PSG COLLEGE OF PHARMACY, COIMBATORE

2.2.1 The institution assesses the learning levels of the students and organizes special programmes for advanced learners and slow learners

Learning levels of the students are identified and activities are conducted for each subject separately by respective teachers for all programmes. Following are the documentary evidence to describe the process.

S.No	Documentary evidence	Page No
1	**Standard Operating Procedure for Slow Learners & Advanced Learners** a)PSGCP/QSP/TLP/01 Revision 00 b) PSGCP/QSP/TLP/01 Revision 01	1 – 10
2	**Template used to identify progression of learners**	11
	3. Program for Slow Learners	
3.1	**Special test oral/written for slow learners**	
3.2	**Peer tutoring**	
3.3	**Study aids**	12 – 41
3.4	**Mentor Counselling**	
3.5	**Motivation to participate in student council activities**	
3.6	**Special teaching/Revision classes**	
	4. Program for Advanced Learners	
4.1	**Advanced assignment or tasks**	
4.2	**GPAT coaching Class**	
4.3	**Special recognition**	42 - 51
4.4	**Peer tutors to slow learners**	
4.5	**Motivation to participate in research internship/Summer Research Fellowship programs/ research projects**	
	5. Programme for Average Learners and Non Performers	
5.1	**CSR activities**	
5.2	**Capacity building programmes**	
5.3	**PSG Student Wellness Center**	52
5.4	**Identifying Innate Talents**	
	6. Outcome Report	
6.1	**Remedial Measures & Outcome**	53 - 57
6.2	**Learning Level Progression of B.Pharm 2015 Batch**	58
6.3	**Achievements of B.Pharm 2015 Batch**	59
6.4	**List of University Gold Medals winners from 2015-2019**	60
6.5	**Awards for best students by other institutions**	61
6.6	**Awards in Conference/Seminar**	61-64
6.7	**Research Fellowships**	65-66
6.8	**Awards For Extracurricular activities**	66

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Slow Learners and Advanced Learners	SOP No:PSGCP/QSP/TLP/01
Effective Date:11.4.2016	Page No 1 of 5
Valid up to: 5 years	Revision No:00

1.0 Objective:

To understandthe learning ability,cognition levels of students from diverse background and to improve their academic performance to have better future career path and progression.

2.0 Responsibilities:

2.1 Individual subject teacher to identify the learning levels and implement the procedure for improvement according to the level of assessment..

2.2 Academic committee to ensure the process and exam committee to audit the document related to it.

3.0 Procedure for identification of slow learners and advanced learners

3.1 Slow Learners

Slow learners is a term reserved for those students who are unable to cope with the learning process as expected, resulting in poor grades or failure in exams.The students who find it difficult to understand, memorize and reproduce the course content will be categorized as slow learners. Their motivation levels may also be poor and they find difficult to adopt with the teaching learning process. The poor performance does not indicate the capability of students, but may be due to inappropriate teaching methods, inadequate motivations and the inability to converse in an unfamiliar language. The student observed with all or any one of the above features with low grade will be identified and practice will be given to overcome his/her difficulties.

3.2 Advanced Learners

Advanced learner refers to the students who can engage learning activities faster than the other students in the class and achieve high scores.They are more potential with their comprehension,memory, critical thinking creativity and overall cognition.These students can take up higher level learning and academic responsibilities. They can bring new concepts, strategies, and also can take up the leadership responsibilities.

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[C.R. Nithya]	(Prudence A Rodrigis)	Dr. M..Ramanathan
Date	Date	Date
4. 4. 2016	5. 4. 2016	5/4/16

PSG COLLEGE OF PHARMACY,COIMBATORE

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3.3 Average Learners

Average Learners refer to the students who secures required marks and perform to the adopted methodologies.They work steadily and they doesn't require too much intervention.

3.4 Non Performers

Non performers are the students who has the ability to perform as average/ advanced learners but lack in performance due to emotional problems and psychological issues.

4.0 Steps to identify slow learners and advanced learners

4.1 Learning levels of students shall be identified separately by respective subject teacher for all the years.

4.2 Every subject teacher shall conduct entry level assessment through oral/objective type test / online objective type test to check the fundamentals of the subject within the first week of commence of the academic year.

4.3 For the first year/I sem students, entry level assessment shall be conducted during their orientation programme.

4.4 Based on entry level assessment,subject teachers shall adopt and design a teaching methodology to suit the needs of slow learners and advanced learners in the class.

