ASSIGNMENTS

The assignments or Report writing should enable students to see the purpose for their study and some definite objectives to be achieved. The objectives of the lesson are essential in giving direction and definiteness to the pupils' thought and activities.

The procedure to be followed by the students in doing the work assigned must be explained by the teacher to make the study period effective. The purpose of the lesson assigned must be made known to the students and be recognized by them so that their interest may be stimulated. This refers to the integration of the past and the new lesson or to the principles of the appreciative learning. The psychological principle of apperception is thus given full recognition in the assignment function. Where the elements of appreciative experience are present, the teacher needs to direct the students in the use of such for interpretive purposes.

Another important function of the assignments or Report writing is the recognition of individual differences. All studies in mental measurements agree that among students there exist vast differences in intelligence, aptitudes, and temperaments. Even interests of students are found to be widely divergent. Students work with more vigor, ease, and pleasure when the things they do are in conformity with their interests. It is, therefore, exceedingly important that the assignment provides for these varied interest, aptitudes, and abilities of the pupils.

GRADING RUBRICS FOR REPORT WRITING/ASSIGNMENT

GRADING →	EXCELLENT QUALITY (5)	CONSIDERABLE QUALITY (4)	ADEQUATE QUALITY (3)	INCONSISTENT QUALITY (2)	UNSATISFACTORY QUALITY (1)
FORMAT/ LAYOUT	Follows formal report conventions, Follows formal report conventions, Prefatory parts, Parallel headings, Supplementary parts Demonstrates an effective layout.	Follows all but one of the formal report conventions, Demonstrates an Effective layout.	Reveals two format errors Applies convention incorrectly/ incompletely	Reveals three format errors, Applies convention incorrectly/ incompletely	Non-presentable because of numerous format errors, Applies convention incorrectly/ incompletely
CONTENT / STRUCTURE: INTRODUCTION	Exhibits all of following characteristic: Begins with background / definition, Explains purpose, Describes scope and limitations of report, Offers a preview of the findings	Exhibits two errors in content/ structure: Begins with back ground /definition, Explains purpose, Describes scope and limitations of report Offers a preview of the findings	Reveals three errors in content/ structure: Provides partial background/ definition, Omits the purpose, Does not establish scope and limitations of report, Provides only a partial preview of findings	Demonstrates four major weaknesses: Provides a weak background/ definition Omits the purpose Does not establish scope and limitations of report Omits preview of findings	Demonstrates the following multiple weaknesses: Provides an ineffective background/definition, Omits the purpose Does not establish scope and limitations of report, Omits preview of findings

CONTENT / STRUCTURE: BODY	Discusses topic thoroughly and objectively, Use logical order to present information, Provides facts and figures, Uses appropriate length	Discusses topic adequately and objectively, Use logical order to present information, Provides facts and figures, Uses appropriate length	Discusses topic inconsistently Is sometimes vague Shows inconsistent organization Is too short/long	Does not discusses topic is vague, confusing Shows inconsistent organization Is too short/long	No discussion of topic Is cryptic, vague Shows no organization Is too short/long
CONTENT / STRUCTURE: CLOSING / RESULTS / CONCLUSION	Includes an effective summary of data presented, Draws conclusions, that are analytical, based on complete data, Recommends action, based on findings, Ends courteously, professionally Facilitates quick response based on need, data	Includes an effective summary of data presented, Draws conclusions, that are analytical, data somewhat complete Recommends action, partially based on findings Ends courteously Facilitates quick response based on need only	Includes a partial summary Draws partial conclusions, from data not presented Partial personalized ending Partial action close Partial facilitated response	Omits an effective summary Draws partial conclusions based on hearsay, not data Does not personalize ending Action close confusing Confusing facilitated response	Omits an effective summary of any kind Draws no conclusions Makes no recommendations No personalize ending Omits action close Does not facilitate response
GRAMMAR/ SPELLING	Shows effective use of proof-reading and editing: Eliminates all but a few minor errors in grammar, spelling, punctuation, acronym usage, and capitalization	Exhibits only six of the following errors: Spelling/word choice Mechanics: Sentence errors Pronoun errors Subject/verb Agreement, modifiers Parallel structure Punctuation Capitalization	Reveals seven of the following errors: Spelling/ word choice Mechanics: Sentence errors Pronoun errors Subject/verb agreement, modifiers Parallel structure Punctuation Capitalization	Affects credibility due to the following eight errors: Spelling/word choice mechanics: Sentence errors Pronoun errors Subject/verb agreement, modifiers Parallel structure Punctuation Capitalization	Is far too brief for adequate evaluation Affects credibility due to: Spelling/ word choice Mechanics: Sentence errors Pronoun errors Subject/verb agreement, Modifiers Parallel structure Punctuation Capitalization

B. Pharm. 4th Year 1st Semester, 2022-23, CA2

COURSE: B. Pharm.

PAPER: INSTRUMENTAL METHODS OF ANALYSIS **CODE: PT-711**

Full Marks: 25

Read the following Case Study carefully and then provide your answer with explanations. Special credits would be given to those who would provide relevant graphical or imagery explanations along with the report.

Jason got absorbed in a pharmaceutical company and got place in Quality Control. First day he was given an API of Voglibose (an antidiabetic drug) which newly came into the market. He was asked to test the purity of API by one sensitive assay method. He previously did not know any analytical method or wavelength for the assay of the same. However, he was given the charge for it. Now answer the following questions:

Q. No	Question	Map. CO	Marks
1	Can he use UV-Visible Spectroscopy at all to do the assay? Justify with electronic structure and explanation.	1	6
2	If yes (IF), what would the analytical wavelength for the assay? How can he find out the analytical wavelength?	1	6

3	How many absorption bands can he expect from the UV-Vis absorption of the compound? Explain with transitions.	1	6
4	The Absorptivity (1%, 1cm) of Voglibose is also not given since it is a function of the solvent he will be using. Depending on the solvent he will use, how could he find out the same? Explain with correlating mathematics and Beer's Lambert's Law.	1	7

