>Kalyani</i>
59	Minakshi S. Waghre	<i>Minakshi</i>	<i>Minakshi</i>	<i>Minakshi</i>
60	Sagar V. Borse	<i>Sagar</i>	<i>Sagar</i>	<i>Sagar</i>
61	Nitesh M. Jare	<i>Nitesh</i>	<i>Nitesh</i>	<i>Nitesh</i>
62	Kshipta P. Deshmukh	<i>Kshipta</i>	<i>Kshipta</i>	<i>Kshipta</i>
63	Prerna Chakraborty	<i>Prerna</i>	<i>Prerna</i>	<i>Prerna</i>
64	Upendra R. Ram	<i>Upendra</i>	<i>Upendra</i>	<i>Upendra</i>
65	Leena P. Joge	<i>Leena</i>	<i>Leena</i>	<i>Leena</i>
66	Amil Bhalame	<i>Amil</i>	<i>Amil</i>	<i>Amil</i>
67	Amol S. Dhatkade	<i>Amol</i>	<i>Amol</i>	<i>Amol</i>
68	Vidhi Ramsha	<i>Vidhi</i>	<i>Vidhi</i>	<i>Vidhi</i>
69	Veishali A. Jadhav	<i>Veishali</i>	<i>Veishali</i>	<i>Veishali</i>
70	Komal D. Waghmare	<i>Komal</i>	<i>Komal</i>	<i>Komal</i>
71	Pritya B. Barchal	<i>Pritya</i>	<i>Pritya</i>	<i>Pritya</i>
72	Namrata M. Marathe	<i>Namrata</i>	<i>Namrata</i>	<i>Namrata</i>



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EXPOSURE TO SOPHISTICATED INSTRUMENTS



Exposure to Friability test apparatus



UV Spectrophotometric analysis



Manufacturing of microparticulate DDS



HPLC analysis



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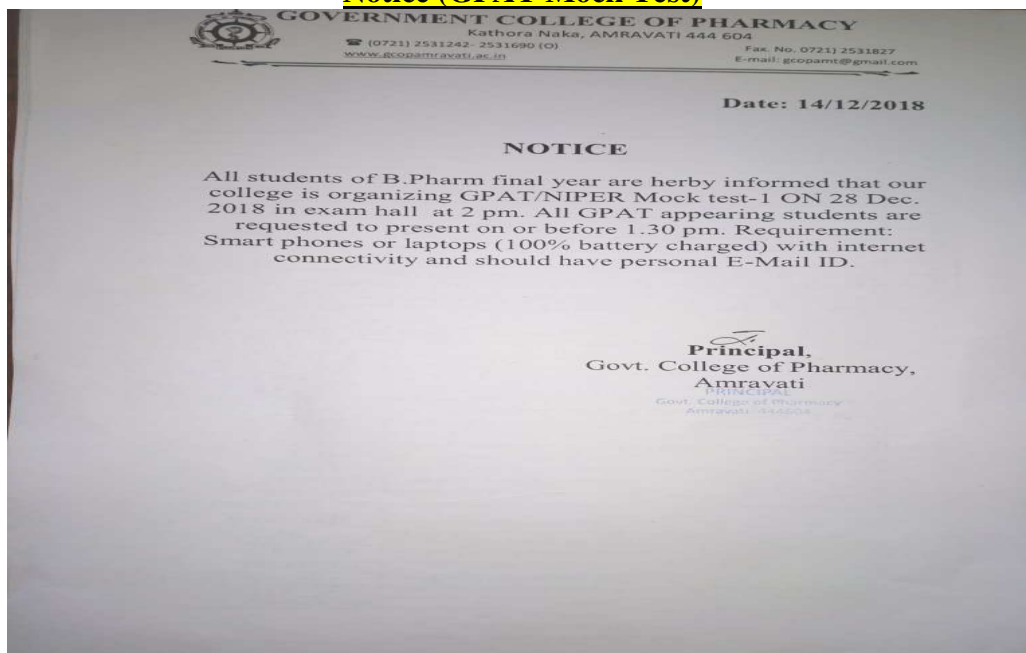


Gas chromatographic analysis



Drug quantitative analysis

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SPECIAL COACHING OF COMPETITIVE EXAMS (GPAT/MBA) ENTRANCE**Notice (GPAT Mock Test)****Student Attendance**

Govt. College of Pharmacy, Amravati GPAT-Online Mock test Date:28/12/2018			
Sr. No.	Name	E-Mail ID	Mobile Number
1	Yogesh S. Thigle	yogeshthigle35@gmail.com	9975494923
2	Shivraj L. Tawde	shivrajtawde216@gmail.com	7625 953 2599
3	Dipika Vinwani	vinwani2002@gmail.com	951126729
4	Vivek N. Kacode	viveknkacode@gmail.com	864511874
5	Nilesh G. Bajad	nileshbajad199@gmail.com	7020461806
6	Shrinivas B. Sangale	shrinivasbhangale123@gmail.com	9768542552
7	Georgi M. Kothe	georgimkothegmailing	897162498
8	Tushar S. Desai	tushar.desai@ymail.com	9905986715
9	Darshan D. Marathe	darshanmarathe10@gmail.com	7020248498
10	Pankaj S. Kikhe	pankajkikhe@gmail.com	7018173340
11	Shivaji B. Malwal	shivajimalwal@gmail.com	7620617158
12	Pravin G. Apte	pravinapteleg@gmail.com	8308294543
13	Durgeshwar Khandagale	durgeshwar.khandagale@gmail.com	9921835489
14	Bhagwant S. Sirtat	bhagwantsirtat@gmail.com	9158369213
15	Vineth F. Bankare	vinethbankare@gmail.com	9840555723
16	Atish R. Parthom	atishrparthom@gmail.com	7057037421
17	Nilesh S. Shukle	nileshshukle3509@gmail.com	8237107615
18	Pooja S. Sangale	poojasangale01@gmail.com	7768943424
19	Rohini S. Palekar	rohini.palekar184@gmail.com	8857357082
20	Shrutika A. Talwar	shrutikalimale06@gmail.com	7387625170
21	Pragati R. Chandak	pragatichandak10@gmail.com	9156932291
22	Nazamunnisa S. Pathan	nazamunnisa76@gmail.com	8411919327
23	Dipali R. Sonawane	dipalisonawane32@gmail.com	9420561862
24	Sandesh N. Panpali	sandeshpanpali37@gmail.com	7720282904
25	Vivek K. Kulkarni	vivekkulkarni7@gmail.com	8206189071
26	Monika M. Jadhav	monikamjadhav42@gmail.com	9923647408
27	Pranali D. Shahare	pranali.shahare@gmail.com	9168150023
28	Dipali U. Bais	dipalibais99@gmail.com	9120969165
29	Ashwini R. Mehta	ashwinimehta7@gmail.com	9420877635
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Final Result of GPAT mock test

Govt. College of Pharmacy, Amravati			
GPAT/NIPER Mock Test 2018, 28/12/2018			
Final Result Declaration			
Student Name	Right Answers	Wrong Answers	Final Total marks
DiapliSonawane	66	33	256
NileshGajananBajad	62	49	236
ShivajiBabanMawal	62	51	235
Bhagwat SurykantSirsat	59	48	224
Shrinivas Bahadur Sangole	57	32	220
Durgesh R Wankhade	54	30	209
UmeshPandurangThombare	53	24	206
vivekvasantkarande	53	54	199
Pragati Rajesh Chandak	51	31	196
Ashwini Ravindra Mehta	52	71	190
Yogesh ShivajiThigle	49	46	185
DipaliUttam Bais	48	37	183
Puja Suresh Sangle	46	35	175
Dipikawanwani	44	45	165
Pravin G. Atole	44	51	163
ShrutiAmbadasTalmale	43	44	161
Pushpajchikhle	42	44	157
NileshShelke	41	54	151
VivekjanardanKokate	39	43	145
Swapnil MadhukarRindhe	38	52	139
Monika madhavraojadhav	37	48	136
TusharDeosarkar	36	36	135
ShivrajLaxmanraoTawde	35	47	128
NazranaNaazShahejadkhanPathan	34	37	127
DarshanDinkarmarathe	36	89	122
Sandesh NimbajiPanpatil	30	35	111
RohiniSubhashPalekar	29	63	100
PranaliDevidasShahare	25	49	87.8
Satish RamchandraPayghan	22	34	79.5

Award for achievers

Dipali sonawane, Nilesh bajad, Shivaji mawal aquired first three possition among the participinat & rewarded by books entitled as "The Pearson Guide to GPAT & Other Entrance Examination in Pharmacy"

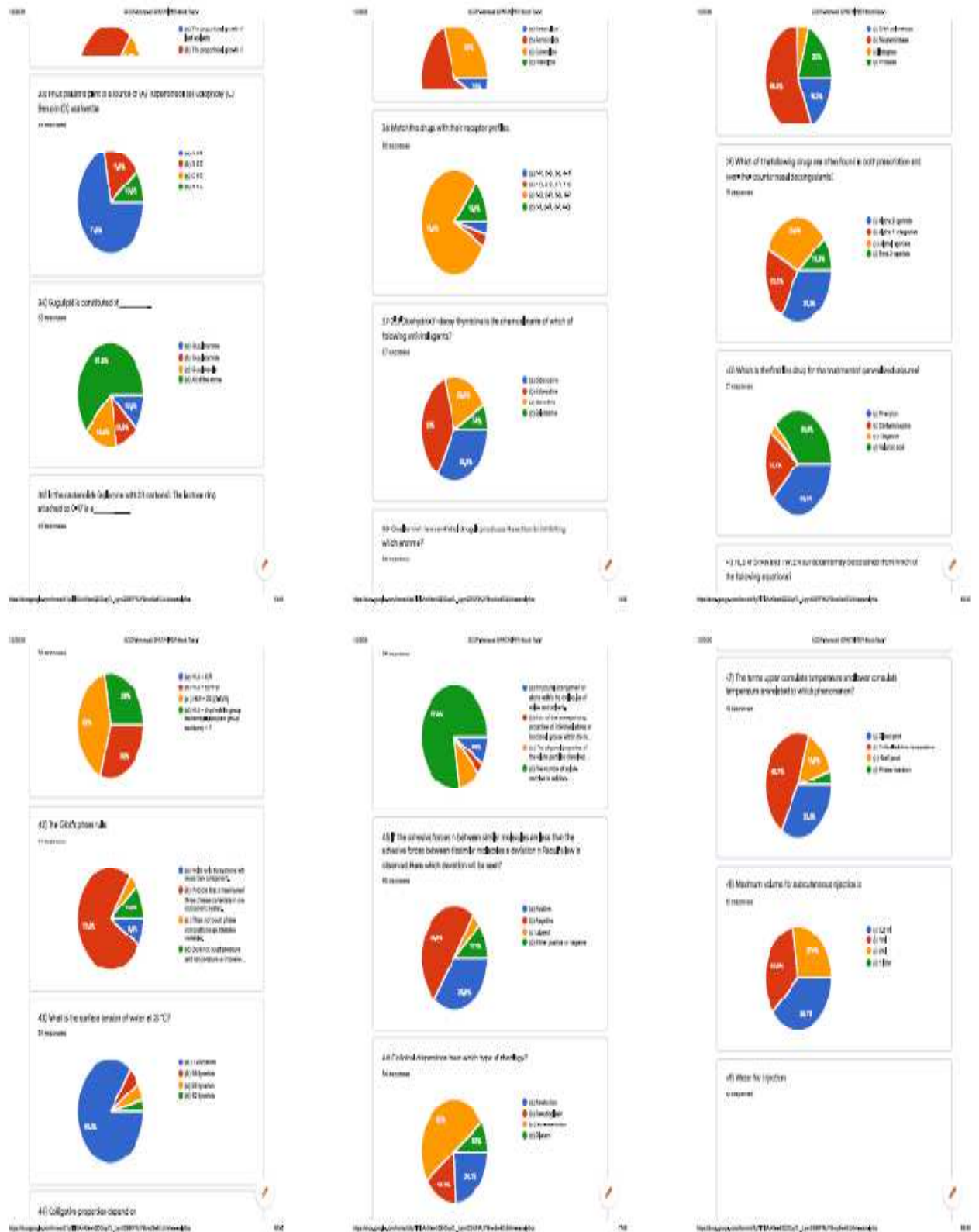


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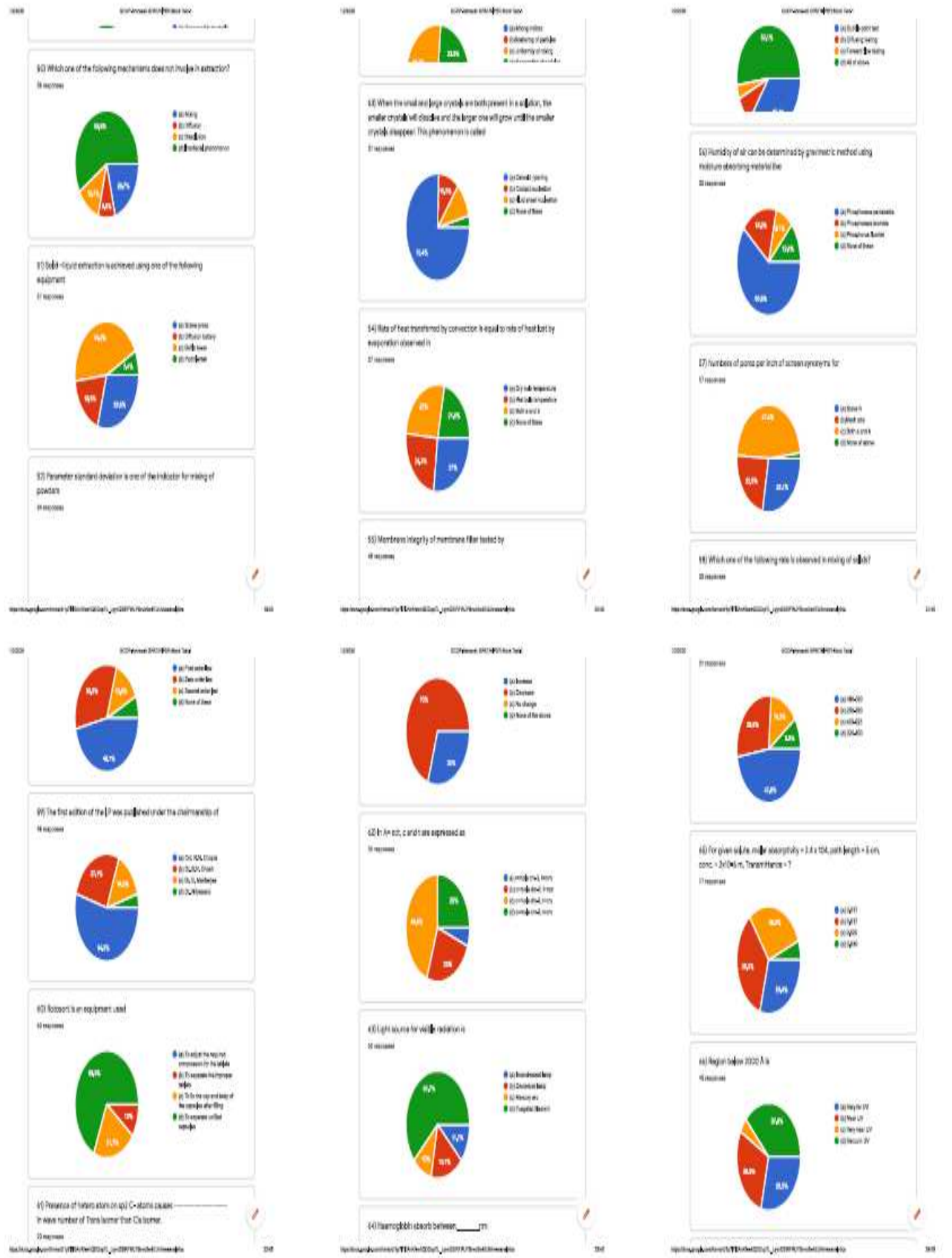
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Government College of Pharmacy, Amravati