4.5 Process of identifying slow learners,average learners, advanced learners and non performers shall be carried out after the internal assessment exams.

4.6 Class average in each subject shall be considered to identify slow,average,advanced learners and non performers.

4.7 Students who secures mark much below the class averages (less than 10% of the class average) are identified as slow learners. Students performed better in the IA by securing higher marks (more thatn 10% of the class average) are identified as advanced learners.

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4.8 Student securing required marks and perform to the adopted methodologies are identified as average learners. Students who has the ability to perform as average/ advanced learners but lack in performance due to other issues are identified as non performers.

4.9 Other than marks, teachers can also consider their observation in classroom, attendance and interaction with teachers to identify the learning levels.

5.0 Measures taken for slow learners

5.1 Individual academic counseling is done by concerned subject teacher to understand the needs of slow learners.

5.2 Remedial/extra classes will be conducted with appropriate focus on the subject/topics.

5.3 Special test (Oral/written) will be conducted to the students on the important topics/university questions.

5.4 Study aids on important topics will be provided to them to improve their performance.

5.5 Students study groups are formed for peer-to-peer learning.

5.6 Personal counseling is done through mentoring scheme which takes care of the students.

5.7 Motivate them to participate in various student council activities to bring in their hidden abilities.

6.0 Measures taken for advanced learners:

6.1 Identify their area of interest and groom them in their interest to achieve their goal.

6.2 Advanced assignments or tasks will be assigned to advanced learners.

6.3 Coaching for competitive exams.

6.4 Special awards and medals to recognize their exemplary performance.

6.5 Distinguished alumni will be invited as guest of honor to inspire the advanced learners.

6.6 They are made as the peer tutors to the slow learners.

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PSG COLLEGE OF PHARMACY, COIMBATORE

STANDARD OPERATING PROCEDURE	
Slow Learners and Advanced Learners	**SOP No:PSGCP/QSP/TLP/01**
Effective Date:11.4.2016	**Page No 4 of 5**
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7.1 Average learners and non performers are encouraged to participate in various student club activities.

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7.4 Non performers will be directed to PSG Student wellness centre for personal counseling (if required)

7.5 Inspire them to identify their innate talents and explore the available opportunities.

8.0 Assessment of outcome

8.1 The performance of all level of learners has to be monitored in every IA performance.

8.2 The outcome of all level of learners will be measured through their academic progression in internal assessment and university exams.

8.3 The performance of the slow learners will be measured through results outcome and active participation in different student council activities.

8.4 The performance of the advanced learners will also be measured based on their additional interest, participation in internship / research project / skill development program.

8.5 Clearance of competitive / higher studies related exams will also be considered for the performance of advanced learners.

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Nith⁻ C R.Nithya]	Prudencealh (Prudence A Rodrigin)	
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PSG COLLEGE OF PHARMACY,COIMBATORE

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PSG COLLEGE OF PHARMACY,COIMBATORE

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8.7 Feedback on the measures taken will be obtained from the student at the end of the academic year.

8.8 Remedial measures adopted by the faculty can be discussed at department level during result analysis. The same can be discussed at the faculty meeting for the benefit of the Institution.

8.9 The best practices identified can be documented and shared with other teachers to adopt for their course.

9.0 Amendments Made

Version	Effective Date	Details of significant Changes
Version 1	11.4.2016	New document
Version 2	10.9.2018	Inclusion of 8.8 & 8.9. The amendment was made after discussion in the academic committee meeting.

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PSG COLLEGE OF PHARMACY, COIMBATORE
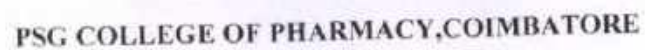
TEMPLATE USED TO IDENTIFY PROGRESSION OF LEARNERS

NAME OF THE
FACULTY
COURSE
PROGRAM & YEAR

LEARNERS CATEGORY	SLOW LEARNER- SL	ADVANCED LEARNER- AL	
	AVERAGE LEARNER- AVL	NON PERFORMER- NP	

S.NO	NAME OF THE STUDENT	REGISTER NUMBER	INITIAL LEARNING LEVEL (Based on IA1)	PROGRESSED TO (Based on University marks)	METHOD ADOPTED	REMARKS

S.No	Learning Category	Number of students	Number of students progressed	Percentage of progression
1	Slow Learner			
2	Advanced Learner			
3	Average Learner			
4	Non Performer			

Signature of teacher   Signature of the HOD   Signature of Principal

3. Programs for slow Learners

3.1 Special test oral/written for slow learners

Special test will be conducted during practical hours/tutorial hours in order to improve their performance in university examinations. Additional viva voce other than regular viva on individual chapter will be conducted for slow learners during practical hours.