QUESTION PAPER AND CO. MAPPING

CO	NO OF QUES.	MARKS
CO. 1	4	25
CO. 2		
CO. 3		
CO. 4		
CO. 5		
TOTAL		25

M. Pharm. 1ST Year 1ST Semester, 2022-23, 1ST continuous Assessment

COURSE: M. PHARM

PAPER: PHARMACEUTICAL VALIDATION **CODE: MPA-103T**

Time: SUBMIT BEFORE 10TH OCT 22 **Full Marks: 25**

INSTRUCTIONS

1. Assignment should be written in own hand writing with blue/black pen.
2. No typing or print document should be submitted.
3. Mention page number properly at the right bottom corner of each page.
4. Attach the front page mentioning your name, University roll no, semester, year, Subject, Subject code and topic.
5. **Pdf file** should be renamed as "**Roll no_your name" (eg. 18901918025_Name).**

ASSIGNMENT Topic	Map. CO	Marks
Apply your understanding to describe in detail the Qualification and Validation, Advantage of Validation, Streamlining of Qualification & Validation process and Validation Master Plan.	1	25

ASSIGNMENT AND CO. MAPPING

CO	NO OF QUES.	MARKS
CO. 1	CO1	25
CO. 2		
CO. 3		
CO. 4		
CO. 5		

	TOTAL	1	25

B. Pharm. 3RD Year 6TH Semester, 2023, 1ST continuous Assessment

COURSE: B. PHARM

PAPER: PHARMACEUTICAL QUALITY ASSURANCE CODE: PT611N

Full Marks: 25

WRITE THE Presentation within 5-6 slides (excluding front page and last slide), Convert your file into PDF format and Rename the PDF with your University Roll No. Name AND UPLOAD IN PDF FORMAT IN THE UPLOADING SECTION OF GOOGLE FORM.

PRENSENTATION TOPIC		Map. CO	Marks
Total Quality Management (TQM): Definition, elements, philosophies		CO1	25
ASSIGNMENT AND CO. MAPPING	CO	NO OF QUES.	MARKS
	CO. 1	CO1	25
	CO. 2		
	CO. 3		
	CO. 4		
	CO. 5		
	TOTAL	1	25

B. Pharm. 2ndYear4thSemester, 20232ndContinuous Assessment

SUBJECT: MEDICINAL CHEMISTRY I (THEORY) CODE: PT 413 (N)

Time: ALL HAVE TO SUBMIT ON or BEFORE 8TH MARCH,2023 **Full Marks**: 25

Instructions: Please read carefully and follow the given instructions.

1. **Assignment should be written in your own handwriting with blue/black pen.**
2. **No typing or printing document should be submitted.**
3. Mention the page number properly at the right bottom corner of each page.
4. Attach the front page mentioning your name, University roll no, semester, year, Subject, Subject code and topic.
5. **Pdf file should be renamed as "Roll no_your name" (eg. 18901918025_Name).**
6. Grading will be as per rubrics provided by the Examination cell.
7. You should submit your assignment in the link provided by the Examination cell to upload the PDF of your assignment.

Q. No	Topic for the assignment of All students	Map. CO	Marks
1	Discuss and explain the effect of the physico-chemical properties of drug in the efficacy of its biological activity with proper examples.	CO.PT 413N.1	15

2	Elaborate on how drug metabolism affects thebiological activity of drug.	CO.PT 413N.2	10

QUESTION PAPER AND CO. MAPPING

CO	NO OF QUES.	MARKS
CO. 1	1	15
CO. 2	1	10
CO. 3	0	0
CO. 4	0	0
CO. 5	0	0
TOTAL	3	25

Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur - 713206
B. Pharm. 3rd yr 5th Semester' 2022-2023
GRADE SHEET CONTINUOUS EVALUATION 1 (CA2)
PAPER: Pharmacognosy & Phytochemistry II Theory CODE: PT 512

SL. NO	UNIVERSITY ROLL NO	NAME OF THE STUDENT	FORMAT/ LAYOUT	CONTENT / STRUCTURE: INTRODUCTION	CONTENT / STRUCTURE: BODY	CONTENT / STRUCTURE: CLOSING /RESULTS / CONCLUSION	GRAMMAR/ SPELLING	TOTAL (25)
1	18901920001	RAM SWARUP CHATTOPADHYAY	4	4	4	3	4	19
2	18901920002	MD TOUHEED AHAMED	4	4	4	3	3	18
3	18901920003	SAGNIK DE	4	3	3	3	3	16
4	18901920004	NUHIN SK	3	3	3	2	3	14
5	18901920005	TAMAL CHATTERJEE	4	3	2	3	3	15
6	18901920006	KOUSHIK DAS	4	4	4	4	5	21
7	18901920007	SUBRATA DUTTA	3	4	4	4	4	19
8	18901920008	TUSHAR DEBNATH	4	4	2	2	3	15
9	18901920009	DIBENDU SANNIGRAHI	4	4	4	3	4	19
10	18901920010	SATHI GHOSH	4	4	4	3	5	20
11	18901920011	SAIKAT GOSWAMI	3	2	3	3	3	14
12	18901920012	ANIKET OJHA	5	5	5	4	4	23
13	18901920014	POULAMI SINGHA	5	5	5	4	3	22
14	18901920	MAHIMA CHOWDHURY	4	4	4	3	4	19

	015							
15	18901920016	SAMPRITI MISHRA	3	2	2	2	4	13
16	18901920017	SRIJITA BASAK	5	5	5	4	3	22
17	18901920018	ABHISHEK CHOWDHURY	3	3	2	2	3	13
18	18901920019	BILASH PATRA	4	4	4	2	4	18
19	18901920020	PRITAM MONDAL	3	4	4	3	4	18
20	18901920021	SHYAMACHARAN BANERJEE	4	5	4	4	4	21
21	18901920022	RITWIM MONDAL	4	5	5	3	4	21
22	18901920023	SOURAV POULIK	4	3	4	4	4	19
23	18901920024	ANUPAM SINGHA ROY	4	3	4	4	4	19
24	18901920025	SUBHASH GHOSH	3	3	2	3	3	14
25	18901920026	BASTAV MAZUMDAR	4	4	3	4	3	18
26	18901920027	MOHAN CHANDRA BARAL	4	4	4	4	3	19
27	18901920028	SHANTANU BERA	4	4	4	3	4	19
28	18901920029	BITHIKA BANERJEE	4	5	5	5	4	23
29	18901920030	ANOMITA DAS	4	5	5	4	4	22
30	18901920031	ANKITA DEY	4	5	5	5	4	23
31	18901920032	AGNITH MAITY.	4	4	3	3	4	18
32	18901920033	SAYAN NANDI	4	4	4	4	3	19
33	18901920034	TAPABRATA BHANJA	4	4	5	4	4	21
34	18901920035	ARITRA NANDY	4	5	5	4	4	22
35	18901920036	ANIRBAN DAN	4	4	3	3	4	18
36	18901920037	SUBHANKAR DAS	4	4	5	4	4	21
37	18901920038	NEHA DAS	4	4	5	3	4	20
38	18901920039	ANKAN MUKHERJEE	4	4	4	4	4	20