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2.2.1: Special program for slow and advanced learners

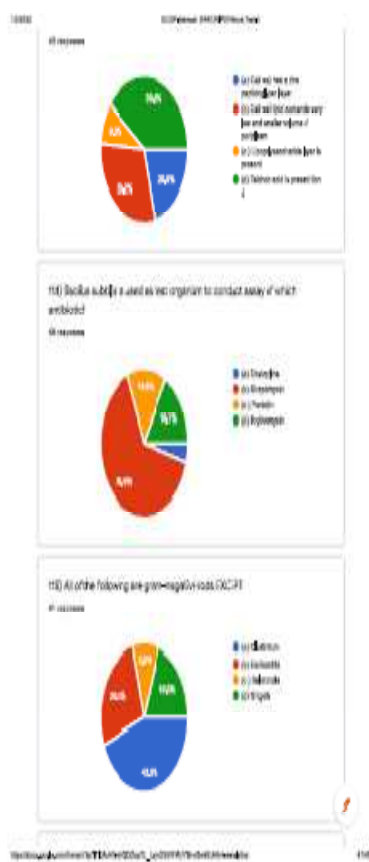
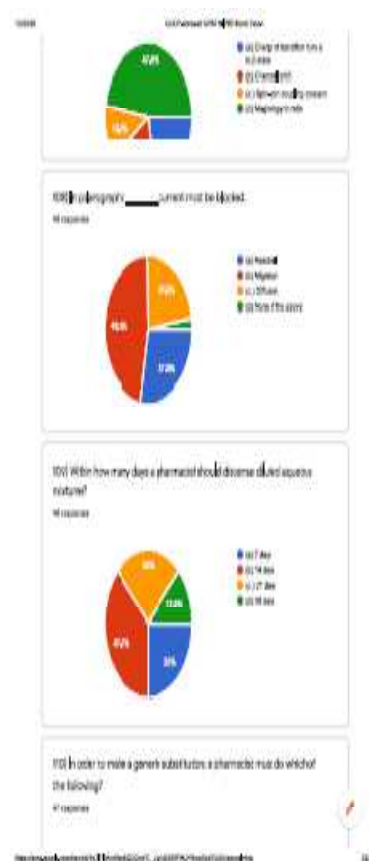
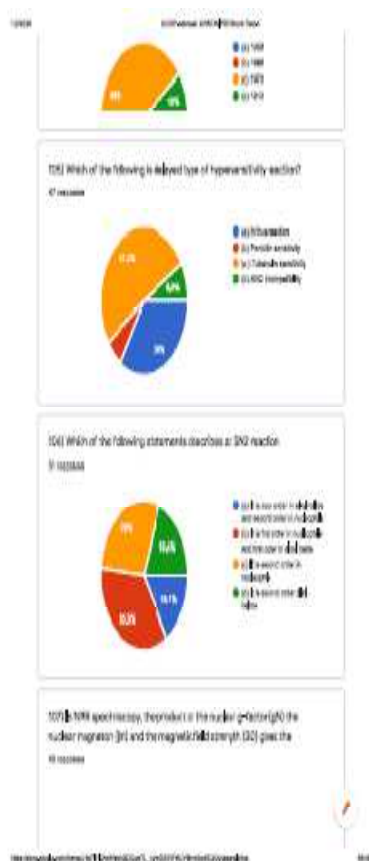
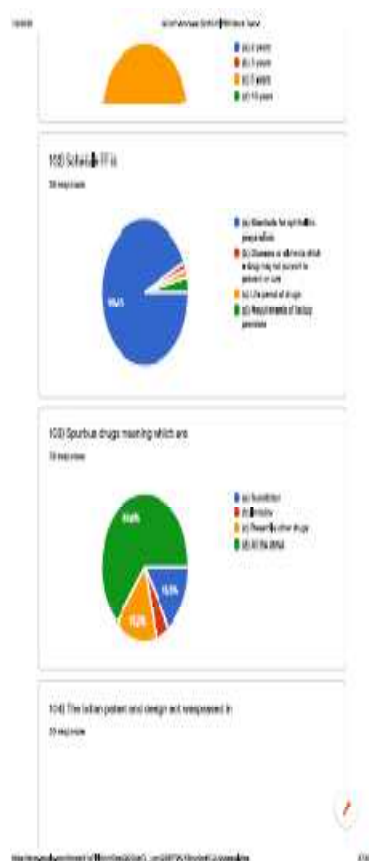


2.2.1: Special program for slow and advanced learners



2.2.1: Special program for slow and advanced learners









Online Courses : SWAYAM, NPTEL, E-Shodhsindhu**List of student registered for online course (SYAYAM)**

B-Pharm II nd year Students Registered to Swayam :-		
i)	Aman S. Pande	Amanpande358@gmail.com
ii)	Nived R. Sahu	Nivedsahu7@gmail.com
iii)	Om Supe	Supem555@gmail.com
iv)	Rupesh Doifode	rupeshdoifode2@gmail.com
v)	Nilesh Chatur	Nileshchatur2013@gmail.com
vi)	Suraj Kute	Surajkute31@gmail.com
vii)	Sagar Akhade	Sagar.akhade99@gmail.com
viii)	Vishal Varhade	Vishalvarhade1999@gmail.com
ix)	Pratik Junekar	Pr Junekar@gmail.com
x)	Prathamesh Kawadkar	Kawadkar PK PK@gmail.com
xi)	Suhaz Atram	Suhazatram178@gmail.com
xii)	Rohit Deshmukh	rohitdeshmukh1144@gmail.com
xiii)	Aditya Kohekar	Akohekar@gmail.com
xiv)	Rushikesh Chapaitkar	chapur chapurushikesh@gmail.com
xv)	Kishor Kaple	kishorkaple912@gmail.com
xvi)	Parth Takey	Parthtakey0@gmail.com
xvii)	Shubham Deshmukh	Shubhdeshmukh@321@gmail.com
xviii)	Tushar Thakare	Tdthakare28@gmail.com
xix)	Monal Murhekar	Shubhammurhekar286@gmail.com
xx)	Anuj Kalone	anujkalone91630@gmail.com
xxi)	Hrutikesh Khodke	hrutikeshkhodke@gmail.com
xxii)	Jyoti Sawale	Jgsawale8@gmail.com
xxiii)	Janvi Raut	Janviraute610@gmail.com
xxiv)	Krutika Rohankar	Krutikarohankar64@gmail.com
xxv)	Bhumnika Bidwai	Shivanibidwai06@gmail.com
xxvi)	Vaishali Dhupad	bhonevaishali146@gmail.com
xxvii)	Megha Tambile	mvrtambile1999@gmail.com
xxviii)	Pooja Wagh	poojawagh24112000@gmail.com
xxix)	Samruddhi Chavhan	chavhansamruddhi@gmail.com
xxx)	Kalyani Haramkar	kalyaniharamkar2000@gmail.com



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SWAYAM program registered details:

 <p>About Swayam All Courses National Coordinators Local Chapters</p> <p>Home > Profile</p> <h3>Account Info</h3> <p>EDIT PROFILE</p> <p>Name * Aman Shankarprasad Pande</p> <p>Mobile Number * +91 98600 97874</p> <p>Email * amanpande358@gmail.com</p> <p>Which age group do you belong to? * 13-20</p> <p>Country residing in currently *</p>	 <p>About Swayam All Courses National Coordinators Local Chapters</p> <p>Home > Profile</p> <h3>Account Info</h3> <p>EDIT PROFILE</p> <p>Name * Khushi Vijay Patil</p> <p>Mobile Number * +91 86002 65882</p> <p>Email * khushipatilvijay@gmail.com</p> <p>Which age group do you belong to? * 13-20</p> <p>Country residing in currently * India</p> <p>Profession * Student</p> <p>Highest Qualification * 4 Year - Bachelor's degree</p> <p>Year of Graduation * 2019</p>
<p>swayam.gov.in/profile</p>  <p>About Swayam All Courses National Coordinators Local Chapters</p> <p>Home > Profile</p> <h3>Account Info</h3> <p>EDIT PROFILE</p> <p>Name * Prathamesh Kawadekar</p> <p>Mobile Number * +91 86652 85738</p> <p>Email * kawadekarpk@gmail.com</p> <p>Which age group do you belong to? * 13-20</p> <p>Country residing in currently *</p>	<p>https://swayam.gov.in/profile</p>  <p>About Swayam All Courses National Coordinators Local Chapters</p> <p>Home > Profile</p> <h3>Account Info</h3> <p>EDIT PROFILE</p> <p>Name * Prathma gade</p> <p>Mobile Number * +91 88202 89088</p> <p>Email * prathmagade1999@gmail.com</p> <p>Which age group do you belong to? * 20-30</p> <p>Country residing in currently * India</p> <p>Profession * Student</p> <p>Highest Qualification * 4 Year - Bachelor's degree</p>



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Acknowledgment of Merits

Every year annual social gathering special achievers in university and college examination awarded with certificates and medals.

UNIVERSITY EXAMINATION ACHIVER (MERIT)

Year	Name of Student	Course	Merit order
2018-19	Sugandha Rajiv Rohatagi	B.Pharm	2
	Yogesh P Nikam	M.Pharm (Pharmacognosy)	1
	Nikita R Takale	M.Pharm (Pharmacognosy)	2
	Neha N Goswami	M.Pharm (Pharmacognosy)	3
2017-18	Bhaves A Kshirsagar	B.Pharm	1
	Akash S Gadhave	B.Pharm	12
	Namrata V Fiske	M.Pharm (Pharmacognosy)	1
	Meenal S Mahajan	M.Pharm (Pharmacognosy)	2
	Swapnil R Ghorpade	M.Pharm (Pharmacognosy)	3
	Isha S Pawar	Pharm D	1
	Shubham B Gulhane	Pharm D	2
	Anupama S Gore	Pharm D	3

University merits: 2018-19

MASTER OF PHARMACY (Pharmacognosy & Phytochemistry)					
1	44413	YOGESH PRABHAKAR NIKAM At – Pokhari , Po – Saygaon , Tq – Ambajogai, Dist – Beed - 431 523	1	8.16	Govt. College of Pharmacy , Amravati
2	44409	KU NIKITA RAJENDRA TAKALE Near jain Mandir , Advi Path, vita, Dist – Sangli - 415 311	2	8.08	Govt. College of Pharmacy , Amravati
3	44408	KU NEHA NANAGIRI GOSWAMI C/O – D.B. Dongre, Charde Lay-out, Dhantoli, Katol Dist – Nagpur – 441 302	3	7.92	Govt. College of Pharmacy , Amravati



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ST/Exam/Vor-48/05-06/50R

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Official Publication of Amravati University

PART-THREE

THURSDAY 5th DECEMBER, 2019

Notification No. _____ 174 /2019

Subject : Merit List of Summer 2019.

In continuation to the Notification No. EMS 458/26.06.2019, EMS 829, 830, 831, 832, 833, Dt. 22.08.2019, EMS 839 Dt - 23.08.2019 & EMS 848 Dt - 11.09.2019 regarding publication of result of examinations, the Merit list of the successful candidates at B.Pharm and M.Pharm. & Pharm- D Summer 2019 examinations is hereby published as per provision of para (33) of Ordinance No.6 as under :-

BACHELOR OF PHARMACY

Sr. No.	Roll No.	Name of the Students with address	Order Of Merit	Obtd. CGPA	Name of college
1	40251	KU DIKSHA ARUN KHARAT Gajanan Nagar, Ward no- 18, Chikhali Dist - Buldana - Pin - 443201	1	7.94	Anuradha College of Pharmacy, Chikhli
2	40112	KU SUGANDHA RAJEEV ROHATGI Flat No. - 202, Shivam Villa Appt. Plot No - 137, Near Amor Nagar Manewada Road, Nagpur - 444001	2	7.93	Govt. College of Pharmacy, Amravati
3	40241	GOPAL BHAGWAN KHODVE A/P - Deoulgaon Mali, Tq - Mehkar, Dist - Buldana - 443301	3	7.91	Anuradha College of Pharmacy, Chikhli
4	40263	KU PRIYANKA BHASKARRAO RATHOD Deshmukh - Je-out, Ward No - 18, Chikhali, Dist - Buldana - Pin - 443201	4	7.88	Anuradha College of Pharmacy, Chikhli
5	40238	GAJANAN MANOHAR KALE A/P - Chincholi Borey, Tq - Mehkar, Dist - Buldana - 443301	4	7.88	Anuradha College of Pharmacy, Chikhli
6	40221	AKSHAY JANARDAN JUMDE A/P - Wadner Bholaji, Tq - Nandura, Dist - Buldana - 443101	5	7.86	Anuradha College of Pharmacy, Chikhli
7	40314	SHYAM SUDHAKAR GOMTE At - Sisarkheda, Po - Bharadi, Tq - Sillod, Dist - Aurangabad - 431113	6	7.84	Anuradha College of Pharmacy, Chikhli
8	40162	KU NISHA RAJENDRA PATIL A/P - Ramaji Nagar, Shalapur, Anjangaon Surji, Dist - Amravati - 444705	7	7.76	S.G.S.P.S. Institute of Pharmacy, Akola
9	40275	MAHESH GAJANAN UMBARKAR At - Hingane Gawhad, Po - Momulwadi, Tq - Nandura, Dist - Buldana - 443401	8	7.74	Anuradha College of Pharmacy, Chikhli
10	40253	KU JAYSHRI VIJAY THORAT A/P - Kelwad, Tq - Chikhali, Dist - Buldana - 443001	9	7.73	Anuradha College of Pharmacy, Chikhli
11	40320	VAIBHAV PANDURG CHOPADE A/P - Shivani Pise, Tq - Lonar, Dist - Buldana - 443302	10	7.71	Anuradha College of Pharmacy, Chikhli

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S1/Exam/or-48/05-06/5OR

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Official Publication of Amravati University

PART-THREE

THURSDAY 9th FEB'2018

Notification No. _____ 5 /2018

Subject : Merit List of Summer 2017.