3.2 Peer tutoring

Group of students (slow learners) will be assigned under advanced learners. They will meet in a week and discuss on the selected topic. Peer tutoring improves self confidence, academic achievement, improves their attitude towards the subject matter and encourages greater persistence in completing tasks.

3.3 Study aids

Simplified notes will be provided to the students for easy learning and memory. Students will be provided with important test questions or a list of topics from which questions may be expected for university exam. Teacher will discuss the university question papers with slow learners and the way of presenting the answers in the exam to score good marks.

3.4 Mentor Counseling

The mentors regularly monitor the academic performance of their mentees. They identify the difficulties faced by these students and provided counseling to improvise their performance.

3.5 Motivation to participate in student council activities

Slow learners are motivated to participate in various student club activities to identify their innate talents. This will help students to improve their confidence which will be indirectly reflected in their learning ability. The students are also awarded for their participation in cultural events, sports, NSS activities and leadership qualities.

3.6 Special teaching/Revision classes

Slow learners are provided with extra support by the teachers during tutorial hours. Critical topics are re explained for better understanding. Revision classes are planned after completion of syllabus to increase their confidence in university examination.

16/3/20

Spoilage

G.N. Rishi

7/10

* Pharmaceutical Product is said to be Microbial spoilage if it contains

→ High level of acute Micro Organism
  or
  low level of toxic Micro Organism

→ If still the product contains Toxic chemical & Physical Metabolite even after Removal of Micro Organism.

* Many type of Micro organism contaminate and spoil the Product

Types:-

1) Polymer and humectant :-

* Thickening and suspending agents used in Pharmacy are subjected to

extracellular enzymes yielding nutritive fragments and monomers.

eg: starch, pectin, dextran.

2) Fats and oils :-

* are usually (attacked) extensively when dispersed in aqeous formulation such as oil in Water emulsion.

3) Preservative & disinfectant.

* Metabolised Readily by many bacteria and fungi and serve as growth substrates at concentration below their level.

4) Therapeutic agent :-

* Many drug are degraded by Microorganism
* such as analgesics, alkaloids

Factors affecting Spoilage:-

* Size of inoculum:-

* how level of contaminants may be present in product but is cause low Rates of deterioration.

* Nutritional factor:-

* Nutrition in the product are utilized and Metabolised by Microorganism.

* Moisture content:-

* Increase in water activity increase the spoilage.

* Some Agent like PEG are added to reduce spoilage.

Temperature:-

* Spoilage occur over Range of about -10 to 60°C.

* So some product gives the storage condition. in freeer.

Redox potential:-

* Oxidation - Reduction balance influence the Microbacterial growth

* This gives terminal electron which are synthesis for it Metabolite pathway.

Reg No :
(To be filled in by the candidate)

PSG COLLEGE OF PHARMACY, COIMBATORE 641004
IMPROVEMENT EXAMINATION [JULY/2017]
III B.PHARMACY
PHARMACEUTICAL BIOTECHNOLOGY

Date/Session   : 13.07.2017/ FN
Time   : 1 ½ hours   Maximum Marks: 50

ANSWER ALL QUESTIONS

PART - A   (1x20=20)
ESSAY

1. Define sterilization. Write briefly about physical, chemical and mechanical methods of
    sterilization.

PART - B   (4x5=20)
SHORT NOTES

1. Hybridoma technology.

2. ELIZA.

3. Design and operation of fermenter.

4. Define biosensor. Briefly explain the types of biosensor.

PART - C   (5x2=10)
SHORT ANSWERS
1. Give two examples for Gram negative bacteria

2. Give two examples for live vaccine

3. Selective culture media

4. Define immobilization

5. Vector

....END...

[Name of faculty: KARTHIKEYAN S.]
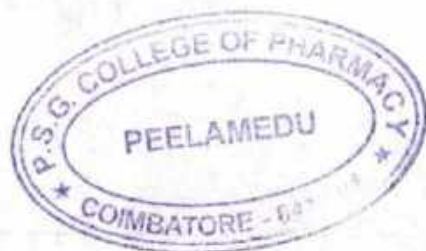
Page No: 1

Reg. No: 561402011 (S. Emmanuel Satrom)

Sub: Pharmaceutical Bio-Technology.