39	18901920040	SOHAM KUNDU	4	4	5	3	4	20
40	18901920041	SUMAN KUMAR PANDA	4	4	5	4	4	21
41	18901920042	ARKA GANGULY	3	4	4	3	4	18
42	18901920043	ANWESHA BANDYOPADHYAY	4	4	5	4	4	21
43	18901920044	INDRANIL KUNDU	3	4	4	3	3	17
44	18901920045	RITWIK SAHOO	4	4	5	4	4	21
45	18901920046	SOUVIK GHORAI	4	4	3	3	4	18
46	18901920047	ARNAB CHOWDHURY	4	5	4	4	4	21
47	18901920048	SAYAN KAR	4	4	5	5	4	22
48	18901920049	VISHAL KUMAR MAHATO	4	4	3	4	4	19
49	18901920050	SARBARTHA DAS	4	5	5	3	4	21
50	18901920051	SUMAN CHATTERJEE	4	4	4	3	4	19
51	18901920052	SOUBHAGYA MUKHERJEE	4	4	4	4	5	21
52	18901920054	SUSHOVAN MAITY	4	4	4	4	3	19
53	18901920055	RONAJIT MONDAL	3	4	4	4	4	19
54	18901920056	ARPAN KAR	4	5	5	4	4	22
55	18901920057	BIDHAKAR RAY	3	3	4	3	4	17
56	18901920058	ABHISHEK MALIK	3	2	3	2	3	13
57	18901920059	JEET BANERJEE	4	4	3	3	3	17
58	18901920060	SHOAIB AKHTAR	4	4	4	3	3	18
59	18901920061	RANADEEP BOSE	4	4	5	3	4	20
60	18901920062	SOYEB AKTAR	4	4	4	3	4	19
61	18901920064	SUMANA DAS	4	4	5	4	3	20
62	18901920065	SAYAN HATI	4	5	5	3	4	21
63	18901920067	ROHAN MONDAL	4	4	4	3	3	18

64	18901920069	ANTARA GUPTA	4	5	4	4	4	21
65	18901920070	AMRITA SINGHA	4	5	5	4	4	22
66	18901920071	ARIJIT SIL	4	5	4	3	4	20
67	18901920072	SUJATA BURNWAL	4	5	4	4	4	21
68	18901920073	PRITAM JANA	4	4	5	4	4	21
69	18901920074	SUSHANTA SINGHA	3	4	4	3	4	18
70	18901920075	SAPTARSHI BHATTACHARJEE	3	4	5	3	4	19
71	18901920076	BIKRAM DAS	4	4	5	4	4	21
72	18901920077	BAPI KONAI	3	4	4	4	4	19
73	18901920078	SHRABANI DAS	4	5	5	3	4	21
74	18901920079	RISHAV SETH	4	5	5	4	4	22
75	18901920080	AYUSH SEN	4	4	4	4	4	20
76	18901920081	RIK KARAK	4	5	4	3	4	20
77	18901920082	MD SAKIL HASAN	4	4	4	3	4	19
78	18901920083	SK SAMIM HOSSAIN	4	4	4	3	4	19
79	18901920084	VANSHIKA AGARWAL	4	5	5	4	5	23
80	18901920085	SAUMYABRATA BHATTACHARYA	4	5	4	3	4	20
81	18901920086	SOUGATA GHOSHAL	3	4	4	3	4	18
82	18901920087	ANIK MUKHOPADHYAY	4	4	4	3	4	19
83	18901920088	TAMAL PARIA	4	5	4	3	4	20
84	18901920089	TANUSHREE PRADHAN	4	5	5	3	4	21
85	18901920090	MD SAFI	3	2	3	2	3	13
86	18901920091	BIBEKANANDA BHUIN	4	4	4	4	4	20
87	18901920092	SUMAN MAITY	4	5	4	4	3	20
88	18901920093	SAGAR MANDAL	4	5	5	3	4	21

89	18901920094	APARESH BERA	4	4	5	4	4	21
90	18901920095	RITTIK PAUL	4	4	4	4	3	19
91	18901920096	SUBHRAKANTA MANDAL	4	4	3	3	3	17
92	18901920097	SOUMYADEEP GUHA	4	5	5	4	4	22
93	18901920098	NABANITA SEN	4	4	5	3	4	20
94	18901920099	SHANKHASREE SEN	4	4	4	4	4	20
95	18901920100	PRITAM DE	4	5	4	3	4	20
96	18901920101	SINCHAN KUMAR ROY	4	5	4	4	4	21
97	18901920102	AJITESH PATRA	4	4	3	3	3	17
98	18901920103	JYOTIRADITYA DAS	4	4	4	3	4	19
99	18901920104	PRIYANKA JANA	3	5	5	4	4	21
100	18901921105	SIDDHANTA MISHRA	4	5	5	4	4	22
101	18901921106	POULAMI BISUYI	4	5	5	5	4	23
102	18901921107	SURANJANA BASAK	4	5	5	4	4	22
103	18901921108	ATANU JANA	4	5	5	5	4	23
104	18901921109	PRABIR MONDAL	3	4	5	5	4	21
105	18901921110	SAMPRITI PRAMANICK	4	4	5	4	4	21
106	18901921111	DEBJYOTI DEY	5	5	5	4	4	23
107	18901921112	SAYAK MONDAL	4	4	5	4	4	21
108	18901921113	RIYA KUNDU	4	5	5	4	4	22
109	18901921114	BUBAI MOHISH	4	5	4	4	4	21
110	18901921115	SANDIP RUHIDAS	4	5	5	4	4	22
111	18901921116	SK NOMRUDDIN	4	4	4	4	4	20
112	18901921117	ARPAN NANDI	4	5	5	4	4	22