In continuation to the Notification No. EMS02/30.05.2017, EMS 61 Dt. 01.07.2017 & EMS31/22.9.2017 regarding publication of result of examinations , the Merit list of the successful candidates at B.Pharm and M.Pharm. Summer 2018 examination is hereby published as per provision of para (33) of Ordinance No.6 as under :-

BACHELOR OF PHARMACY

No	Roll No.	Name of the Student with address	Order Of Merit	Obtd. CGPA	Name of college
1	16341074	BHAVESH ANIL KSHIRSAGAR Pooja Medical, Killa Road, Naswala Chowk, Malkapur, Dist - Buldana Pin - 443101	1	7.84	Govt. College of Pharmacy, Amravati
2	16341245	KU ASHWINI DILIP TONDE Near Raut Wadi Bus Stop, Chikhali Dist - Buldana Pin - 443201	2	7.75	Anuradha College of Pharmacy, Chikhli
3	16341028	KU RIYA DHARMESH BAKHTAR Kanwar Nagar, Near SBI ATM, Amravati Dist - Amravati Pin- 444606	3	7.73	Vidya Bharati College of Pharmacy Amravati
4	16341022	KU RENUKA KUSHAL BADWE Near Bank of Maharashtra, Tukum Chandrapur Pin - 442401	4	7.72	Vidya Bharati College of Pharmacy Amravati
5	16341199	AAFTAB SHAFI SHAIKH Mirza Nagar, In Front Of Taqwa Masjid, Buldana Pin - 443001	4	7.72	Anuradha College of Pharmacy, Chikhli
6	16341366	KU VRUSHALI GAJANAN PATIL At - Wadgaon (Pa), Po - Wadshingi , Tq - Jalgaon (Ja) Dist - Buldana 443402	5	7.71	Rajarshi Shahu College of Pharmacy Buldana
7	16341264	MADAN SOPAN EKHANDI At - Selu , Po - Dawargaon , Tq - Sindkhed Raja, Dist - Buldana Pin - 443203	5	7.71	Anuradha College of Pharmacy, Chikhli
8	16341401	KU MANISHA KAILAS KAWANE At - Anand Nagar, Po - Hiwara Sangam , Tq - Mahagaon, Dist - Yeotmal Pin - 445204	6	7.63	S.N. Institute of Pharmacy. pusad
9	16341396	KU APURVA ASHOKREDDY NALMELWAR At . Po - Shirpur , Tq - Kinwat , Dist - Nanded Pin - 431804	7	7.62	S.N. Institute of Pharmacy. pusad
10	16341363	KU RUPALI LALITKUMAR KOTHARI Vidarbha Housing Society, Suwarna nagar, Buldana Pin - 443001	8	7.61	Rajarshi Shahu College of Pharmacy Buldana
11	16341247	KU MANISHA GANESH SOLANKI At. Po - Kolaria, Tq - Chikhli, Dist - Buldana Pin - 443201	8	7.61	Anuradha College of Pharmacy, Chikhli
12	16341069	AKASH SHYAM GADHAVE Salipura Near N.P. School No. 3 , Karanja (Lad) Dist - Washim Pin - 444105	9	7.60	Govt. College of Pharmacy, Amravati

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MASTER OF PHARMACY (Pharmacognosy & Phytochemistry)					
1	16443677	KU NAMRATA VINAYAKRAO FISKE 301 Pushp Appartment , Khandelwal Nagar, Sai nagar, Akoli Road, Amravati Pin - 444603	1	7.74	Govt. College of Pharmacy , Amravati
2	16443674	KU MEENAL SHANKAR MAHAJAN A/E 807 Housing Board Colony, Pithampur, Sector1, Dist - Dhar Indore , (MP) Pin - 454775	2	7.55	Govt. College of Pharmacy , Amravati
3	16443679	SWAPNIL RAMESH GHORPADE Behind Nagar Palika, Po – Shendurjanaghat , Tq – Warud Dist – Amravati Pin - 444907	3	7.53	Govt. College of Pharmacy , Amravati

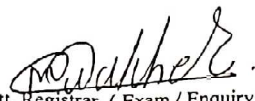
PHARM - D					
1	16345509	KU ISHA SAINATHI PAWAR 15, Samarth Colony, Morshi Dist – Amravati Pin - 444905	1	1146	Govt. College of Pharmacy , Amravati
2	16345527	SHUBHAM BABARAO GULHANE New Hanuman Nagar, Behind VMV College, Amravati Pin - 444604	2	1097	Govt. College of Pharmacy , Amravati
3	16345507	KU ANUPAMA SANJAY GORE Tirupati Nagar , Behind Rangoli Lawn, Kathora Naka, Amravati Pin - 444604	3	1075	Govt. College of Pharmacy , Amravati

Sd /-


By Order Of Board Of Examination
Director of Board Of Examination & Evaluation

COPY to :-

1. All Merit Students.
2. All Hon'ble Members of Managements Council, SGB Amravati University.
3. All Hon'ble Members of Board of Exams. SGB Amravati University.
4. All Hon'ble Members of Academic Council, SGB Amravati University.
5. Principals of all concerned Colleges.
6. Accounts & Finance Officer, SGB Amravati University.
7. Director (BCUD) , SGB Amravati University.
8. Director, Inf. & Empl. Guidance Bureau Centre, Amravati.
9. Dy. Registrar (Devp.) SGB Amravati University.
10. Asstt. Registrar, (Admn.) SGB Amravati University.
11. Asstt. Registrar (Tab.) , SGB Amravati University.
12. Asstt. Registrar (Enrol.) , SGB Amravati University.
13. P.R.O. SGB Amravati University.
14. Editors & District Representatives, News Papers, Amravati.


Asstt. Registrar (Exam / Enquiry)
Sant Gadge Baba Amravati University




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SPECIAL PROGRAMS FOR SLOW LEARNER LEARNERS

- ✚ Tutorial/Remedial Classes are organized for selected subjects.
- ✚ Assignments are given to the students to enhance self-learning.
- ✚ Question bank provided to the students containing important questions on the topic and frequently asked questions in the University examination.
- ✚ Students are encouraged to watch videos/recorded lectures uploaded on MOODLE for better understanding of the subject.
- ✚ Class notes are provided for weaker students.
- ✚ Students having poor performance in semester assessment tests/sessional examination are given an opportunity to appear for re-assessment/improvement sessional examination.
- ✚ Mentors are allotted for counseling of students
- ✚ Individual attention is given to the students, where sessions are conducted to solve students' difficulties and doubts.



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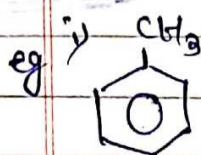
Assignment NO. 1

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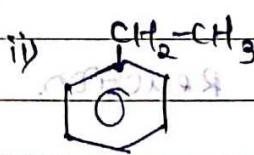
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Q ① What is alkyl benzene and give example.

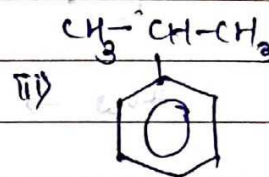
→ The homologous of benzene having single alkyl group are named as alkyl benzene. These are made up of benzene ring to which alkyl group is attached.



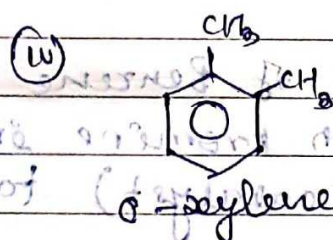
Toluene
(methyl benzene)



Ethyl
Benzene

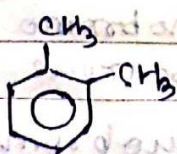


Isopropyl
benzene

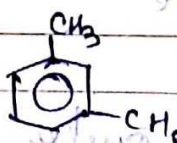


Q ② Write Isomeric structure of xylene?

→ There are three structures of xylene



o-xylene

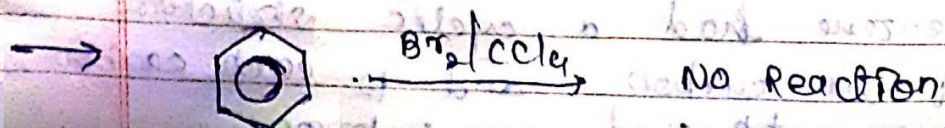


m-xylene



p-xylene


③ Benzene on reaction with Br₂ in presence of CCl₄ give reaction



Expt. 2.

Benzene did not decolourise in presence of carbon tetrachloride (CCl_4) and does not give reaction.

Q. ⑤


 + dil. KMnO_4 $\xrightarrow{\text{alk.}} \text{No reaction}$

Ans → No reaction.

Q. ⑥ Write the evidence of cyclic structure of benzene.

→ (a) Substitution reaction of Benzene

Benzenes reacted with bromine in presence of FeBr_3 (Catalyst) to form Monobromo benzene.

 + $\text{Br}_2 \xrightarrow{\text{FeBr}_3} \text{Monobromo benzene} + \text{HBr}$


benzene bromine Monobromo benzene

The fact that only monobromo and no diatomic product were obtained indicated that all six hydrogen atoms in benzene were identical. This could be possible only if benzene had a cyclic structure of six carbon and to each carbon was attached one hydrogen.

Expt. 3

① Addition reaction (Addition of hydrogen)

Benzenes added three moles of hydrogen in presence of nickel catalyst to give Cyclohexane.

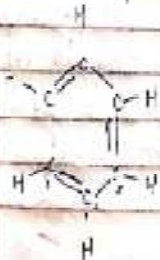
$\text{C}_6\text{H}_6 + 3\text{H}_2 \xrightarrow[150^\circ\text{ pressure}]{\text{Ni}}$ 


Cyclohexane

This confirmed the cyclic structure of benzene and also show the presence of three carbon-carbon double bond.

Q. ⑩ Draw Kekule structure for benzene.

In 1865, August Kekule suggested that benzene consisted of cyclic planar structure of six carbon with alternate double and single bonds. To each carbon was attached one hydrogen, benzene according to this proposal, was simple 1,3,5-cyclohexatriene.



usually written as 



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Q 10. Explain the large scale production of benzene.

→ **From Petroleum.**
Aromatization/Platining of C₆-C₉ Fraction of petroleum naphth yields a mixture of benzene, toluene & xylene.

$$\text{CH}_3-(\text{CH}_2)_4-\text{CH}_3 \xrightarrow[\text{500}^\circ\text{C}, 15\text{ atm}]{\text{Pt}/\text{Al}_2\text{O}_3} \text{Benzene} + 4\text{H}_2$$

n-Hexane

$$\text{CH}_3-(\text{CH}_2)_3-\text{CH}_3 \xrightarrow[\text{500}^\circ\text{C}, 15\text{ atm}]{\text{Pt}/\text{Al}_2\text{O}_3} \text{Toluene} + 4\text{H}_2$$

n-Heptane

$$\text{CH}_3-(\text{CH}_2)_2-\text{CH}_3 \xrightarrow[\text{500}^\circ\text{C}, 15\text{ atm}]{\text{Pt}/\text{Al}_2\text{O}_3} \text{Xylene} + 4\text{H}_2$$

n-Octane

Benzene is recovered from the mixture by solvent extraction & fractional distillation.

→ **From light oil fraction of coal tar**

→ The high temperature carbonisation of bituminous coal is carried by the steel industry. Coal-tar is obtained as by-product.

→ The distillation of coal-tar gives the light oil fraction (upto 200°C). This is washed with conc. H₂SO₄ to remove basic impurities (pyridine) & then with NaOH solution to remove acidic impurities (phenols).

→ The oil thus purified is finally washed with water, dried & distilled.

→ The fraction passing upto 110°C contains benzene, toluene, and xylene (C₆H₅CH₃).

→ This is refractionated and the fraction collected between 80-82°C is almost pure benzene.

→ Traces of thiophene present as impurity is removed from the product by heating it with hydrogen under pressure at 400°C in presence of catalyst and redistillation.

$$\text{C}_4\text{H}_6 + 4\text{H}_2 \xrightarrow[\text{heat}]{\text{Ni}} \text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_3 + \text{H}_2$$

n-butene

Q 11. Small scale preparation of Benzene

→ **By passing acetylene through red-hot tube at 900°C.**

$$3 \text{HC}\equiv\text{CH} \xrightarrow[\text{tube}]{\text{red-hot}} \text{Benzene}$$

acetylene

Q 12. What is aromaticity? explain Huckel's rule.

→ The aromatic compound apparently contain alternate double & single bonds in a cyclic structure, and resemble benzene in chemical behaviour. They undergo substitution reaction rather than addition reactions. This characteristic (property) behaviour is called Aromatic character or Aromaticity.

Criteria for Aromaticity.

Rules: An aromatic compound is cyclic and planar.

Rule 1: Each atom in an aromatic ring has a p-orbital. These p-orbitals must be parallel so that a continuous overlap is possible around the ring.

Rule 2: The cyclic or molecular orbital (electron cloud) formed by overlap of p-orbitals must contain (4n+2)π electrons, where n = integer 0, 1, 2, 3 etc.

This is known as Huckel's Rule.

Q 13. Benzene

→ It is a cyclic and planar compounds. It has a p-orbital on each carbon atom of the ring involved in a double bond. It has three double bonds and six π electrons, which is according to Huckel's rule $4n+2 = 6$.

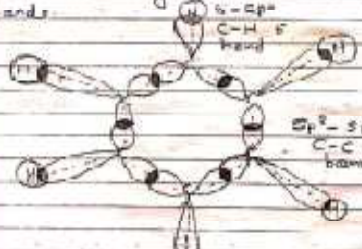


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Resonance hybrid is more stable than contributing structure.

Q 2. Molecular orbital structure of benzene.

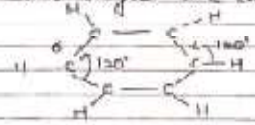
→ The structure of benzene is best described in terms of the molecular orbital theory. All six carbon atoms in the benzene are sp^2 hybridized. The sp^2 hybrid orbitals overlap with each other and with s orbital of the hydrogen atoms forming C-C and C-H σ bonds.



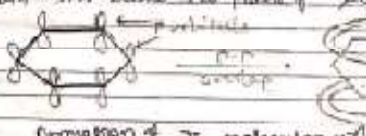
Formation of σ bonds in benzene

Since σ bonds result from the overlap of sp^2 orbitals, all carbon and hydrogen atoms in benzene lie in the same plane.


All σ bonds in benzene lie in one plane. All bond angles are 120° .



Also each carbon atom in benzene possesses an unhybridized p-orbital containing one electron. These p-orbitals are perpendicular to the plane of σ bonds. The lateral overlap of these p-orbitals produces a π molecular orbital consisting of two electron clouds. One lobe of this π molecular orbital lies above and other lobe lies below the plane of the σ bonds.



Formation of π molecular orbital in benzene



Orbital structure of benzene. All carbon atoms in benzene are sp^2 hybridized.

Q 3. Resonance of benzene!

- The phenomenon in which two or more structures can be written for a substance which involve identical position of atoms is called Resonance. The actual structure of the molecule involve identical positions of atoms is called Resonance. The actual structure of the molecule is said to be Resonance Hybrid of various possible alternative structures. The alternative structures are referred to as the Resonance structures or Contributing forms. A double-headed arrow (\longleftrightarrow) between the resonance structures is used to represent the resonance hybrid. Thus in the case of benzene, Kekulé structure (1) & (2) represents the Resonance structures. Actual structure of the molecule may be represented as hybrid of these two resonance structures as by single structural formula (3).



- It should be clearly understood that the resonance structures (1) and (2) are not the actual structure of benzene molecule. They exist only in theory.

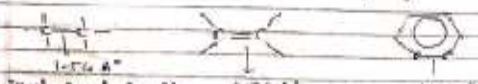
In resonance theory, as the carbon atoms are being hybridized, there are hypothetical resonance structures.

In structure (1) & (2) all single bond in structure (3) are double bond in structure (1) or (2). It is considered a hybrid of them, then the carbon-carbon bonds in benzene are neither single nor double bonds. Rather, they are something halfway between.

Experimentally -

Spectroscopic measurement shows that benzene is planar and that all of its carbon-carbon bonds are equal length 1.40 Å.

This value lies between single carbon-carbon bond length 1.54 Å and carbon-carbon double bond length 1.34 Å.



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INDEX

Name: Sanket C. Babade

Std : 1st Div : _____ Roll No : 35

Subject: Assignment PIC

School / College: Govt. college of Pharmacy.