Date: 18. 7. 2017.

PART - C

9. SHORT ANSWERS:

25/50

1. Gram Negative Bacteria:

Some of the gram-negative bacteria are:
* E. coli
* Vibrio cholerae.

2. LIVE VACCINES:

Some of the Live vaccines are:
* BCG vaccine
* Typhoid vaccine.

2. Selective media:

1. A media which is used to grow specific organisms selectively in it is known as selective media.

2. It allows only gram negative & E-coli

3. Eg: Mannitol salt agar
EMB Agar.

4. Immobilization:

   Immobilization is the process of confining a whole cell or an enzyme into an inert carrier molecule.

5. Vector:

   A vector is an inert carrier molecule that is used for transportation from the host to the guest molecules.

   Eg: E-coli, PBR 232.

PART - B

1. HYBRIDOMA TECHNOLOGY:

   Hybridoma technology is a process of production of large number of identical antibodies (monoclonal)

   It is produced from β-lymphocytes.

   β - lymphocytes
        ↓
   plasma B - cells

   Monoclonal

   polyclonal Antibodies
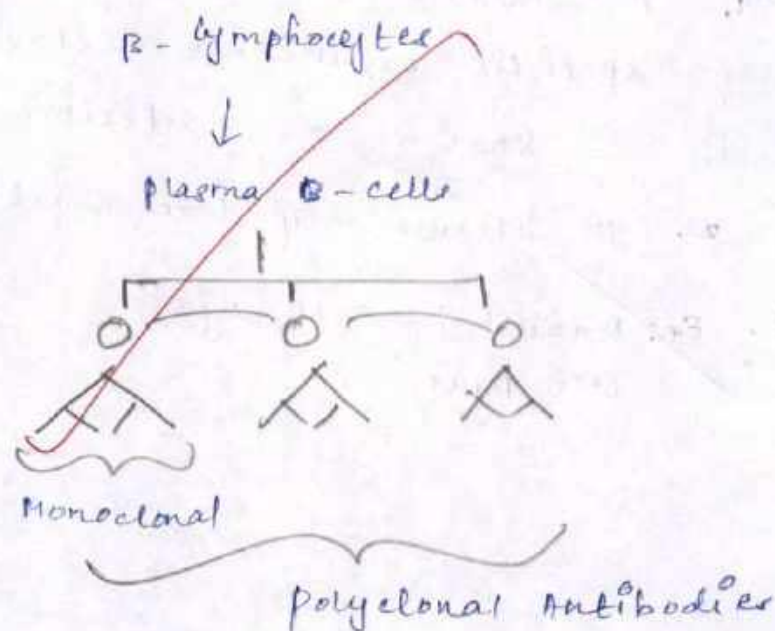
Hybridoma is a hybrid variety
from (myeloma cells)

It is achieved by:

1. Injecting antigen into mice.
2. Mice secretes antibody.
3. Spleen : It produces more β - cells.
4. Then isolate those β - cells.
5. Take the Myloma cell.

$$\bigcirc \longrightarrow HGPRT (-)$$

(HGPRT -) Enzyme
It is used for synthesis of bases.
(Adenine)
guanine
Thiamine
cytosine

It is synthesized by two ways.

1. De - Nova pathway.
2. Salvage pathway.

they both produce nucleotide that is
converted to DNA

DE - NOVA   Dihydro phosfate
                  reductase
                                  ⟩ Nucleotide ⟶ DNA.
SALVAGE

HGPRT Stands for Hyponanthine guanine
Phospho ribosyl transferase.

Cancer cell :

In cancer cell it enhibit the HGPRT
enzyme. so it takes only Dihydro folate
reductase because HGPRT is carcinogenic
So only in B-lymphocytes both enzymes are
allowed to produce.