POWER POINT PRESENTATION

GRADING RUBRICS FOR POWER POINT PRESENTATION

GRADING	5	4	3	2	1
CONTENT	Content is accurate and information is presented in a logical order.	Content is accurate but some information is not presented in a logical order, but is still generally easy to follow.	Content is accurate but some information is not presented in a logical order making it difficult to follow.	Content is questionable and information is not presented in a logical order making it difficult to follow.	Content is inaccurate and information is not presented in a logical order making it difficult to follow.
SLIDE CREATION	Presentations flows well and logically presentation, reflects extensive use of tools in a creative way, correct number of slides.	Presentations flows well, tools used correctly, correct number of slides, overall presentation is interesting.	Presentations flows well, some tools used to show acceptable understanding, correct number of slides.	Presentations is unorganized, tools are not used in a relevant manner, lacking in number of slides.	Presentation has no flow, no tools used, insufficient number of slides.
SLIDE TRANSITIONS	Transitions are smooth and interesting, transitions enhance the presentation.	Smooth transitions are used on most slides.	Smooth transitions are used on some slides.	Very few transitions are used and/or they distract from the presentation.	No transitions used
MECHANICS	No spelling errors, no grammar errors, text is in authors own words.	Few spelling errors, few grammar errors, text is in authors own words.	Some spelling errors, some grammar errors, text is in authors own words.	Some spelling errors, some grammar errors, Most of text is in authors own words.	Many spelling errors and/or text is copied.
TECHNOLOGY CONNECTION	Comprehensive use of technology in apparent.	General understanding of technology.	Acceptable understanding of technology.	Little understanding of technology.	No understanding of technology.

Shobhan Bose

Shobhan Bose
(IC_Exam)

B. Pharm. 3rd Year 5th Semester, 2022-23, 1st CA
COURSE: B. PHARM

PAPER: Pharmacognosy & Phytochemistry II Theory **CODE: PT 512**
Full Marks: 25

Make a PowerPoint presentation of 6-7 slides; including the titular slide. Everyone will be evaluated on the basis of the rubric set by examinations department, BCRCP. Everyone is instructed to complete the presentation within stipulated time.

Assignment/Topic	Map.	Marks

		CO	
STUDY OF UTILIZATION OF RADIOACTIVE ISOTOPES IN INVESTIGATION OF BIOSYNTHETIC PATHWAYS		1	25
PowerPoint Presentation& CO. MAPPING	**CO**	**NO OF QUES.**	**MARKS**
	CO. 1	1	25
	CO. 2	-	-
	CO. 3	-	-
	CO. 4	-	-
	CO. 5	-	-
	TOTAL	1	25

B. Pharm. 2 Year 3rdSemester, 2022,1stContinuous Assessment

SUBJECT: PHYSICAL PHARMACEUTICS 1(THEORY) **CODE: PT 316**

Time: 7 days **Full Marks: 25**

Topic of assignment		**Map. CO**	**Marks**
Complexation: Classification, methods of analysis and applications in pharmaceutical fields		CO1	25
QUESTION PAPER AND CO. MAPPING	**CO**	**NO OF QUES**	**MARKS**
	CO1	1	25
	CO2	0	0
	CO3	0	0
	CO4	0	0
	TOTAL	1	25

B. Pharm. 4TH Year 7TH Semester, 2022-23, 1ST continuous Assessment

COURSE: B. PHARM

PAPER: INSTRUMENTAL METHODS OF ANALYSIS **CODE: PT-711**

Time: WITHIN 28TH JULY 22 ALL HAVE TO SUBMIT **Full Marks: 25**

WRITE THE ASSIGNMENT IN AN A4 PAPER AND UPLOAD IN PDF FORMAT IN THE UPLOADING SECTION OF GOOGLE FORM.

PRESENTATION Topic	**Map. CO**	**Marks**
Gas chromatography – Introduction, theory, instrumentation, Derivatization, temperature programming, advantages, disadvantages and applications	3	25

ASSIGNMENT AND CO. MAPPING	CO	NO OF QUES.	MARKS
	CO. 1		25
	CO. 2		
	CO. 3	CO3	
	CO. 4		
	CO. 5		
	TOTAL	1	25

B. Pharm. 4th Year 7th Semester, 2022, 1st CA

COURSE: B. Pharm.

PAPER: INDUSTRIAL PHARMACY II **CODE: PT-716A**

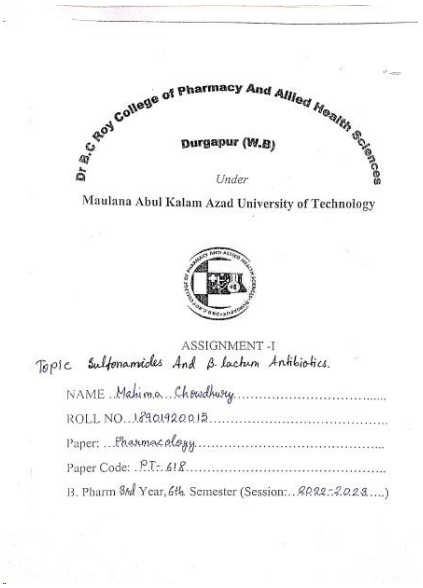
Full Marks: 25

PREPARE YOUR PRESENTATION (PPT) WITHIN 7-8 SLIDES AND BE READY TO PRESENT YOUR SLIDES IN THE SCHEDULE CLASS. SEPARATE GOOGLE LINK WILL BE PROVIDED FOR UPLOADING YOUR PREPARED PRESENTATION (PPT). AT THE TIME OF SUBMISSION YOU SHOULD RENAME IT WITH YOUR UNIVERSITY ROLL NUMBER AND NAME.

Q. No	Question	Map. CO	Marks
1	A presentation on "Good Laboratory Practices (GLP)".	3	25

QUESTION PAPER AND CO. MAPPING	CO	NO OF QUES.	MARKS
	CO. 1		
	CO. 2		
	CO. 3	1	25
	CO. 4		
	CO. 5		
	TOTAL	1	25

SAMPLE OF ASSIGNMENT



Dr B.C Roy College of Pharmacy And Allied Health Sciences
Durgapur (W.B)
Under
Maulana Abul Kalam Azad University of Technology

ASSIGNMENT -I

Topic Sulfonamides And β-lactum Antibiotics.