[illegible]

1. History of Pharmacopoeia:

The word pharmacopoeia is derived from ancient word pharmacon means drug and poeia means to make. The history of Indian pharmacopoeia began in year 1833 when East India Company's Dispensary committee recommended the publication of pharmacopoeia. Bengal pharmacopoeia and general compendium of medicinal plants were published in the year 1844 which chiefly listed most of the commonly used indigenous remedies. This was followed by I.P 1868.

after independence, the Indian pharmacopoeia committee was constituted in 1948, for publication of IP as its main function first edition of IP was published in year 1955 followed by its edition in 1960. Both has supplements in 1960 and 1975 respectively. In year 1985 third edition was published followed by its addendum in 1989. fourth edition followed



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<p>3. principle involved in limit test of chloride and sulphate, nitrite, lead, and heavy metal, modified limit test of chloride.</p> <p>① chloride It is based upon the chemical reaction between silver nitrate and silver nitrate in presence of dilute nitric acid to give opalescence of silver chloride. $\text{AgNO}_3 + \text{Cl}^- \rightarrow \text{AgCl} + \text{NO}_3^-$</p> <p>② sulphate It is based upon the chemical reaction between barium chloride and soluble sulphate in presence of dilute hydrochloric acid. $\text{SO}_4^{2-} + \text{Ba}^{2+} \rightarrow \text{BaSO}_4 \downarrow$</p> <p>③ lead It is based on the reaction of lead and diphenyl thioglycol dithiocarbamate (dithionite) in alkaline solution to form lead dithionite complex which is red in colour. Dithionite is green in colour in alkaline and local dithionite</p>	<p>complex is violet in colour, so the reducing colour at the end of process is red.</p> <p>④ Arsenic Limit test for arsenic is based on reaction of arsine gas with methyl to form yellow stain on mercuric iodide paper in presence of reducing agent like potassium iodide.</p> <p>⑤ heavy metal It is based on reaction between the solution of heavy metal and a standard solution of sodium solution of hydrogen sulphide in acidic media is produced reddish/brown colour with hydrogen sulphide which is compared with std. lead nitrate solution.</p> <p>⑥ assay of sodium weight accurately about 0.1g and dissolve in 100 ml water in a glass stoppered flask add small amt of 0.1M silver nitrate and 2 ml of 2M nitric acid and 2 ml</p>
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<p>by its addendum in 2012. The first British pharmacopoeia 1864 was an out come of three old and reputed pharmacopoeia named pharmacopoeia Londinensis (1612) Edinburg pharmacopoeia (1698) Dublin pharmacopoeia (1807) new edition and addendum followed in quick succession, and in 1967 an addendum followed in quick succession, and in 1984, addendum in 1976.</p> <p>3) sources and types of impurities The various sources of impurities in pharmaceutical substance are as follows: i) raw material employed in the manufacturing of pharmaceutical substances ii) method of manufacture iii) reagent employed in manufacturing process iv) reagent used to eliminate other impurities v) solvent vi) reaction vessel.</p>	<p>i) atmospheric contamination during the manufacturing process. ii) manufacturing hazards: various manufacturing hazards can lead to contamination from particulate matter, cross contamination of the product, contamination by microbes. iii) instability of the product which which arise because of chemical impurity/instability, change in physical properties, reaction with container material.</p> <p>The various types of impurities in the pharmaceutical substance are: i) acidity/alkalinity impurity. ii) impurities due to colouring or flavouring substance or sodium sulphate. iii) impurities formed due to change in humidity. iv) impurities form because of decrease in shelf life of drug. v) physical and chemical property. vi) impurities due to which substance become incompatible.</p>
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TUTORIAL/REMEDIAL CLASSES

Time table (Tutorial- B.Pharm, Pharm D)

Government College of Pharmacy, Amravati

TIME TABLE FOR 2018-2019 Version 1 11 June 2018

TIME	TH/PR	MON	TUE	WED	THUR	FRI	SAT
FIRST B. PHARM							
10:00 TO 02:00	A	HAP-1/ND (05)	CommSkills(2hr) (118)	PH-1/KSP (10)	PA/KG (104)	PIC/ SRI (114)	PIC/ SRI (114)
	B	PH-1/ KSP (10)	HAP-1/ ND (05)	CommSkills(2hr) (118)	PA/VPN (104)		Batch B
	C	PA/KG (104)	PH-1/KSP (10)	HAP-1/ ND (05)	PIC/ SRI (114)	CommSkills(2hr) (118)	
02:00 TO 02:30		R	E	C	E	S	S
02:30 TO 03:30	TH	PH-1/ KSP	PIC/ GMA	PH-1/ KSP	PA/VPN	HAP-1/ ND	PIC/ SRI (114)
03:30 TO 04:30	TH	PA/VPN	PA/VPN	RM/RB (KP/CHB)	RM/RB (KP/CHB)	PIC/ GMA	
04:30 TO 05:30	TH	CommSkills/CHB	PH-1/ KSP	PIC/ GMA	HAP-1/ ND	HAP-1/ ND	Batch B
05:30 TO 06:30	Tutorial	HAP-1/ ND	PH-1/ KSP	PA/VPN	PIC/ GMA	CommSkills/CHB (TH)	
SECOND B. PHARM							
10:00 TO 11:00	TH	PP-1/ MAS	PEMAHURE/TU	POC-1/ GMA		POC-1/ GMA/TU	
11:00 TO 12:00	TH	PEMAHURE	PP-1/ MAS	MICRO/DSG	MICRO/DSG		
12:00 TO 01:00	TH	PP-1/ MAS/TU	POC-1/ GMA	PP-1/ MAS	PEMAHURE		
01:00 TO 02:00	TH	POC-1/ GMA		MICRO/DSG		PEMAHURE	
02:00 TO 02:30		R	E	C	E	S	S
02:30 TO 05:30	A	MICRO/DSG (09)	PP-1/ MAS (10)	PEMAHURE (13)	POC-1/ GMA (111)		
	B	PEMAHURE (13)	POC-1/ GMA (111)	PP-1/ MAS (10)	MICRO/ PAP (09)		
	C	POC-1/ GMA (111)	PEMAHURE (13)	MICRO/DSG (09)	PP-1/ MAS (10)		
THIRD B. PHARM							
10:00 TO 11:00							
11:00 TO 02:00	A	MC-1/ NNI (114)	PCOL-2/ NRK (04)	PCOG-3/ SLD (116)		PH-3/ SSS (13)	POC-3/ AB (111)
	B	PH-3/ SSS (13)	PCOG-3/ SLD (116)	MC-1/ NNI (114)	POC-3/ BAB (111)	PCOL-2/ NRK (04)	Batch A
	C	PCOG-3/ SLD (116)	MC-1/ NNI (114)	PCOL-2/ NRK (04)	PH-3/ SSS (13)	POC-3/ AB (111)	
02:00 TO 02:30		R	E	C	E	S	S
02:30 TO 03:30	TH	PCOG-3/ SLD	POC-3/ BAB	PCOG-3/ SLD	MC-1/ NNI	BIOPH/ SSS	POC-3/ AB (111)
03:30 TO 04:30	TH	BIOPH/ SSS	PCOG-3/ SLD	PCOL-2/ NRK	PCOG-3/ SLD	POC-3/ BAB	
04:30 TO 05:30	TH	PCOLG/NRK	MC-1/ NNI	BIOPH/ SSS	PH-3/ SSS	PH-3/ SSS	Batch A
05:30 TO 06:30	TH	PCOLG/NRK	MC-1/ NNI	PH-3/ SSS			
FINAL B. PHARM							
10:00 TO 11:00	TH	PCOL-3/ HNG	PCOL-3/ HNG	PCOL-3/ HNG	MC-3/ BAB	PA-3/ VPN	
11:00 TO 12:00	TH	PCOG-5/ BVG	PA-3/ VPN	PJ/ AB	PA-3/ VPN	PH-5/ GSB	PH-5/ GSB (13)
12:00 TO 01:00	TH	PJ/ AB	PCOG-5/ BVG	MC-3/ BAB	MC-3/ BAB	PH-5/ GSB	Batch B
01:00 TO 02:00	TH	SEMINAR		PCOG-5/ BVG	PH-5/ GSB	PJ/ AB	
02:00 TO 02:30		R	E	C	E	S	S
02:30 TO 05:30	A	PCOG-5/ BVG (114)	PCOL-3/ HNG (04)	PA-3/ VPN (104)	MC-3/ BAB (114)	PH-5/ GSB (13)	
	B	PCOL-3/ HNG (04)	LIBRARY	PCOG-5/ BVG (116)	PA-3/ VPN (104)	MC-3/ BAB (114)	
	C	MC-3/ BAB (114)	PCOG-5/ BVG (116)	PCOL-3/ HNG (04)	PH-5/ GSB (13)	PA-3/ VPN (104)	Batch B

Morning Session

Room No: 119- B. Pharm Fourth year; 121-Pharm D Second Year; 122: B. Pharm Second Year; 123: Pharm D Fourth Year

Afternoon Session

Room No: 119- B. Pharm First year; 121: Pharm D Third Year; 122: B. Pharm Third Year; 123: Pharm D First Year

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09:00 TO 10:00		TH		MC/ NNI	MC/ NNI	Ward Round	MC/ NNI	MC/ NNI
11:00 TO 02:00	2-4	PR	PCOL-2/ Maryam (04)	PF/ GSB (13)	MC/ Maryam (105)		PCT-2/ ASG (05)	PA/ KG (PR) (104)
02:30 TO 03:30		TH	PCT-2/ ASG	PA/ KG	PCOL-2/ ASG	PCOL-2/ ASG	PJ/ Dudhe	
03:30 TO 04:30		TH	PA/ KG	PCT-2/ ASG	ENV/ MAJ	ENV/ MAJ	PCT-2/ ASG	PA/ KG (PR) (104)
04:30 TO 05:30		TH	PF/ GSB	ENV/ MAJ	PF/ Tu/ GSB	PJ/ Dudhe	PA/ KG	
05:30 TO 06:30		TH	PCOL-2/ ASG	PCT-2/ Tu/ ASG	PF/ GSB	Tu/ PCOL-2/ ASG	PA/ Tu/ KG	
FOURTH PHARM D								
10:00 TO 11:00	1	TH	PCT-3/ Maryam	PCT-3/ Maryam		Ward Round	CLT/ Maryam	B & P/ KSP
11:00 TO 12:00	2	TH	CLP/ PPS	CLP/ PPS			B & P/ KSP	PCT-3/ Tu/ Maryam
12:00 TO 01:00	3	TH	B & RM/ YD	HP/ SSS	CLP/ PPS		CLT/ Maryam	PCT-3/ Maryam
01:00 TO 02:00	4	TH	HP/ SSS	HP/ Tu/ SSS 1hr	B & RM/ YD		CLT/ Tu/ PPS	B & P/ Tu/ KSP
02:30 TO 05:30	5-7	PR	HP/ PPS (10)		CLP/ SSS (05)		PCT-3/ Maryam (04)	B & P/ KSP (10)
05:30 TO 06:30	8	TH	B & RM/ Tu/ YD					
FIFTH PHARM D								
9:00 TO 01:00	1	PR	Clerkship/ HNG	Clerkship/ HNG	Clerkship/ HNG	Clerkship/ HNG	Clerkship/ HNG	Clerkship/ HNG
02:30 TO 03:30	2	TH	CLR/ MSK	CLR/ MSK	CLR/ MSK		Case Presentation/ HNG	Journal Club/ HNG
03:30 TO 04:30	3	TH	CP-TDM/ MSK	CP-TDM/ MSK	PE-PT/ PPS		Case Presentation/ HNG	Journal Club/ HNG
04:30 TO 05:30	4	TH	CLR/ Tu/ MSK	PE-PT/ PPS	CP-TDM/ Tu/ MSK		Case Presentation/ HNG	Journal Club/ HNG
05:30 TO 06:30	5	TU		PE-PT/ Tu/ PPS	PE-PT/ PPS			

Morning Session

Room No: 119- B. Pharm Fourth year; 121:Pharm D Second Year; 122: B. Pharm Second Year; 123: Pharm D Fourth Year

Afternoon Session

Room No: 119- B. Pharm First year; 121: Pharm D Third Year; 122: B. Pharm Third Year; 123: Pharm D First Year



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TUTORIAL CLASS TEST/ ASSIGNMENT

[illegible]

20 Marks

Tutorial 1st

Q. 4) Solve any two: (12)

④ Expand

$$\textcircled{1} \begin{vmatrix} 2 & -1 & 3 \\ -1 & 2 & 4 \\ 5 & 1 & 3 \end{vmatrix} \quad \textcircled{2} \begin{vmatrix} 3 & 2 & 1 \\ 1 & 2 & 3 \\ 3 & 3 & 1 \end{vmatrix}$$

③ Find the value of x

$$\begin{vmatrix} x & 3 & 3 \\ 3 & 3 & x \\ 2 & 3 & 3 \end{vmatrix} = 0$$

④ Find x .

$$\begin{array}{ccc|c} x & -1 & 2 & \\ 2x & 1 & -3 & = 29 \\ 3 & -4 & 5 & \end{array}$$

④ Expand determinant along third row.

$$\begin{bmatrix} 3 & -2 & 4 \\ 1 & 2 & 1 \\ 0 & 1 & -1 \end{bmatrix}$$

Q. 8) Solve any two (8)

Q Find the minor & cofactors of the elements. $\begin{vmatrix} 1 & 0 & 3 \end{vmatrix}$

$$\begin{array}{c|ccc} \text{elements.} & 1 & 0 & 3 \\ \hline & -3 & 4 & -2 \\ & 2 & -1 & 0 \end{array}$$



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$$= 4(-1)^{1+3}[1-0] + 1(-1)^{2+3}[3-0] - 1(-1)^{3+3}(6+2)$$

$$= 4[1] + 1[3] - 1(8)$$

$$= 4 + 3 - 8$$

$$= 4 - 11$$

$$= -8 - 7$$

Q.8) 1) $\begin{vmatrix} 1 & 0 & 3 \\ -3 & 4 & -2 \\ 2 & -1 & 0 \end{vmatrix}$

Minor Elements:-
 $M_{11} = \begin{vmatrix} 4 & -2 \\ -1 & 0 \end{vmatrix} = (0-2) = -2$