PRODUCTION :

i)
$$\text{Mice} \xrightarrow{\text{ANTIGEN}} \text{spleen} \xrightarrow[\text{L}]{\text{CENTRIFUGE}} \text{splenocytes}$$

↓

B-lymphocytes
(plasma B-cell)

Ⓑ plasma
B-cell
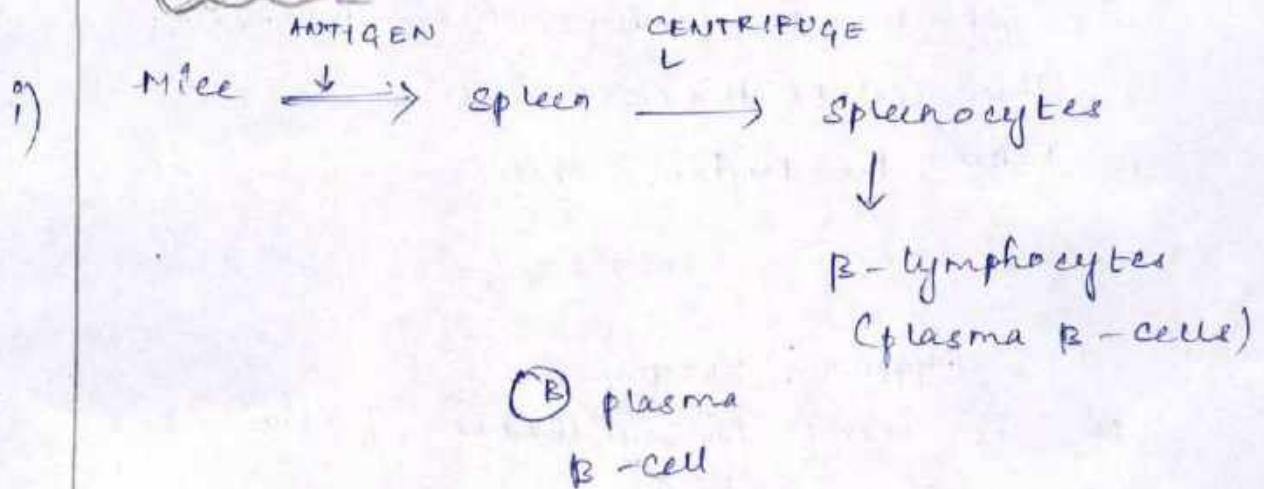
ii) selection of myeloma cells

myeloma cells

↓ chemical added

Ⓜ ⟶ myloma cell without HGPRT

Fusing ① & ②

Ⓑ   Ⓜ

Y PEG Enzyme

(B MH) ⟶ selective media (HAT)

selection of Hybridoma

(Ⓑ Ⓗ Ⓧ)

↓ after 50 divisions

1. Grown in 96 well plate.

2. It is added with antigen + glowing material (RIA)

3. put in a well

4. It shows colour

5. Growth + antibodies are produced ⤴

6. Monoclonal Antibodies.

2. ## ELISA

Enzyme linked Sorbet Assay

It's used to diagnose diseases

To purify.

Methods:

1. Direct
2. Indirect ⟶ ELISA
3. Competitive

Indirect:

It is used to detect antibodies by assuming antigen presence

single well

color Appearances
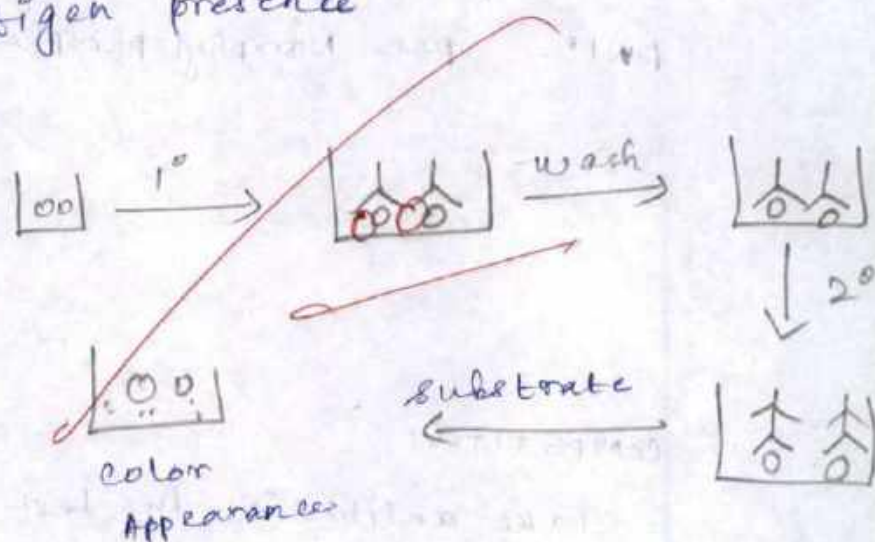
substrate

coat Antigen in the well
Add patient's serum.