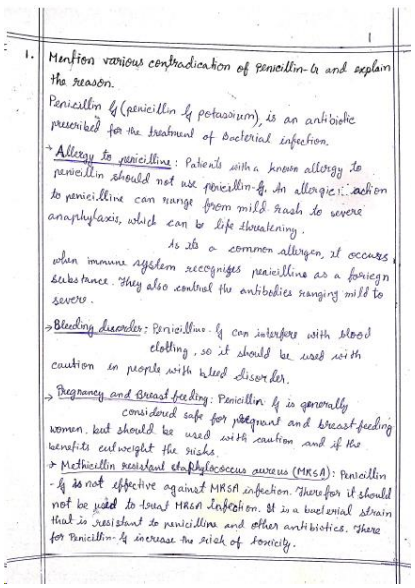
NAME ..Mahima...Choudhury.....

ROLL NO..18901920015.....

Paper: ...Pharmacology.....

Paper Code: .PT-.618.....

B. Pharm 8th Year, 6th Semester (Session:...2022-2023....)



1.

1. Mention various contradication of penicillin-G and explain the reason.

Penicillin G (penicillin G potassium), is an antibiotic prescribed for the treatment of bacterial infection.

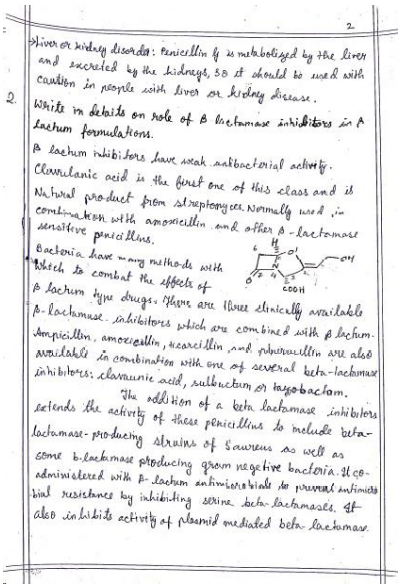
→ Allergy to penicillins: Patients with a known allergy to penicillin should not use penicillin-G. An allergic reaction to penicilline can range from mild rash to severe anaphylaxis, which can be life threatening.

As it is a common allergen, it occures when immune system recognises penicillins as a foreign substance. They also contral the antibodies ranging mild to severe.

→ Bleeding disorder: Penicillins G can interfere with blood clotting, so it should be used with caution in people with blood disorder.

→ Pregnancy and breast feeding: Penicillin G is generally considered safe for pregnant and breast-feeding women, but should be used with caution and if the benefits outweight the risks.

→ Methicillin resistant staphylococcus aureus (MRSA): Penicillin-G is not effective against MRSA infection. Therefor it should not be used to treat MRSA infection. It is a bacterial strain that is resistant to penicillins and other antibiotics. There for Penicillin-G increase the risk of toxicity.



2.

→ liver or kidney disorder: Penicillin G is metabolized by the liver and excreted by the kidneys, so it should be used with caution in people with liver or kidney disease.

2. Write in details on role of β lactamase inhibitors in β lactum formulations.

β lactum inhibitors have weak antibacterial activity. Clavulanic acid is the first one of this class and it Natural product from streptomyces. Normally used in combination with amoxicillin and other β-lactamase sensitive penicillins.

Bacteria have many methods with which to combat the effects of β lactum type drugs. There are three clinically available β-lactamase inhibitors which are combined with β lactum. Ampicillin, amoxicillin, mezlocillin and piperacillin are also available in combination with one of several beta-lactamase inhibitors: clavaunic acid, sulbactam or tazobactam.

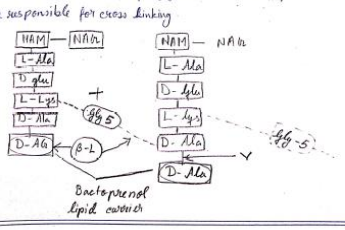
The addition of a beta lactamase inhibitors extends the activity of these penicillins to include beta-lactamase-producing strains of S.aureus as well as some β-lactamase producing gram negative bacteria. If co-administered with β-lactum antimicrobials to prevent antimicrobial resistance by inhibiting serine beta-lactamases. It also inhibits activity of plasmid mediated beta-lactamase.

3

3. Write in details on role of peptidoglycan on bacterial cell and mechanism of different β lactam antibiotics.

Peptidoglycan is a major component of the bacterial cell wall and plays a crucial role in maintaining cell shape, integrity and protection against osmotic pressure. It is a complex polymer made up of repeating units of two sugar derivatives, N-acetylglucosamine (NAG) and N-acetylmuramic acid (NAM) crosscl linked by short peptide chains. Peptidoglycan provides rigidity to the bacterial cell wall and helps in preventing osmotic lysis.

Beta-lactum anti-biotics such as penicillin, ampicillin and cephalosporins, are a class of anti-biotics that target the peptidoglycan layer of the bacterial cell wall. They work by inhibiting the activity of enzymes called transpeptidase, which are responsible for cross linking



4

The β-lactum antibiotics have a β-lactum ring in their structure. It's a four membered ring and cyclic amide structure.

It stop Drugs from binding – Non-porous cell walls, new PBP's and Random mutation of new PBP. Modify Target- Production of more target. Need more antibiotic.

Mechanism: The amide of the β-lactum ring is unusually reactive due to ring strain and conformational arrangement which does not allow the lone pair of the nitrogen to interact with the double bond of the carbonyl.

β Lactams acylate the hydroxyl grp on the residue of PBP active site in an irreversible manner. This reaction is further aided by the oxyanion hole, which stabilizes the tetrahedral intermediate.

Mono lactams are monocyclic beta-lactams, ie- they contain a single ring – the beta lactam ring.

Cephalosporins inhibits the bacterial cell wall synthesis similar to penicillin. They classified into 4 generation based on their antibacterial spectrum.

Carbapenems includes imipenem, meropenem, ertapenem, doripenem and faropenem. They inhibit bacterial cell wall synthesis similar to penicillins. Carbapenems are highly resistant to most beta-lactamases.

β-lactum antibiotics → Bind PBP → inhibit cross-linking of peptidoglycan → Cell wall deficient bacteria → Undergo lysis → bactericidal effect

4. Describe inhibitor on logic combining trimethoprim and sulfamethoxazole used in antibiosis.

5

Sulfamethoxazole and trimethoprim interacts with other protein bound drugs.

Pharmacodynamics: Interferes with the synthesis of folic acid

Pharmacotherapeutics: Uncomplicated UTIs and systemic infections

Adverse effect: Nausea, vomiting, diarrhea, allergic reaction and crystalluria.