$M_{12} = \begin{vmatrix} -3 & -2 \\ 2 & 0 \end{vmatrix} = (0+4) = 4$

$M_{13} = \begin{vmatrix} -3 & 4 \\ 2 & -1 \end{vmatrix} = (3-8) = -5$

$M_{21} = \begin{vmatrix} 0 & 3 \\ -1 & 0 \end{vmatrix} = (0+3) = 3$

$M_{22} = \begin{vmatrix} 1 & 3 \\ 2 & 0 \end{vmatrix} = (0-6) = -6$

$M_{23} = \begin{vmatrix} 1 & 0 \\ 2 & -1 \end{vmatrix} = (-1-0) = -1$

$M_{31} = \begin{vmatrix} 0 & 3 \\ 4 & -2 \end{vmatrix} = (0-12) = -12$

$M_{32} = \begin{vmatrix} 1 & 3 \\ -3 & -2 \end{vmatrix} = (-2+9) = 7$

$$M_{33} = \begin{vmatrix} 1 & 0 \\ -3 & 4 \end{vmatrix} = (4-0) = 4$$

Co-Factors:- $a_{ij} = (-1)^{i+j} M_{ij}$

$a_{11} = (-1)^{1+1} M_{11}$
 $= (1)(-2) = -2$

$a_{12} = (-1)^{1+2} M_{12}$
 $= (-1)(4) = -4$

$a_{13} = (-1)^{1+3} M_{13}$
 $= (1)(-5) = -5$

$a_{21} = (-1)^{2+1} M_{21}$
 $= (-1)(3) = -3$

$a_{22} = (-1)^{2+2} M_{22}$
 $= (1)(-6) = -6$

$a_{23} = (-1)^{2+3} M_{23}$
 $= (-1)(-1) = 1$

$a_{31} = (-1)^{3+1} M_{31}$
 $= (1)(-12) = -12$

$a_{32} = (-1)^{3+2} M_{32}$
 $= (-1)(7) = -7$

$a_{33} = (-1)^{3+3} M_{33}$
 $= (1)(4) = 4$

2) Expanding the given

① along second row

② along 3rd column

3) Prove That $\begin{vmatrix} a & a & a \\ a & b & b \\ a & b & c \end{vmatrix} = a(b-c)(a-b)$

hence find the value of $\begin{vmatrix} 3 & 3 & 3 \\ 3 & 5 & 5 \\ 3 & 5 & 7 \end{vmatrix}$

Q.A)

① $\begin{vmatrix} 2 & -1 & 3 \\ -1 & 2 & 4 \\ 5 & 1 & 3 \end{vmatrix}$

$$\Rightarrow 2[6-4] + 1[-3-20] + 3[-1-10]$$

$$= 2[2] + 1[-23] + 3[-11]$$

$$= 4 - 23 - 33$$

$$= 4 - 56$$

$$= -52$$

② $\begin{vmatrix} 3 & 2 & 1 \\ 1 & 2 & 3 \\ 3 & 3 & 1 \end{vmatrix}$

$$\Rightarrow 3[2-9] - 2[1-9] + 1[3-6]$$

$$= 3[-7] + 16 - 3$$

$$= -21 + 16 - 3$$

$$= -8$$

③ $\begin{vmatrix} x & 3 & 3 \\ 3 & 3 & x \\ 2 & 3 & 3 \end{vmatrix} = 0$

$$\Rightarrow x[9-3x] - 9[9-2x] + 3[9-6] = 0$$

$$= 9x - 3x^2 - 27 + 6x + 27 - 18 = 0$$

$$= 15x - 3x^2 - 18 = 0$$

$$15x - 3x^2 - 18 = 0$$

$$-3x^2 + 15x - 18 = 0$$

$$x^2 - 5x + 6 = 0$$

④ $\begin{vmatrix} x & -1 & 2 \\ 2x & 1 & -3 \\ 3 & -4 & 5 \end{vmatrix} = 29$

$$x[5-12] + 1[10x+9] + 2[-8x-3] = 29$$

$$5x - 12x + 10x + 9 - 16x - 6 = 29$$

$$5x - 2x + 3 - 16x = 29$$

$$3x - 16x + 3 = 29$$

$$-13x = 26$$

$$x = -2$$

5) $\begin{vmatrix} 3 & -2 & 4 \\ 1 & 2 & 1 \\ 0 & 1 & -1 \end{vmatrix}$

along 3rd row:-

$$= 4[\text{co-factor of } 4] + 1[\text{co-factor of } 1] - 1[\text{co-factor of } -1]$$



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Now,
 $A-B = \begin{bmatrix} 1 & 2i \\ -3 & 2 \end{bmatrix} - \begin{bmatrix} 2i & i \\ 2 & -3 \end{bmatrix}$

$$A-B = \begin{bmatrix} -i & i \\ -5 & 5 \end{bmatrix}$$

To show,
 let,
 $A+B = \begin{bmatrix} 1 & 2i \\ -3 & 2 \end{bmatrix} + \begin{bmatrix} 2i & i \\ 2 & -3 \end{bmatrix}$

$$= \begin{bmatrix} 3i & 3i \\ -1 & -1 \end{bmatrix}$$

$$A+B = [-3i + 3i]$$

$$|A+B| = 0$$

\therefore hence $A+B$ is singular matrix

③ For the matrices A & B if $2A-B = \begin{bmatrix} 6 & -6 \\ -4 & 2 \end{bmatrix}$

& $A-2B = \begin{bmatrix} 3 & 2 \\ -2 & 1 \end{bmatrix}$

3) IF $A = \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 4 \\ 6 & -7 \end{bmatrix}$ find the matrix $A-4B+7I$ where I is the unit matrix of order?

\Rightarrow given,
 $A = \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 4 \\ 6 & -7 \end{bmatrix}$

$\rightarrow I$ is the unit matrix of order 2×2

$$I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

Now
 $A-4B+7I =$

$$= \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix} - 4 \begin{bmatrix} 1 & 4 \\ 6 & -7 \end{bmatrix} + 7 \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$= \begin{bmatrix} 3 & -2 \\ 5 & 4 \end{bmatrix} - \begin{bmatrix} 4 & 16 \\ 24 & -28 \end{bmatrix} + \begin{bmatrix} 7 & 0 \\ 0 & 7 \end{bmatrix}$$

$$= \begin{bmatrix} 3-4+7 & -2-16+0 \\ 5-24+0 & 4+28+7 \end{bmatrix}$$

$$= \begin{bmatrix} 6 & -18 \\ -19 & 39 \end{bmatrix}$$

$$A-4B+7I = \begin{bmatrix} 6 & -18 \\ -19 & 39 \end{bmatrix}$$

K. P. S.
25.09.19

hence from Q 6③
 $A+B = B+A$

④ And a, b, c if $\begin{bmatrix} 1 & 3x & a \\ b & -5 & -7 \\ -4 & c & 0 \end{bmatrix}$ is a symmetric matrix.

$\Rightarrow A = \begin{bmatrix} 1 & 3x & a \\ b & -5 & -7 \\ -4 & c & 0 \end{bmatrix}$

given, $|A| = 0$ It is symmetric matrix

$\therefore a, b, c = 0$

$$\begin{vmatrix} 1 & 3x & a \\ b & -5 & -7 \\ -4 & c & 0 \end{vmatrix} = 0$$

$$1[-5+7c] - 3x[0-28] + a[bc-20] = 0$$

$$-5+7c-0+2 \times 28 + abc-20a = 0$$

$$-5+7c+56+abc-20a = 0$$

⑤ IF $A = \begin{bmatrix} 5 & -3 \\ 4 & -3 \\ -2 & 1 \end{bmatrix}$ Prove that $(A^T)^T = A$

\Rightarrow given, $A = \begin{bmatrix} 5 & -3 \\ 4 & -3 \\ -2 & 1 \end{bmatrix}$ - ①

Now,
 $A^T = \begin{bmatrix} 5 & 4 & -2 \\ -3 & -3 & 1 \end{bmatrix}$

Then,
 $(A^T)^T = \begin{bmatrix} 5 & -3 \\ 4 & -3 \\ -2 & 1 \end{bmatrix}$ - ②

③ hence from Q 6③
 prove that $A = (A^T)^T$

③ Solve any two [8]

① IF $A = \begin{bmatrix} 1 & 2i \\ -3 & 2 \end{bmatrix}$ & $B = \begin{bmatrix} 2i & i \\ 2 & -3 \end{bmatrix}$ find $A+B$ & $A-B$ show that $A+B$ is singular matrix.

\Rightarrow given
 $A = \begin{bmatrix} 1 & 2i \\ -3 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 2i & i \\ 2 & -3 \end{bmatrix}$

$$A+B = \begin{bmatrix} 1 & 2i \\ -3 & 2 \end{bmatrix} + \begin{bmatrix} 2i & i \\ 2 & -3 \end{bmatrix}$$

$$A+B = \begin{bmatrix} 3i & 3i \\ -1 & -1 \end{bmatrix}$$


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Tu-04

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Q1) (A) Solve any four (12)
 (i) Construct a matrix $A = [a_{ij}]_{3 \times 2}$ whose element is given by $a_{ij} = i - 2j$

(ii) Find k if the given matrix is singular

$$A = \begin{bmatrix} 4 & 3 & 1 \\ 7 & k & 1 \\ 10 & 9 & 1 \end{bmatrix}$$

\Rightarrow

given,

$$A = \begin{bmatrix} 4 & 3 & 1 \\ 7 & k & 1 \\ 10 & 9 & 1 \end{bmatrix}$$

Now,

$|A| = 0$ in singular matrix.

then

$$\begin{vmatrix} 4 & 3 & 1 \\ 7 & k & 1 \\ 10 & 9 & 1 \end{vmatrix} = 0$$

$$\begin{aligned} 4[k-9] - 3[7-10] + 1[63-10k] &= 0 \\ 4k - 36 - 21 + 30 + 63 - 10k &= 0 \\ -6k - 6 - 21 + 63 &= 0 \\ -6k - 27 + 63 &= 0 \\ 2k - 6k - 6 &= 0 \end{aligned}$$

$$2) \begin{vmatrix} 1 & 2 & -1 \\ 0 & 3 & 2 \\ 4 & -1 & 3 \end{vmatrix}$$

Along 2nd row: \Rightarrow

$$\begin{aligned} &= 0(\text{cofactor of } 0) + 3(\text{cofactor of } 2) + 2(\text{cofactor of } -1) \\ &= 0 + 3(-1)^{2+2}(3+4) + 2(-1)^{2+3}(-1-8) \\ &= 3(1)(7) + 2(-1)(-9) \\ &= 21 + 18 \\ &= 39 \end{aligned}$$

Along 3rd column: \Rightarrow

$$\begin{aligned} &= -1(\text{cofactor of } -1) + 2(\text{cofactor of } 2) + 3(\text{cofactor of } 3) \\ &= -1(-1)^{1+3}(0-12) + 2(-1)^{2+3}(-1-8) + 3(-1)^{3+3}(3-0) \\ &= -1(1)(-12) + 2(-1)(-9) + 3(1)(3) \\ &= 12 + 18 + 9 \\ &= 39 \end{aligned}$$

$$3) \begin{vmatrix} a & a & a \\ a & b & b \\ a & b & c \end{vmatrix} = a(b-c)(a-b)$$

$$\begin{aligned} \text{B.L.H.S} &= a(bc-b^2) - a(ac-ab) + a(ab-ab) \\ &= abc - ab^2 - a^2c + a^2b \\ &= a[bc - b^2 - ac + ab] \\ &= a[bc - ac - b^2 + ab] \end{aligned}$$

$$6k = 36$$

$$k = 6$$

$$(2) \text{ If } A = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix}, B = \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix}$$

Show that $A+B = B+A$

\Rightarrow

$$\text{given } A = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix}, B = \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix}$$

To show, $A+B = B+A$

let,

$$A+B = \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix} + \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix}$$

$$A+B = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix} \quad \text{--- (1)}$$

$$\text{Now } B+A = \begin{bmatrix} -1 & 2 \\ 2 & 2 \\ 0 & 3 \end{bmatrix} + \begin{bmatrix} 2 & -3 \\ 5 & -4 \\ -6 & 1 \end{bmatrix}$$

$$B+A = \begin{bmatrix} 1 & -1 \\ 7 & -2 \\ -6 & 4 \end{bmatrix} \quad \text{--- (2)}$$

$$= -n[0(a-b) + b(b-a)]$$

$$\begin{aligned} &= a[ab-b^2 + b(-ac)] \\ &= a[b(a-b) - c(a+b)] \\ &= a[b-c](a-b) \end{aligned}$$

$$\begin{vmatrix} 3 & 3 & 3 \\ 3 & 5 & 5 \\ 3 & 5 & 7 \end{vmatrix}$$

04

$$\begin{aligned} &\rightarrow 3[35-25] - 3[21-15] + 3[15-15] \\ &= 3[10] - 3[6] + 3[0] \\ &= 30 - 18 + 0 \\ &= 12 \end{aligned}$$

K. Padak
29-08-19



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Tutorial Class Online Test**Name of Faculty: Dr.B.A.Baviskar****Class: B.Pharm-IV SEM**

Principal
Govt. Pharmacy College,
Amravati.

Name of Faculty: Dr.B.A.Baviskar

Class: B.Pharm-VII SEM

1/2/2020 Tutorial 07-B.Pharm Fifth Sem

59 responses

[Publish analytics](#)

Name

57 responses

Yogesh Chaitani

Sunil godwe

Somnath Vajrathi Bhure

Vijay sase

Shridhar Hari Kadem

Abhay Faihi

Sameer

Nilesh Pawande

Mukta pralhad rankhamb

Roll No.

56 responses

19

25

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<https://docs.google.com/forms/d/19KdLVMg6WZuLg3D0bq68G30CUpE6SVL6/viewanalytics>

1/2/2020 Tutorial 07-B.Pharm Fifth Sem

44

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1. What do you mean by Cremocarp fruit?

54 responses

A fruit having one seeded and on non seeded portion

One seeded carpel remains attached to central portion of seed.

Fruit which is Divided into two parts and attached by Carphophore

Cremocarp fruit is a fruit which is divided into two equal half joined by capophore

Which seprate into two halves

Which is divided into two equal mericarp...contain seeded portion on both side

One half containing seed

Cremocarp fruit's means a fruit which converts into two halves

In that two equal halves are separated.

2. What is parquetry cell?

34 responses

<https://docs.google.com/forms/d/19KdLVMg6WZuLg3D0bq68G30CUpE6SVL6/viewanalytics>

1/2/2020 Tutorial 07-B.Pharm Fifth Sem

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3. What do you mean by TLC?

35 responses

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Name of Faculty :Dr.M.A.Shende Class: B.Pharm- I SEM

GCOPA_Pharmaceutical Incompatibility
30 responses
Publish analytics

Name
30 responses

Vruthi anurao solao
Ganesh Sanjay Deshmukh
Manish K. Padhan
KAILASH WADHAWANI
Pratik Sanjay monche
Aditya padhan
Saur H Upencharwar
Anand khode
Rushikumar Manohar Thakare

Roll Number
30 responses

31
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08

1. Detect the type of incompatibility in the prescription containing: Rx: Atropine Sulphate 0.006 g, Phenobarbital 0.360 g Ft. Caps. imitate XII Sig. caps. T.i.d.s.
30 responses

2. Physical change may almost be
30 responses

3. Compatibility may be corrected by changing the order of
30 responses

4. A visual check for precipitation, turbidity or color change before administering the mixture guarantees compatibility.
30 responses

5. Which of the following is not an example of chemical incompatibility?
30 responses

6. Increased drug effectiveness, as the combined effect is greater than the sum of each drug acting independently.
30 responses

7. Decreased drug effectiveness, as the combined effect of two or more agents is less than the sum of each drug acting alone.
30 responses

8. Reactions have the opposite effect and result in a combined effect that is less than either active component alone.
30 responses

9. In the mixing of thymol and menthol the following type of incompatibility occurs?
30 responses



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10. Write overcoming approach of Physical Incompatibilities.

33 responses

Change order of mixing

XXXXXXXX

XXXXXXXX

By using the portion of the vehicle and by changing order of mixing

By adding the ingredients slowly and continuously stirring with vehicle used in preparation overcomes physical incompatibilities.