If antigen is present, it binds with antibody.

Add secondary antibody (It binds with primary)

Enzyme (Horse Raddish peroxidase) is linked with $2°$ antibody)

It is washed

substrate is added with a dye

It produces color in infected samples containing enzymes.

Colour Appearances show presences of Infection.

DIRECT :

HB_2Ag : Surface Antigen:
coat the well with antibody : sine 83 M

If sample possess, it binds with antibody

wash the sample

Add $2°$ antibody

wash and add substrate.

If color produces test is positive.

If enzyme is alkaline, then substrate is

$pNPP$ — para Nitrophyl phosphate

$2°$ antibody

shows color.

↓

+ve
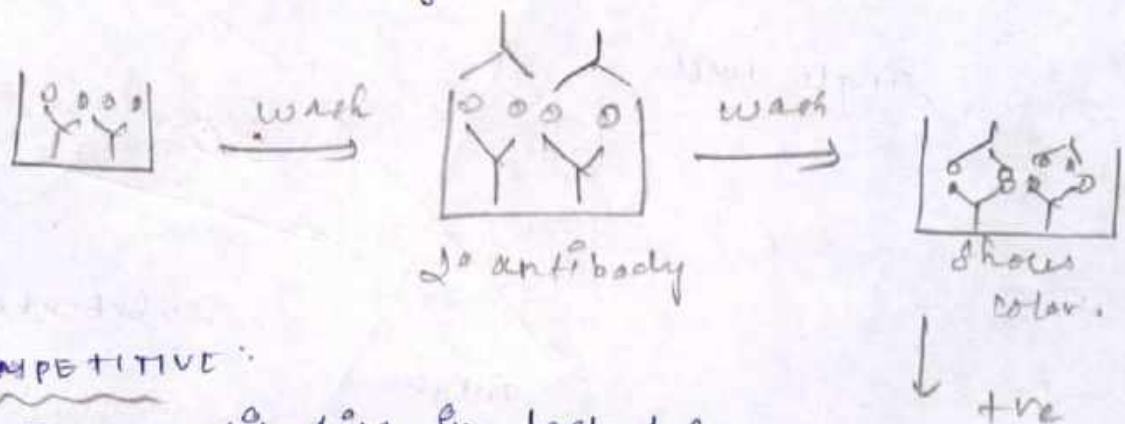
COMPETITIVE :

Take antibodies in test tube

wash the well with antigen

coat the well with antigen.

pour sample in antibodies.

          is added in well

It is washed & 1° antibody
is washed & 2° antibody is added
washed & substrate is added

If colour comes, then patient suffers
from infection.

Antibody
+ sample

well
Antigen

wash

wash

2° Antibody

No colour substrate

wash
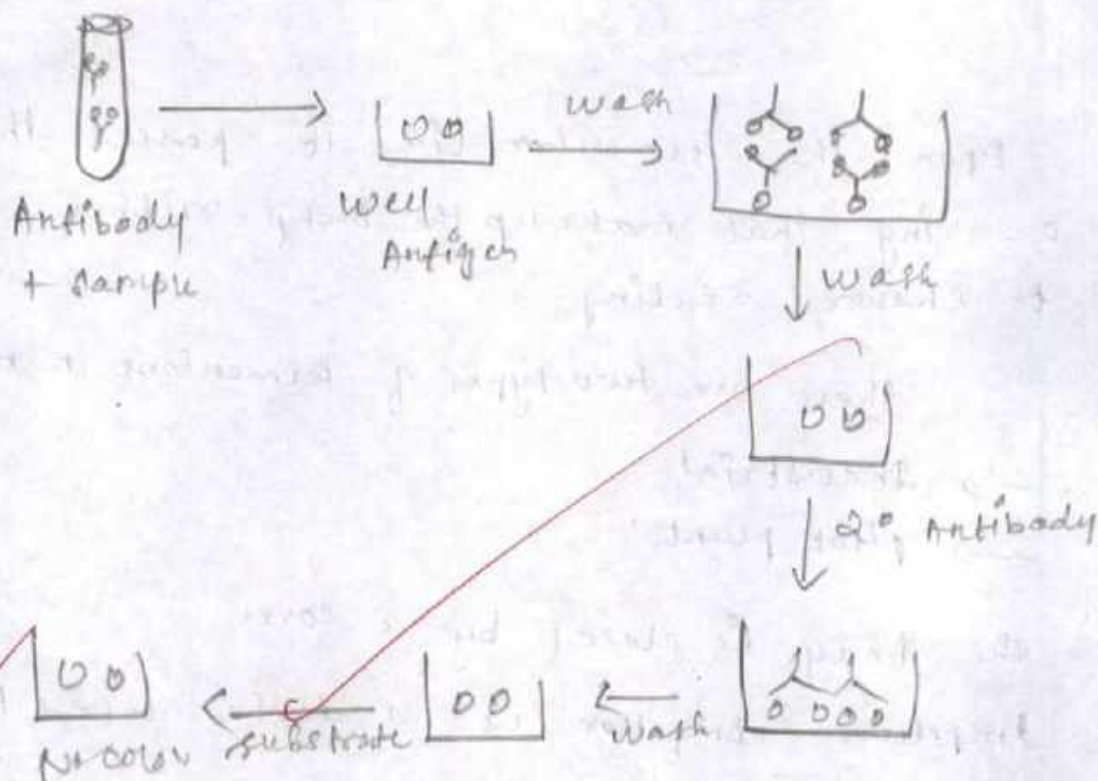
8. **DESIGNN & OPERATION FERMENTOR**