Health status: Assess for contraindications to drug therapy

Environment: Photosensitivity may occur.

Risk for injury related to drug induced hypersensitivity reaction, liver or blood pressure. By the end of therapy, the patient will be free from avoidable drug therapy related injuries.

By inhibiting different step in the folate synthesis pathways the combination of trimethoprim and sulfamethoxazole prevent the bacteria from producing adequate amount of folate. This leads to a storage of important metabolites and nucleotides such as proteins and pyrimidines, which are essential for DNA synthesis and cell division. As result, the bacteria are unable to replicate and grow and their population decreases. This makes them more susceptible to the immune system and other antibiotics and it eventually leads to their death.

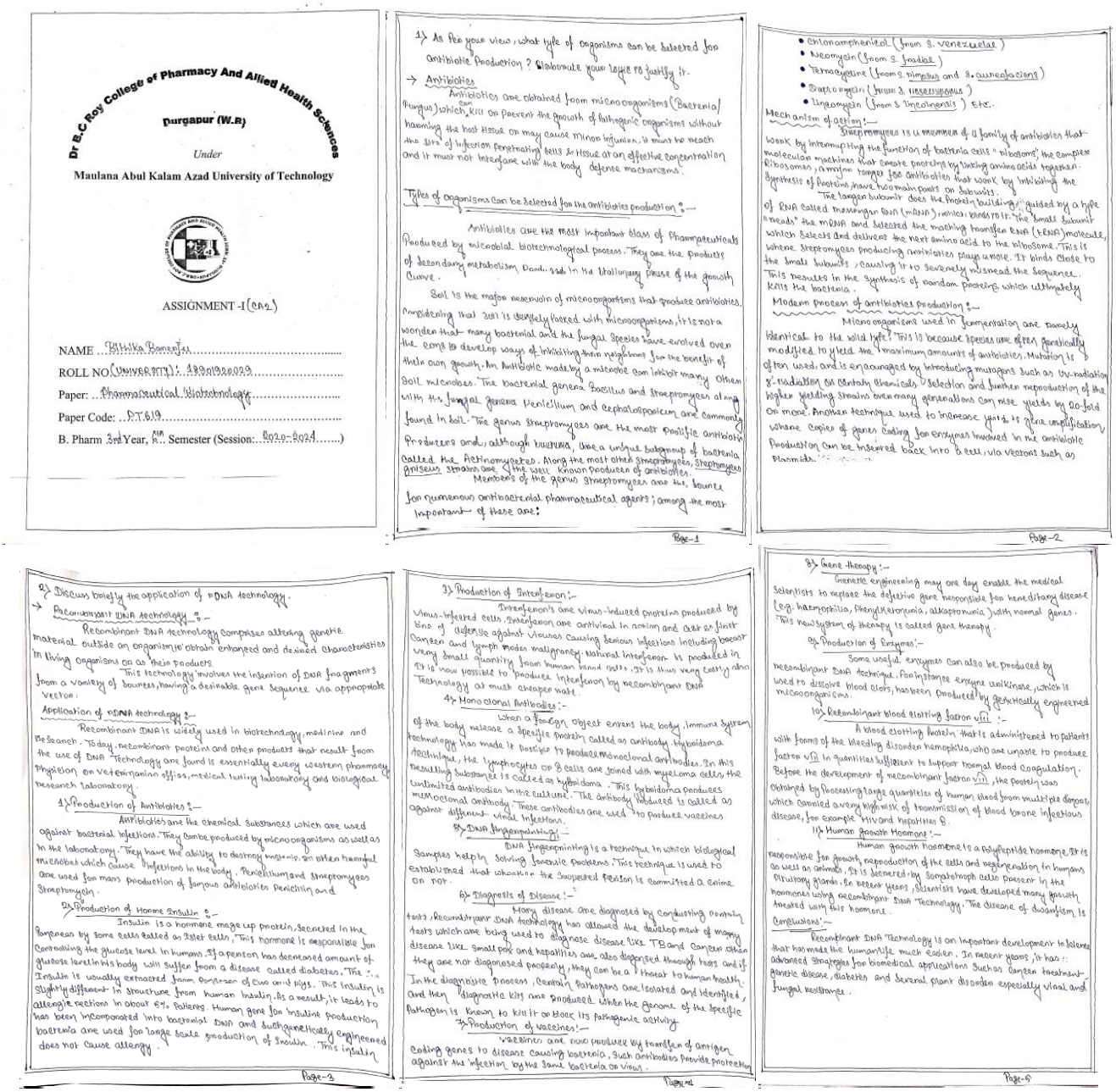
Moreover, the combination drug has a broad spectrum of activity as the two drugs have different mechanism of action. Thus, it has a wider range of uses against different bacteria.

5. Write report on Jarisch-Herxheimer reaction and Steven Johnson syndrome.

6

Jarish-Herxheimer Reaction: This reaction is believed to be due to the liberation of toxic products from the destruction of treponemas. It is a reaction to endotoxin-like products released by the death of harmful micro-organism within the body during antibiotic treatment. Efficacious antimicrobial therapy of bacterial toxins into the bloodstream resulting in systemic inflammatory response. Common Names: Die-off, Detox-Reaction. Typical symptoms-wide-spread pain, fatigue. Headache, fever, depression. Most reaction resolved rapidly in the study using homeopathic & herbal brain remedies.

Stevens-Johnson Syndrom: Stevens-Johnson Syndrom (SJS) is an immunecomplex-mediated hypersensitivity complex that typically involves the skin and the mucous membranes while minor presentations may occur, significant involvement of oral, nasal, eye, urethral, and lower respiratory tract mucous membranes may develop in the course of the illness. GI and respiratory involvement may progress to necrosis. Stevens-Johnson syndrom is a serious systemic disorder with potential for severe morbidity and even death. A more severe form of the condition is called toxic epidermal necrolysis (TEN). It involves more than 30% of the skin surface and extensive damage to the mucous membrane. Strong painkillers are used to ease any pain.



Dr B.C Roy College of Pharmacy And Allied Health Sciences
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Under
Maulana Abul Kalam Azad University of Technology

ASSIGNMENT -I (CA2)

NAME ..Rittika Banerji.....
ROLL NO(University): 18901920029.....
Paper: ..Pharmaceutical Biotechnology.....
Paper Code: ..PT.619.....
B. Pharm 3rd Year, 6th Semester (Session:..2020-2024.....)