The chemical incompatibility can be overcome by using the following ways

- 1) By changing the order of mixing the constituents
- 2) By using stabilizers to make the dosage stable
- 3) By using emulsifiers in case of immiscible liquids
- 4) By using suspending agents to prevent precipitation
- 5) By using compounds such as magnesium carbonate so as to prevent the reaction of calcium and aluminum ion converting into liquid form

11. Crystallization is an example of _____ incompatibility.

33 responses

- 100% Crystallization
- 100% Physical
- 100% Chemical
- 100% Therapeutic

12. Pharmacokinetic interactions includes;

33 responses

- 100% Formation of drug chelates or complexes
- 100% Effect of the vehicle on the drug
- 100% Precipitation of drugs during administration
- 100% Synergism

13. Prescription contains Rx Acetophenidine 50 mg, Acetyl Salicylic Acid 200 mg & Caffeine 40 mg caps 1 tab. consider for ;

33 responses

- 100% Improper dosage form
- 100% Contradicted drug
- 100% Over dose or improper dose (it is single drug)
- 100% Intentional therapeutic incompatibility

14. Prescription contains Rx Tetracycline Hydrochloride 250 gms caps 1 tab. Take 1 capsules every 6 hours with milk. consider for ;

33 responses

- 100% Improper dosage form
- 100% Contradicted drug
- 100% Over dose or improper dose (it is single drug)
- 100% Intentional therapeutic incompatibility

15. Intentional incompatibilities are observed in some prescriptions, which are done to modify the activity of one in presence of other. The example is;

33 responses

- 100% Intentional incompatibility
- 100% Physical incompatibility
- 100% Chemical incompatibility
- 100% Therapeutic incompatibility

More Ques To

1 response

evolution of a22 stabilize the the medication

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Name of Faculty :Dr.M.A.Shende Class: B.Pharm- II SEM



Assignment-1: Solubility of Drugs

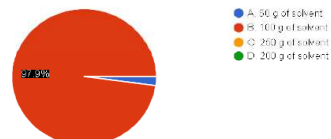
47 responses

Publish analytics

pH-Solubility Phenomenon

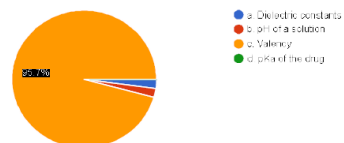
1. Solubility is amount of solute dissolved in.....

47 responses



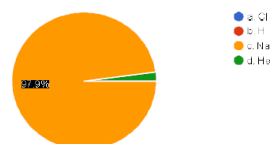
2. The is not physicochemical constant useful in predicting the solubility of a drug.

47 responses



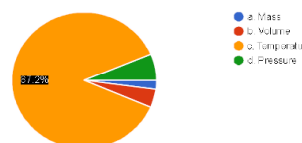
3. When NaCl is dissolved in water, negative end of water molecules is attracted towards...

47 responses



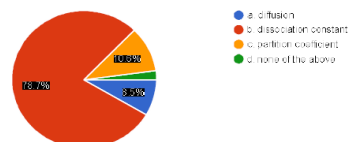
4. Solubility of gases increases with decrease of...

47 responses



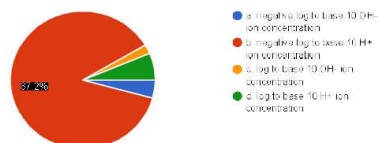
5. The following property can be used to estimate degree of ionisation of weak electrolyte drug.

47 responses



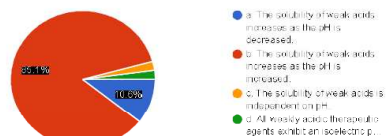
6. The pH value is calculated mathematically as the.....

47 responses



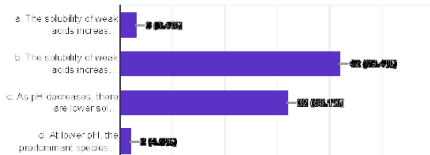
7. Regarding weakly acidic drug molecules, which of the following statements are true?

47 responses



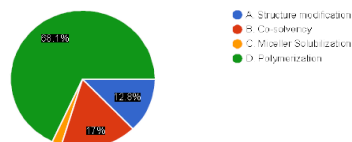
8. The following statements are true for solubility of weakly acidic drugs?

47 responses



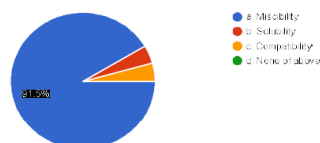
9. The followings are approaches to improve solubility of poorly soluble drugs except.....

47 responses



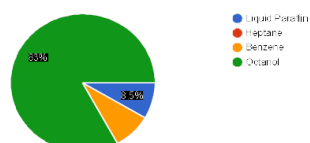
10. The mutual solubilities of the components in liquid-liquid referred.....

47 responses



11. Which of the following solvents is the most suitable for determining partition coefficients?

47 responses



12. Application of partition coefficient excludes.....

47 responses



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13. In many systems the ionisation of the solute in one or both phases or the association of the solute in one of the solvents, partitioning behaviour calculation in term of ...
47 responses

- a. partition coefficient
- b. apparent partition coefficient
- c. diffusion coefficient
- d. chemical potential

19. Which of the following types of interparticle attractions must be overcome in order for a solute to dissolve in a solvent?
47 responses

- solute-solute
- solvent-solute
- solvent-solvent
- more than one correct response

14. The weak base is absorbed at a faster rate from the...
47 responses

- a. Intestine (pH 7.50-8)
- b. Stomach (pH 1.4-2)
- c. Small intestine
- d. None of above

15. At pH 6.8, a basic compound of pKa 9.5 is mostly in what form?
47 responses

- a. ionized
- b. neutral
- c. dimerized
- d. None of above

16. Additives may either increase or decrease the solubility of a solute in a given solvent. Their effect on the solubility will depend on several factors excluding....
47 responses

- a. the volume of additive dissolved in the solvent
- b. the interaction of the additive with the solute
- c. the interaction of the additive with the solvent
- d. without interaction of additives with solute or solvent

17. The United States Pharmacopeia (USP) describes the solubility of drugs as...
47 responses

- a. parts of solute required for one part solvent
- b. parts of solvent required for one part solute
- c. 100 parts of solvent required for one part solute
- d. neither of above

18. The solubility of weak electrolytes & non-polar substances can be increased by adding water miscible solvents. This process is known as.....
47 responses

- a. partitioning
- b. complexation
- c. solubilization
- d. None



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TUTORIAL**Name of Faculty :Dr.M.A.Shende Class: B.Pharm- II SEM****Quiz-II: Surface and interfacial phenomenon**

63 responses

Publish analytics

Roll Number

63 responses

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1. Which of the following is an application of surface tension?

63 responses



- (a) Width of soap bubble is largely due to surface tension
- (b) Molecular structure can be studied by surface tension measurements through capillary rise
- (c) Surfactants are incorporated in preparations like toothpaste
- (d) All of the above mentioned

2. Shapes of drops of liquid are spherical because of

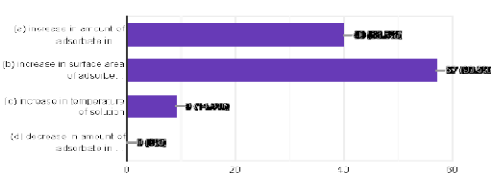
63 responses



- (a) Viscosity
- (b) Adsorption
- (c) Surface tension
- (d) Conductivity

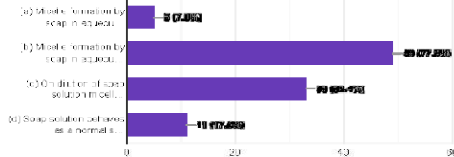
3. Extent of adsorption of adsorbate from solution phase increases with

63 responses



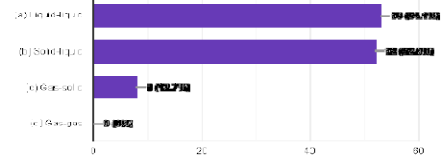
4. Which of the following options are correct?

63 responses

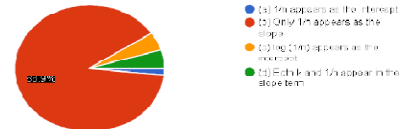


5. Which of the following interface can exist?

63 responses

6. For a linear plot of $\log(w/m)$ versus $\log P$ in a Freundlich adsorption isotherm, which of the following statements is correct θ , and n are constants):

63 responses



7. Adsorption of gas on solid surface depends upon:

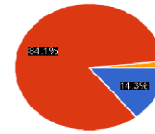
63 responses



- (a) Nature of gas
- (b) Surface area of adsorbent
- (c) Temperature and pressure
- (d) All of these

8. What is Critical Micelle Concentration?

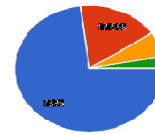
63 responses



- (a) The maximum amount of concentration that is required for the formation of micelle
- (b) The minimum amount of concentration that is required for the formation of micelle
- (c) The maximum amount of concentration that is not required
- (d) The minimum amount of concentration that is not required

9. Select the incorrect statement from the following options.

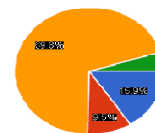
63 responses



- (a) In the micelle formation, the major soluble heads are directed towards the center
- (b) In the micelle formation, the water soluble heads are on the surface in contact with the water
- (c) In the micelle formation, the major insoluble tails are directed towards the center
- (d) None of the mentioned

10. Based on the Freundlich isotherm, Calculate the adsorption of a dye on activated carbon at room temperature, where $k = 0.025$, $n = 0.5$ and $C = 0.04$.

63 responses



- (a) 0.009
- (b) 0.008
- (c) 0.007
- (d) 0.006

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Name of Faculty: Dr.S.L.Deore Class: B.Pharm –V SEM

GCOPA B.Pharm Fifth Sem Tutorial 02

60 responses

[Publish analytics](#)

Name

58 responses

Nitin Vishnu Cheke
Swarupa Mohan wanole
Sharada L Deore
Nilesh p gawande
Yogesh Chainani
Shridhar Hari Kadam
Dnyaneshwar Alhat
Vijay sase
Kiran jagtap

Roll No.

57 responses

21
32
46
53



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38

11

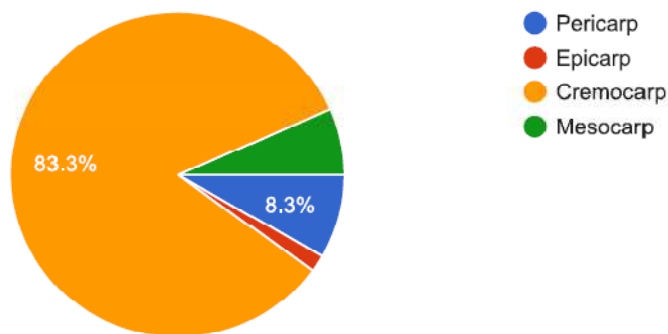
51

13

31

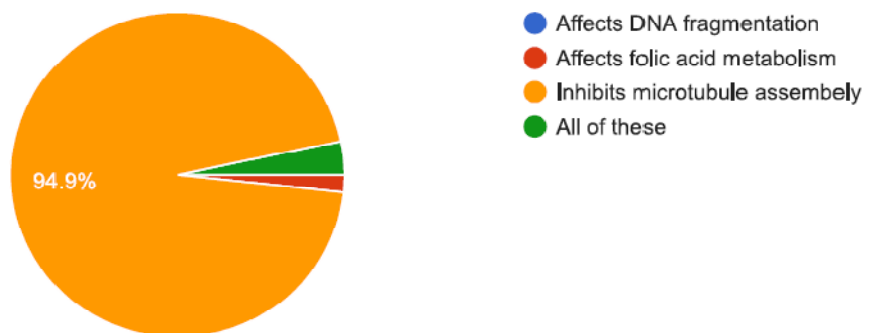
1. Type of Umbelliferae Fruits is

60 responses



2. Mode of action of vinca alkaloids is

59 responses

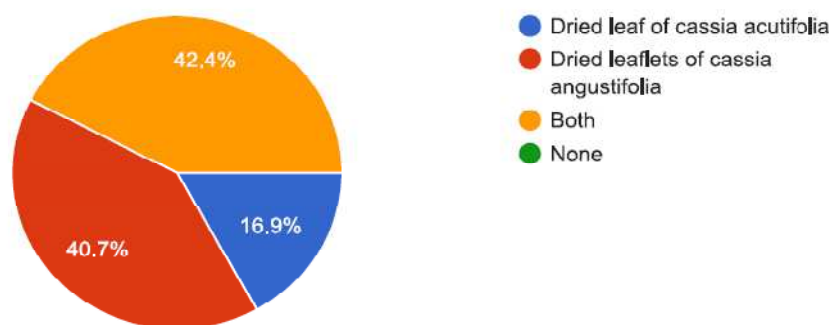


3. Senna leaf IP consist of



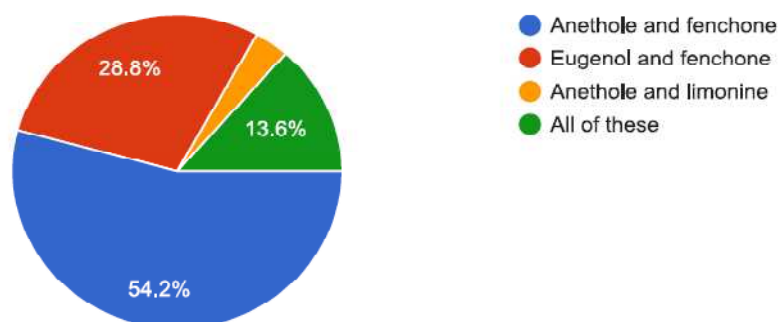
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59 responses



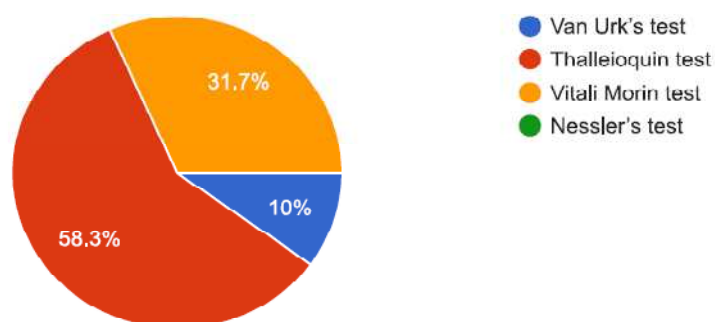
4. The principle constituent of fruits of foeniculum vulgare are

59 responses



5. Identification test for cinchona alkaloids

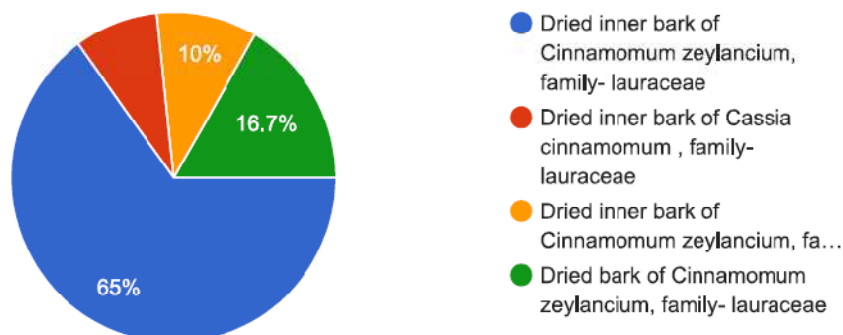
60 responses



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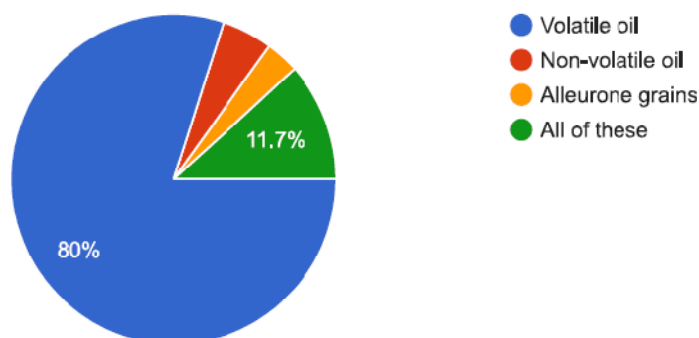
6. The biological source of cinnamon bark is

60 responses



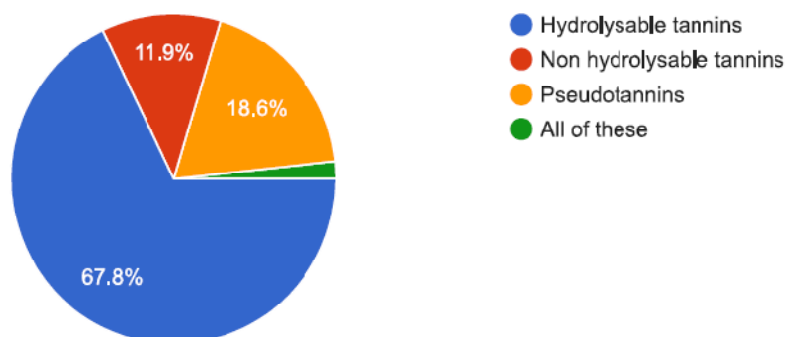
7. Vitae are related to

60 responses



8. Catechins and gallic acid are examples of

59 responses



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IMPROVEMENT SESSIONAL FOR SPOOR PERFORMERS**Notice for improvement sessional (2018-19)**

Date: 7/3/2019

Notice**Improvement Sessional examination**

All the students of I, II, III, IV B. Pharm. who want to appear for **Improvement exam**

- 1) They should apply to exam in-charge on or before 12.3.2019 and submit to Lende Sir and Gomase Sir
- 2) Ex-candidate can improve his internal assessment marks only at the supplementary exam. Held immediately after his regular examination.
- 3) Improvement exam will be on the whole subject syllabus.
- 4) Time table for improvement exam will be display soon.