Fermentation is a biological process
in which the substrate is converted to a
desired product by a micro-organism.

A vessel which is used to
carry out fermentation is known as
fermentor.

Construction :

It's made q borosilicated glass /
stainless steel
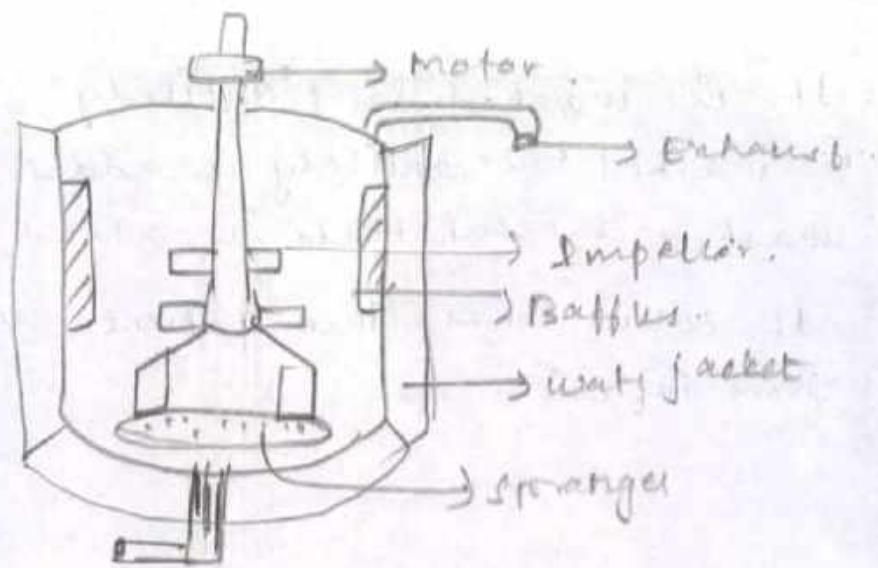
Upon the fermentor lid it posses the
o - ring that make up the butyl rubber
to ensure sealing

There are two types of fermentors namely

→ Industrial
→ pilot plant

The body is closed by a cover

i) Impellors : Impellor is a device used to
mix the liquid

It consists of a flat - disc with number of
blades at right angles

ii) Sprager :
A sprayer is a device used to aerate
the fermentation liquid

iii) Water - jacket :- A water - jacket is used
to cover the fermentor to cool the apparatus
when hot liquids exist.

iv) Exhaust : It is kept in order to drive
out the steam through the vent.

4. Bio- Sensors :

Bio- sensor is an analytical device
It converts the biological signals to
electrical signals

It is displayed

Biosensor is of the following types

* Electro - chemical   Bio - sensors
* Ampero metric   Bio - sensors
* Conducto metric   Bio - sensors
* Thermomo metric   Bio - Sensors
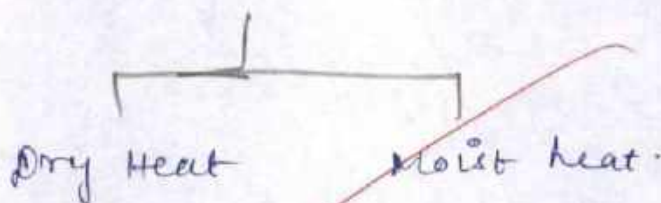* Optical   Bio - sensors.