1) As per your view, what type of organisms can be selected for Antibiotic Production? Elaborate your view to justify it.

→ Antibiotics

Antibiotics are obtained from microorganisms (Bacteria/Fungus) which kill or prevent the growth of pathogenic organisms without harming the host tissue or may cause minor injuries. It must be reach the site of infection penetrating cells & tissue at an effective concentration and it must not interfere with the body defence mechanisms.

Types of organisms can be selected for the antibiotics production :-

Antibiotics are the most important class of Pharmaceuticals Produced by microbial biotechnological process. They are the products of secondary metabolism, Produced in the stationary phase of the growth Curve.

Soil is the major reservoir of microorganisms that produce antibiotics. Considering that soil is densely packed with microorganisms, it is not a wonder that many bacterial and the fungal species have evolved over the eons to develop ways of inhibiting their neighbours for the benefit of their own growth. An Antibiotic made by a microbe can inhibit many. Other soil microbes. The bacterial genera Bacillus and Streptomyces along with the fungal genera Penicillium and Cephalosporium are commonly found in soil. The genus Streptomyces are the most prolific antibiotic Producers and, although bacteria, they a unique subgroup of bacteria called the Actinomycetes. Among the most often Streptomyces, Streptomyces griseus strains one of the well known producers of antibiotics.

Members of the genus Streptomyces are the source for numerous antibacterial pharmaceutical agents; among the most important of these are:

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- Chloramphenicol (from S. venezuelae)
- Neomycin (from S. fradiae)
- Tetracycline (from S. rimosus and S. aureofaciens)
- Streptomycin (from S. griseus)
- Erythromycin (from S. erythreus) etc.

Mechanism of action :-

Streptomycin is a member of a family of antibiotics that work by interrupting the function of bacteria cells "ribosomes", the complex molecular machines that create proteins by linking amino acids together. Ribosomes, a major target for antibiotics that work by inhibiting the synthesis of proteins have two main parts or subunits.

The smaller subunit does the protein building, guided by a type of RNA called messenger RNA (mRNA), which plays its role. The small subunit "reads" the mRNA and selected the matching transfer RNA (tRNA) molecule, which selects and delivers the next amino acid to the ribosome. This is where Streptomycin producing antibiotics plays a role. It binds close to the small subunit, causing it to severely misread the sequence. This results in the synthesis of random proteins which ultimately kills the bacteria.

Modern process of antibiotics production :-

Microorganisms used in fermentation are rarely identical to the wild type. This is because species are often genetically modified to yield the maximum amounts of antibiotics. Mutation is often used, and is encouraged by introducing mutagens such as UV-radiation, X-radiation or certain chemicals. Selection and further reproduction of the higher yielding strains over many generations can raise yields by 20-fold or more. A newer technique used to increase yields is gene amplification, where copies of genes coding for enzymes involved in the antibiotic production can be inserted back into a cell via vectors such as plasmids.

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2) Discuss briefly the application of rDNA technology.

→ Recombinant DNA technology :-

Recombinant DNA technology comprises altering genetic material outside an organism to obtain enhanced and desired characteristics in living organisms or in their products.

This technology involves the insertion of DNA fragments from a variety of sources, having a desirable gene sequence via appropriate vector.

Application of rDNA technology :-

Recombinant DNA is widely used in biotechnology, medicine and Research. Today recombinant proteins and other products that result from the use of DNA Technology are found in essentially every western pharmacy physician or veterinarian office, medical testing laboratory and biological research laboratory.

1) Production of Antibiotics :-

Antibiotics are the chemical substances which are used against bacterial infections. They can be produced by microorganisms as well as in the laboratory. They have the ability to destroy bacteria or other harmful microbes which cause infections in the body. Penicillium and Streptomyces are used for mass production of famous antibiotics Penicillin and Streptomycin.

2) Production of Human Insulin :-

Insulin is a hormone made up protein, Secreted in the Pancreas by some cells called as Islet cells. This hormone is responsible for Controlling the glucose level in humans. If a person has decreased amount of glucose level in his body will suffer from a disease called diabetes. The Insulin is usually extracted from Pancreas of cow and pigs. This insulin is slightly different in structure from human insulin. As a result, it leads to allergic reaction in about 5% patients. Human gene for insulin production has been incorporated into bacterial DNA and such genetically engineered bacteria are used for large scale production of Insulin. This insulin does not cause allergy.

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3) Production of Interferon :-

Interferon's are virus-induced proteins produced by virus-infected cells. Interferon are antiviral in nature and act as first line of defense against viruses causing serious infections including cancer. Very small quantity from human blood cells. It is thus very costly also. It is now possible to produce Interferon by recombinant DNA Technology at much cheaper rate.

4) Monoclonal Antibodies :-

When a foreign object enters the body, immune system of the body release a specific protein called as antibody (Hybridoma Technique). The lymphocytes or B cells are joined with myeloma cells, the resulting substance is called as hybridoma. This hybridoma produces unlimited antibodies in the culture. The antibody produced is called as monoclonal antibody. These antibodies are used to produce vaccines against different viral infections.

5) DNA fingerprinting :-

DNA fingerprinting is a technique in which biological samples help in solving forensic problems. This technique is used to established that whether the suspected person is committed a crime or not.

6) Diagnosis of Disease :-

Many disease are diagnosed by conducting certain tests. Recombinant DNA technology has allowed the development of many tests which are being used to diagnose disease like TB and cancer. Other disease like small pox and hepatitis are also diagnosed through tests and if they are not diagnosed properly, they can be a threat to human health. In the diagnostic process, certain pathogens are isolated and identified, and then diagnostic kits are produced. When the genome of the specific pathogen is known to kill it or block its pathogenic activity.

7) Production of vaccines :-

Vaccines are now produced by transfer of antigen coding genes to disease causing bacteria. Such antibodies provide protection against the infection by the same bacteria or virus.

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8) Gene therapy :-

Genetic engineering may one day enable the medical scientists to replace the defective gene responsible for hereditary disease (e.g. haemophilia, Phenylketonuria, alkaptonuria) with normal genes. This new system of therapy is called gene therapy.

9) Production of Enzymes :-

Some useful enzymes can also be produced by recombinant DNA technique. For instance enzyme urokinase, which is used to dissolve blood clots, has been produced by genetically engineered microorganisms.