Exam In-charge

Time table of Improvement Sessional examination (2018-19)

Improvement sessional summer 2019 Class First year B Pharm I Sem

C_Roll No.	Class	Yr	Sem	Name of student	HAP	P Analysis	PIC	Pharmaceutics
1	B. Pharm	I	I	Abhijeet Vinayak Deotale	9	8.5	12	NA
3	B. Pharm	I	I	Abhishek Raju Gawande	6	6	NA	NA
18	B. Pharm	I	I	Khushi Vijay Patil	10		NA	NA
20	B. Pharm	I	I	Konthoujam Pramod	7	6	NA	7
35	B. Pharm	I	I	Rahul Hanumanant Nagargoje	8	2	8	NA
36	B. Pharm	I	I	Rajeshree Gajanan Swarge	7	0.5	7	4
52	B. Pharm	I	I	Suhas Gajanan Atram	8	5	13	NA
56	B. Pharm	I	I	Tushar Vishwanath Pate	7	2	NA	5
62	B. Pharm	I	I	Kohekar Aditya	6		NA	NA
11	B. Pharm	I	I	Dhiraj Wankhade	NA	6.5	NA	NA
10	B. Pharm	I	I	Bhumika Arun Bidwaik	NA	6.5	NA	NA
39	B. Pharm	I	I	Rupesh Rameshwar Doifode	NA	6.5	NA	10
	B. Pharm	I	I	Khushi Vijay Patil	NA	6.5	NA	NA
23	B. Pharm	I	I	Megha Vitthal Tambile	NA	5.5	NA	7.5



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Question paper of improvement sessional exam

GOVERNMENT COLLEGE OF PHARMACY
Kathora Naka, Amravati- 444604
Re Sessional Examination 2018-19

Class-B.Pharm I
Time-1.00 hr

Date-27-03-2019

Subject: - Pharmaceutics I
Max. Marks: 30 Marks

checked submitted on 9/4/2019

Note- - All questions carry equal marks.

Ques.1. Solve following objective type questions. (5 x 02M)

- a) Give desired characteristics of pharmaceutical suspensions.
- b) Give classification of emulsions
- c) Define i) Elixirs ii) Capsules
- d) Enlist detection tests for identifying type of emulsion.
- e) Define posology. Give formula to calculate dose for children based on body surface area.

Ques.2. Solve Any Two short answer type questions from the following. (2 x 05M)

- a) Explain stability problems of emulsions.
- b) Define pharmaceutical incompatibility. Explain physical incompatibility in detail.
- c) Define Prescription. Explain various steps in handling of prescription

Ques.3. Solve Any One long answer type question from the following: (1 x 10M)

- a) Explain various factors affecting posology.
- b) Discuss in detail various types of suppository bases.



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GOVERNMENT COLLEGE OF PHARMACY
Kathora Naka, Amravati-444694

Improvement Sessional Examination 2018-19
Class:- B. Pharm-First Semester Roll No:- _____ Subject-Human Anatomy and Physiology I
Time: 1:00 hr Date:25/3/2019 Max. Marks: 30 Marks

Q.1. Multiple Choice Question**10 Marks**

- Simple epithelium is _____ cell thick.
a) one b) two c) two or more d) all
- Pavement epithelium is also known as _____
a) cuboidal b) ciliated c) simple squamous d) stratified
- cardiac muscle is _____
a) striated b) involuntary c) smooth d) both a and b
- blood from various parts of body is returned to _____
a) right ventricle b) right atrium c) left ventricle d) left atrium
- artery leaving from left ventricle of heart is _____
a) pulmonary artery b) aortic arch c) inferior vena cava d) superior vena cava
- IN ECG, P wave stands for _____
a) ventricle depolarization b) atrial depolarization c) atrial repolarization d) closing of AV valve
- Heart is surrounded by _____
a) Pericardium b) Myocardium c) Pericardial cavity d) Mediastinum
- left atrium receives _____ blood from heart
a) oxygenated b) deoxygenated
- Pulse rate in individual is normal _____
a) 10 beats/min b) 40 c) 50 d) 70
- Normal Pulse pressure is about _____
a) 40 mm of Hg b) 120 c) 80 d) 60

Write only answers of MCQ a,b,c,d									
1	2	3	4	5	6	7	8	9	10

Q.2. Short Answer Question (Answer any two) 10 Marks

- A) Epithelial tissue B) cardiac cycle and blood circulation
C) connective tissue

Q.3. Long Answer Question (Answer any one)**10 Marks**

- Describe anatomy of heart, blood pressure and ECG
- Describe in detail structure and functions of cell.



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Improvement Sessional Examination 2018-19

B. Pharm -I Pharm. Analysis-I Max. Marks: 30

Q.1. Explain the following with example: (10)

- a) Normality
- b) Molarity
- c) Cerimetry
- d) Nernst equation.
- e) Indicator

Q.2. Write note on any two (5x2=10)

- a) Solvents used in non-aqueous titrations.
- b) Primary and secondary standards.
- c) Preparation and standardization of 1 M sodium hydroxide solution.

Q. 3. Solve any one: (10)

- a) Explain the neutralization curves with example.
- b) Classify non aqueous titrations.

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Improvement Sessional Examination 2018-19

B. Pharm -I Pharm. Analysis-I Max. Marks: 30

Q.1. Explain the following with example: (10)

- a) Normality
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Q. 3. Solve any one: (10)

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- b) Classify non aqueous titrations.



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Roll No. - 53

Sessional Examination 2018-19

Class: B.PHARM I Direct II Year Subject: Environmental Science

Max.Marks 30

Date: 25.4.2019

Time - 60 Min.

1. Multiple choice questions (answer all the questions) 10 x 1 = 10
Make the circle or tick x to the correct option in the following
1. UN Conference on environment in 1972 was held at
a) Raio de Janeiro b) Stockholm c) Geneva d) Johannesburg
 2. Ecomark of our country is
a) Earthen mug b) Earthen pitcher c) Earthen saucer d) Earthen lamp
 3. Most polluted river in the world is
a) Yamuna b) Cavery c) Ganga d) Godawari
 4. Which of the following is a secondary air pollutant?
a) CO b) SO₂ c) O₃ d) CO₂
 5. Which of the following devices is suitable for removal of gaseous pollutant?
a) Cyclone separator b) Fabric filter c) Electrostatic precipitator d) Wet collector
 6. What is the maximum allowable concentration of fluorides in drinking water?
a) 1.0 mg/L b) 1.25mg/L c) 1.50mg/L d) 1.75mg/L
 7. Which of the following non-point source of water pollution?
a) Factories b) STP c) Urban and suburban lands d) All the above
 8. The most important indoor air pollutant is
a) SO₂ b) CO₂ c) NO₂ d) Radon gas
 9. Itai- itai disease was caused by consumption of rise contaminated with
a) Mercury b) Iron c) Cadmium d) Zinc
 10. sept. 16-23 is observed as
a) Ozone week b) Wild life week c) Biodiversity week d) Reduction week

Write only answers of MCQ in the form of options as a/b/c/d

1	2	3	4	5	6	7	8	9	10
b	c	c	b	b	d	d	a	b	a



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Answer sheet of improvement sessional exam**GOVERNMENT COLLEGE OF PHARMACY, AMRAVATI**

Tick appropriate choice

10785

Examination	I/II/III/Improvement	No. of supplement used	
Course	B.Pharm / Pharm.D / M.Pharm	Student Signature	<i>P. J. J.</i>
Year / Sem.	I/II/III/IV/V/VI/VII/VIII	Invigilator's signature	

Roll No.	36	Name	Pajares G. George	
Subject	Pharm. Chem.	Date	28/3/19	M

Q. No.	1	2	3	4	5	TOTAL	Signature of evaluator
Marks Obtained	7	3	4	-	-	(14)	<i>[Signature]</i>

(Start writing from here, Write on both side of paper)

Q2.

Ans 1] Haematinics is chemically represented as the two part of the name under to react and gives soluble substance for reaction called Haematinics, which are odourless & colourless. Ferrous Sulphate.

Properties :- 1) It is Crystalline
2) It is colourless
3) It is odourless
4) It is contain by metallic iron.

5) It is comes under the Greenish colour.

6) Ferrous Sulphate have formula of FeSO_4 .



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Tick appropriate choice

10780

Examination	I/II/III/Improvement		No. of supplement used	
Course	B.Pharm/Pharm.D/M.Pharm		Student Signature	<i>[Signature]</i>
Year / Sem.	I/II/III/IV/V/VI/VII/VIII		Invigilator's signature	<i>[Signature]</i>

Roll No.	39	Name	Rupesh Dhotole	M
Subject	pharmaceutics-I	Date	27/8/2019	

Q.No.	1	2	3	4	5	TOTAL	Signature of evaluator
Marks Obtained	4/4	08	6/6			19/30	<i>[Signature]</i>

(Start writing from here, Write on both side of paper)

Q-1

a) characteristics of pharmaceutical suspensions

- 1) suspensions are the biphasic liquid dosage form of medicament
- 2) suspensions are taken orally, parental, etc.
- 3) suspensions are not more stable
- 4) suspensions are used externally as well as internally.

b) classification of emulsions

- 1) oil in water (o/w)
- 2) water in oil (w/o)
- 3) water in water (w/w)
- 4) oil in oil (o/o)

c) detection test for emulsion

- 1) solubility
- 2) conductometry
- 3) diluification



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Examination	I/II/III/Improvement	No. of supplement used	10779
Course	B.Pharm / Pharm.D/M.Pharm	Student Signature	
Year / Sem.	I/II/III/IV/ V/ VI/ VII/ VIII	Invigilator's signature	
Roll No.	36	Name	Rajeshree G. Surge
Subject		Date	27/3/19
Q.No.	1	2	3
Marks	2	4	1
Obtained	7	5	08/30
TOTAL		Signature of evaluator	

(Start writing from here, Write on both side of paper)

Q-1

Ans a) Suspension is defined as the biphasic dosage is liquid form of medicament is divided into fine particles. When substance to patient.

Suspension is in liquid form. which give arise to oral route to patient. When the Particle is fined mixture to give rise the liquid dosage form.

Pharmaceutical Suspension.

- Suspension is mostly for oral cavity to patient.
- It is loosely packed
- It is not made hard cake
- Suspension is sedimently rapid work.



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10781

Examination	I/II/III/Improvement		No. of supplement used	
Course	B.Pharm/Pharm.D/M.Pharm		Student Signature	
Year/Sem.	I/II/III/IV/V/VII/VIII		Invigilator's signature	

Roll No.	20	Name	Pranod Konthoyam	
Subject	Pharmaceutics - I		Date: 27/03/19	

Q.No.	1	2	3	4	5	TOTAL	Signature of evaluator
Marks Obtained	05	05	04	—	—	14/30	Sain

(Start writing from here, Write on both side of paper)

Q1.

(a) → The desired characteristics of pharmaceutical suspensions are

i) Suspensions are the biphasic liquid dosage form.

ii) It finely divided particles are in range between 0.5 to 5 microns

b) → ~~classification~~ classification of emulsion are of two types

D oil in water (o/w) :-

oil is a disperse phase and hence the water is a continuous phase

n) water in oil (w/o) :-

That is also, water is the dispersed phase and oil is in the continuous phase.




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Tick appropriate choice

16719

Examination	I/II/III/Improvement	No. of supplement used	
Course	B.Pharm./Pharm.D/M.Pharm	Student Signature	<i>R. Khan</i>
Year / Sem.	I/II/III/IV/V/VI/VII/VIII	Invigilator's signature	<i>Agam</i>

Roll No.	66	Name	Umor Khan	
Subject				

Date: 25/04/19

Q.No.	1	2	3	4	5	TOTAL	Signature of evaluator
Marks	06	09	08			23	<i>Agam</i>
Obtained							

(Start writing from here, Write on both side of paper)

Q II.

(1) Air pollution is undesirable. Any physical, chemical, biological contamination/clay in the atmosphere is known as air pollution.

Effects of Air pollution

Air pollution has various harmful effects on the human, plants, animals and materials which are as follows.

(i) Effect of air pollution on human beings & Animals

Human beings are widely affected by the air pollution.

(a) By CO (Carbon monoxide gas)

It is the gas which is emitted out from automobiles, industries, buses etc. It is very harmful to humans.



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Class Notes

Sem. Vth sem.

2018-19

Page No.

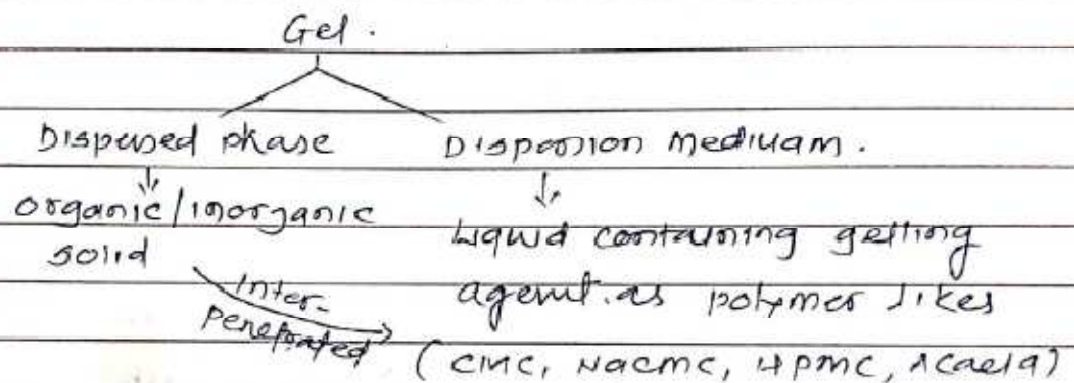
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Date-

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GEL

- * Defⁿ: It is define as a semisolid colloidal dispersion containing dispersed phase (organic or inorganic particles) are enclosed or interpenetrated into dispersion (Liquid) medium.



Hence any substance is added into liquid medium either aqueous or organic containing certain polymer as gelling agent which possess the properties as

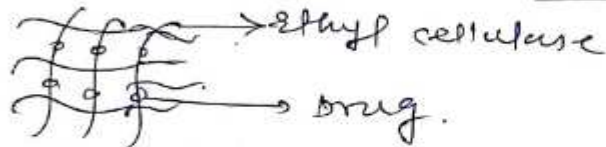
- Hydration: rapid uptake of water through matrix or cross linked structure of polymer.
- Swelling: due to penetration of water inside polymer it rapidly get swell by absorption of liquid medium.
- Viscosity: after rapid uptake of water polymer enhance viscosity of resulting system if any solid phase is dispersed into it & get penetrated inside polymer structure & form viscous semisolid mass.



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★ Structure of Gel. 1) (Matrix type)

When Gel are formed depending on polymer structure drug or API are entrapped inside polymer matrix resulting system called matrix type of Gel.
 Eg:- polymer dispersion of Ethyl cellulose.



Matrix of Ethyl cellulose

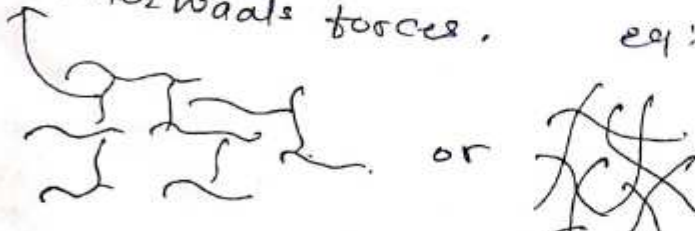
→ from above matrix drug are released in predetermined rate either by Matrix Erosion phenomena. i.e. matrix structure get erode due to subsequent uptake of liquid & rupture of matrix releases the drug particle.

2) Threaded or coiled / crosslinked Gel (Swelling type)

When polymers are linked together due to offering certain site for intermolecular bonding due to functional group or monomers linked together to form coiled / cross linked structure & resulting bond are formed b/w polymer - polymer or polymer - vehicles as

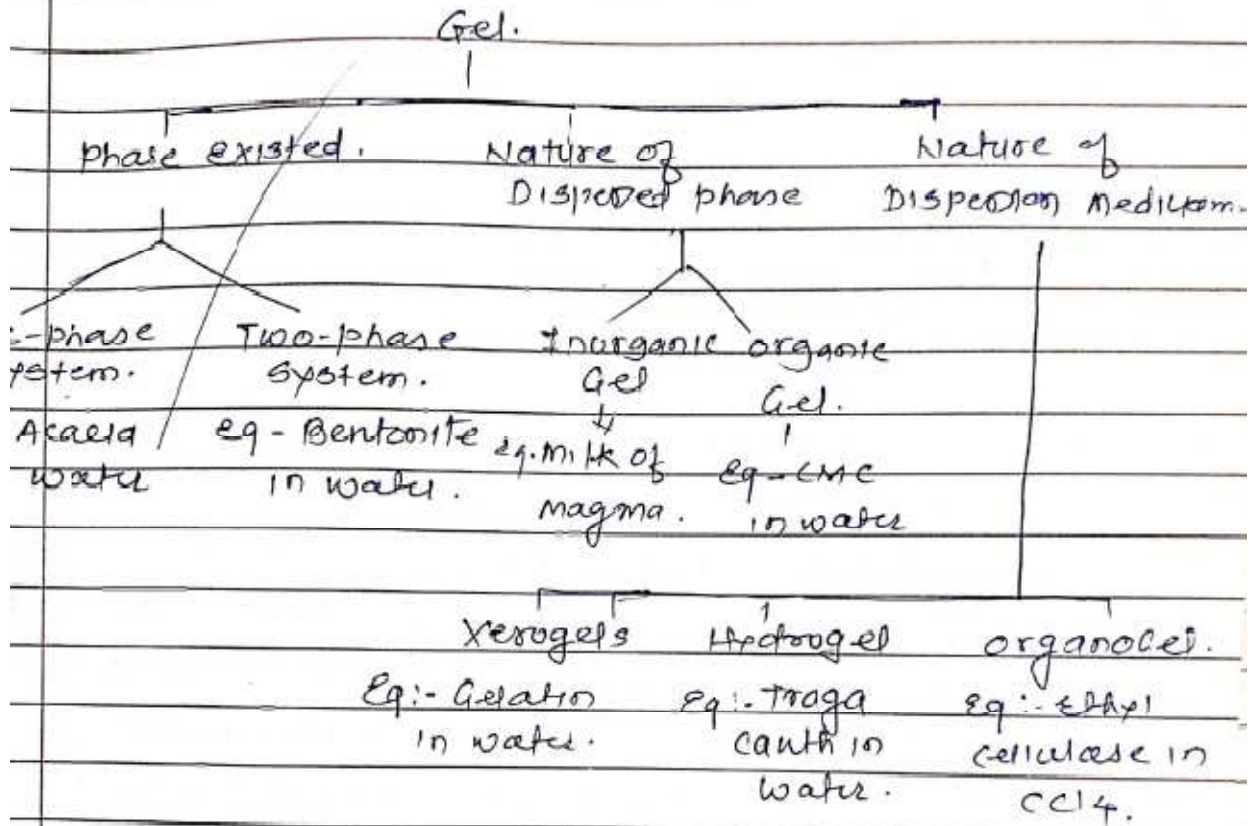
- 1) Weak hydrogen bond.
- 2) Van der Waals forces.

eg:- HPMC in water.



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Types of Gels.



Phase based Gel.

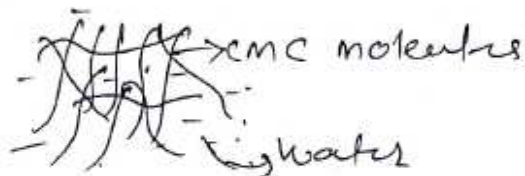
One-phase system: - They contain organic macro molecules uniformly distributed in a liquid in such a manner that no apparent boundaries betⁿ dispersed phase & liquid (medium).

A single or one phase system is made by dispersing macro molecules like Gelatin, Tragacanth in water. The drug are dispersed inside this system it is penetrated into polymer without forming any boundaries betⁿ them. hence it called one phase system. This macro molecules twisted or threaded like strand



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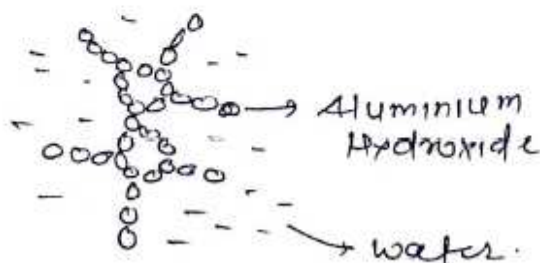
form. The unit are often bonded together by stronger Van der Waals forces so as to form crystalline & amorphous region throughout the entire system.
 eg:- CMC in water.



② Two-phase system - In this gel consist of network of small discrete particles in liquid medium. When this particles are dispersed into liquid medium having lower affinity towards liquid hence particles are aggregated or flocculated together to form aggregated networks of solid particles hence boundary is existed betⁿ solid & liquid phase hence called two phase system.

eg:- Aluminium hydroxide gel, milk of magnesia.

In Aluminium hydroxide gel particles are aggregated together into water resulting acquiring viscous & thixotropic behaviours based on agitation or extreme effect.



→ In this system aggregated flocules form boundary with water hence it looks like coarse dispersion i.e. suspension.

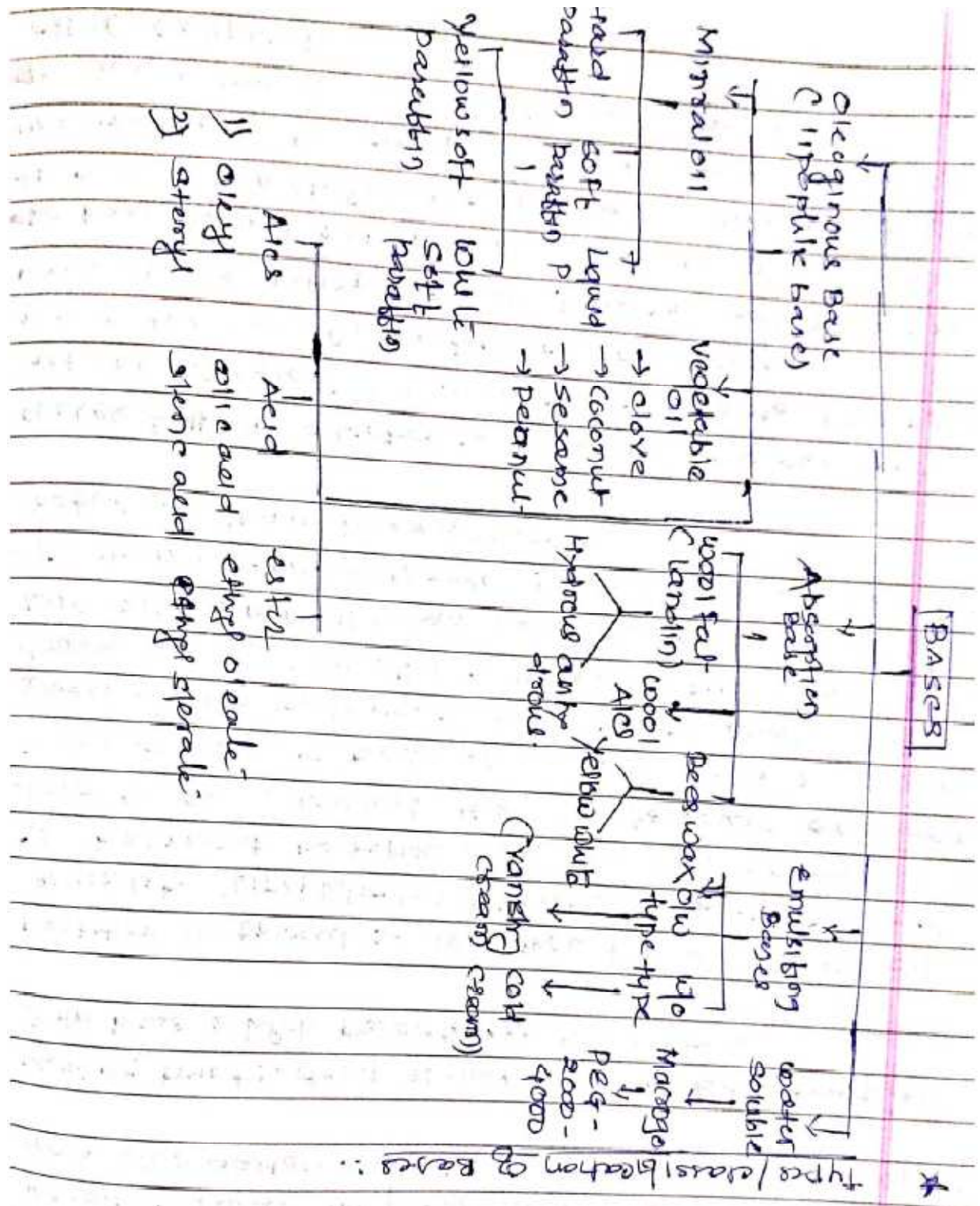


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- ★ Formulation of ointment :-
- ★ API & Excipient Requirement :-
- D) API :- substance having therapeutics importance are deliver via skin should posses following properties.
 - A) molecular weight :- Ideal drug should posses molecular weight less than 600 dalton easy to permeate across the epidermis.
 - B) Melting point :- drug should melt at skin temp along with base which promote its penetration.
 - C) partition coefficient :- drug should posses both oil solubility (lipophilicity) & water solubility (hydrophilicity) i.e. balanced partition coefficient (K) & indicate it will easy to cross through the skin because epidermal layer of skin is made up by both lipid as well as water soluble proteins. so drug can penetrate by transcellular (dissolved in lipid) & paracellular (gap betⁿ cell & lipids through water channels).
eg:- triamcinolone acetonide posses balanced partition coefficient than hydrocortisone.
 - E) Bases & their selection :- bases are the substance act as 'carrier' for drug which promote drug penetration across the skin by melting at skin temp.
Bases should satisfy certain fundamental requirement-
 - 1) The base should not interfere with normal skin function
 - 2) It posses non-staining nature so clothes does not get colored
 - 3) Non-irritating to skin & low sensitization index to skin
 - 4) It should be inert i.e. compatible with drug & other excipient



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f) Oleaginous Bases :- These are 'lipophilic, insoluble in water i.e. oily & fatty acid substances.

→ Due to oily nature possess certain limitation

a) greasy in nature

b) difficult to remove from skin

c) Rancid on storage (fatty acid undergoes oxidation)

d) Retention body heat i.e. which prevent the secretion of sweat from water by forming thin layer on skin hence skin temp rises & produce uncomfortable feeling to skin. (warm skin)

1) Hydrocarbon (mineral oils) :-

i) Hard paraffin :-

* source :- petroleum (mineral oil)

* process for isolation :- Distillation

* properties :- M.P. is $50-60^{\circ}\text{C}$

* Morphology :- colourless or white, odourless, translucent

ii) soft paraffin :-

* source :- petroleum

* properties :- m.p. $38-55^{\circ}\text{C}$

* morphology :- translucent soft mass, odourless & tasteless

* types :- soft paraffin

yellow soft paraffin

white soft paraffin

↓
obtained by bleaching process from yellow soft paraffin

↓
contraindicated use in
ophthalmic product - cause
irritation to eye.



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- ⑤ Liquid Paraffin :- (White mineral oil)
- * Source :- petroleum
 - * Separation/Isolation - Distillation of petroleum
 - * Properties :- m.p. = Room temp.
- * Eg :- Emulsifying Ointment Base
- 1) Emulsifying wax - 30%
 - 2) Soft Paraffin - 50%
 - 3) Liquid paraffin - 20%
- ⑥ Vegetable oil :- Almond, clove, coconut oil etc.
- ⑦ Acids, Acid Ester :-
- | Acyl | Acid | Tester |
|------------------|---------------|---------------------|
| 1) cetyl acid | cetyl acid | ↓ |
| 2) Stearyl acid | stearic acid | ethyl stearate |
| 3) oleyl acid | oleic acid | ethyl oleate |
| 4) myristyl acid | myristic acid | isopropyl myristate |
- All above compounds are fatty acid & esters
offer good consistency for ointment.
- * Absorption Bases :-
- These bases are water insoluble but absorb large portion of water & form oil/water/o emulsion.
- ⑧ Lanolin (wool fat) :- (Anhydrous form)
- Source :- wool of sheep
 - Properties :- Insoluble in water but absorb 50%
 - M.P. :- 50-60°C
- Eg :- Simple ointment (B.P.)
- 1) wool fat - 5%



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