10) Recombinant blood clotting factor VIII :-

A blood clotting protein that is administered to patients with forms of the bleeding disorder hemophilia, who are unable to produce factor VIII in quantities sufficient to support normal blood coagulation. Before the development of recombinant factor VIII, the protein was obtained by processing large quantities of human blood from multiple donors, which caused a very high risk of transmission of blood borne infectious disease, for example HIV and Hepatitis B.

11) Human growth Hormone :-

Human growth hormone is a polypeptide hormone. It is responsible for growth, reproduction of the cells and regeneration in humans as well as animals. It is secreted by somatotroph cells present in the Pituitary gland. In recent years, Scientists have developed many growth hormones using recombinant DNA Technology. The disease of dwarfism is treated with this hormone.

Conclusions :-

Recombinant DNA Technology is an important development in science that has made the human life much easier. In recent years, it has advanced strategies for biomedical applications such as cancer treatment, genetic disease, diabetes and several plant disorders especially viral and fungal resistance.

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Dr. B. C. Roy College of Pharmacy and Allied Health Sciences
Durgapur - 713206
B. Pharm. 4th yr 7th Semester' 2022-2023
GRADE SHEET CONTINUOUS EVALUATION 1 (CA1)

PAPER: INDUSTRIAL PHARMACY-II **CODE: 716A**

SL. NO	UNIVERSITY ROLL NO	NAME OF THE STUDENT	CONTENT (5)	SLIDE CREATION (5)	SLIDE TRANSITIONS (5)	MECHANICS (5)	TECHNOLOGY CONNECTION (5)	TOTAL (25)
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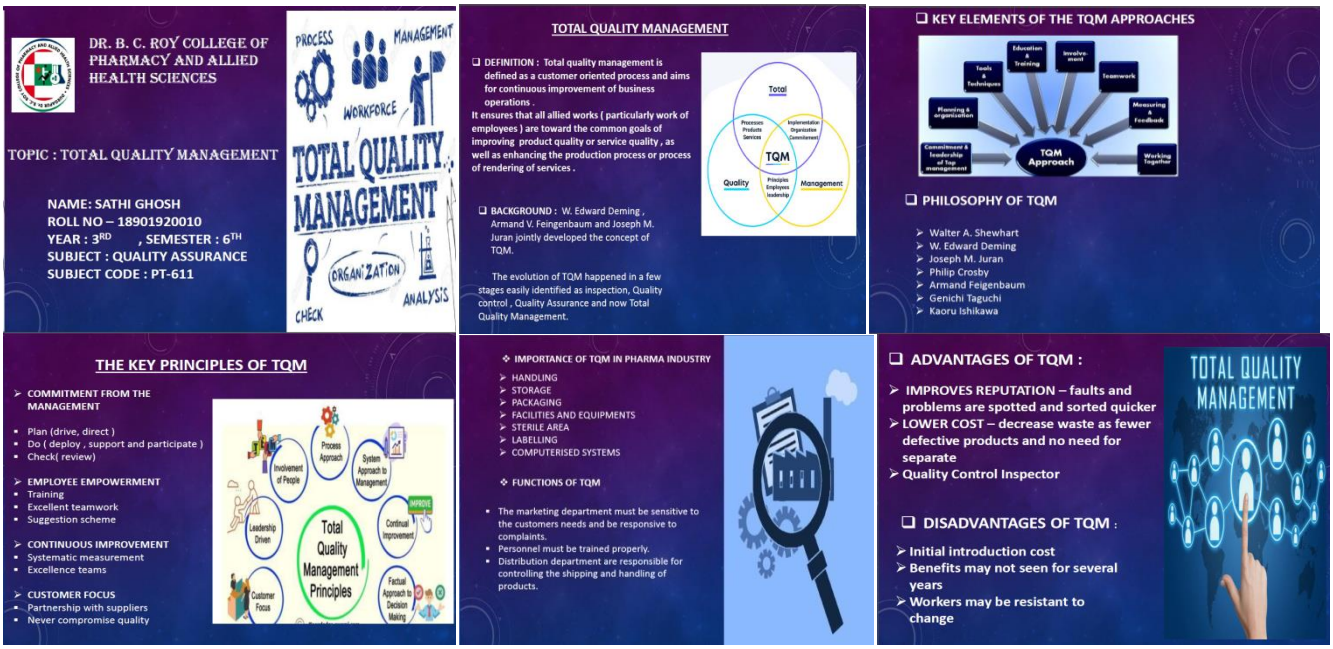
SAMPLE OF PRESENTATION



DR.B.C.ROY COLLEGE OF PHARMACY AND ALLIED HEALTH SCIENCES

NAME-RAM SWARUP CHATTOPADHYAY

PAPER NAME-MEDICINAL CHEMISTRY III

PAPER CODE- PT 613

UNIVERSITY ROLL NO- 18901920001
6TH SEMESTER

DRUG RECEPTOR INTERACTION

- WHAT IS DRUG RECERTOR INTERACTION?
- Drug is a chemical agent that selectively interacts with specific target molecules to alter there specific physiological function.
- Receptors (target molecules for drug)are macromolecules involved in chemical signaling which regulates cellular biochemical processes.
- The binding of drugs to receptor which form drug receptor complex and give responses is known as drug receptor interaction.

Factor affecting drug receptor binding :

- Size and the distance
- Types of bond between drug and receptor
- Receptor and drug structure
- Stereoisomerism

Drug receptor interaction

- Forces involved in drug receptor interaction:
- Ionic bond
- Hydrogen bonding
- Dipole-dipole interactions
- Van der Waal's force

Ionic bonding

- Ionic bonds formed between molecules with opposite charges are strong and can act across long distances. Drugs are often ionized and the active sites receptor s contain charged group.(7.97 ev per bond)

Hydrogen bonding

- Hydrogen bond are a type of dipole –dipole interaction formed between the proton of a group X-H ,where x is electronegative atom, and one or more other electronegative atom (Y)containing a pair of non bonded electrons. The most significant hydrogen bonds occur in molecules where x and y are N and O.(Binding energy -1 to 40 kcal/mol)
- H-bonding should have h-bond acceptor (the electron rich atom ,slightly negative)and h-bond donor (electron deficient hydrogen ,slightly positive).Example :if X removes electron density from the hydrogen so it has partial positive charge ,which is strongly attracted to the non bonded electrons of Y, so X is HBD and y is HBA.