PART- A

1. STERILIZATION :

It is the process of complete removal /
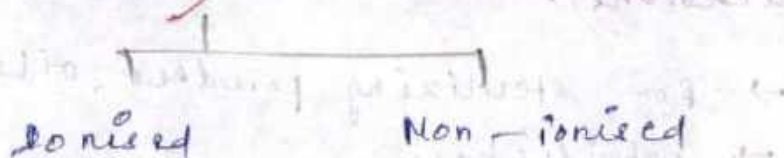killing of micro - organisms including bacterial
andospores.

TYPES :

Physical :
   1. Heat sterilization

   Dry Heat   Moist heat.

   2. Radiation.

   Ionised   Non - ionised

Chemical:
1. Liquid
2. gas form.

Mechanical:

Filtering air. (HEPA filter)
Filtering liquid mechanical filter)

Physical:

Dry Heat : Hot air oven

Instrumentation:

→ Double walled vaccum insulant.
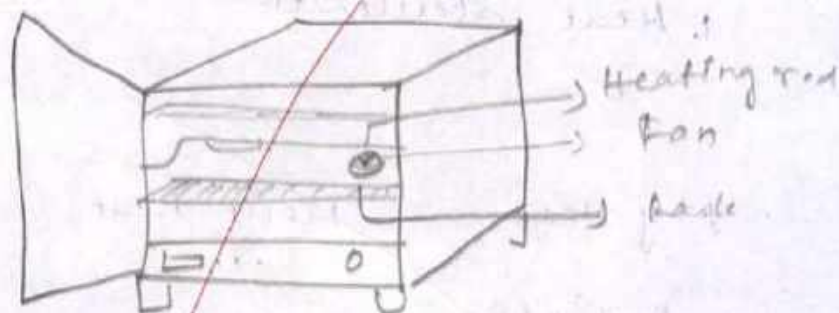→ Heating rod - It's used to heat apparatus.
→ It's a thermostat.

Mechanism of killing:

* oxidation of cell constituents.
* coagulation of protien

parameters:

Temperature → 160 — 180°c
Duration → 1— 3 hours

→ Heating rod
→ fan
→ rack

Applications:

→ for sterilizing powders oils.
→ petridishes.

MOIST - HEAT

Method of Fractional
sterilization. for 100°c

3 - Days.

Pasteurization:

Reduces level of micro-
organism.

-Condition:

Temp - 62.8°c.

Duration - 30 mins

radiation?
filtration?

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Exam Committee Analysis (06-11-19)

'Team Leader Analysis'

Protocol for improving the Student performance through class room activity for better exam outcome.

Team Leader: AAKASH. N.S

Students allotted: 5 Nos.

Student Name	Assign ment (27.11.19)	Sh Ans. (6.12.19)	Test (19.12.19)	OBT (8.1.20)	Viva (22.1.20)	Test (28.1.20)	Group discussion (3.2.20)	Sign
Akshey	✓	✓	✓	✓	✓	✓	✓	
Amrin	✓	✓	✓	✓	✓	✓	✓	
Arthi	✓	✓	✓	✓	✓	✓	✓	
Aswath	✓	✓	✓	✓	✓	✓	✓	
Benet Tom	✓	✓	✓	✓	✓	✓	✓	

Team Leader: BARATHI.K Bharathi

Students allotted: 5 Nos.

Student Name	Assign ment (27.11.19)	Sh Ans. (6.12.19)	Test (19.12.19)	OBT (8.1.20)	Viva (22.1.20)	Test (28.1.20)	Group discussion (3.2.20)	Sign
Chandira Bharathi	✓	✓	✓	✓	✓	✓	✓	
Chandra Prakash	✓	✓	✓	✓	✓	✓	✓	
Divya darshini	✓	✓	✓		✓	✓	✓	
Hariharan	✓	✓	✓	✓	✓	✓	✓	
Jaganathan	✓	✓	✓	✓	✓	✓	✓	

Do. Sivaram Hariharan

Team Leader: Rincy Roy
Students allotted: 5 Nos.

Student Name	Assign ment (27.11.19)	Sh Ans. (6.12.19)	Test (19.12.19)	OBT (8.1.20)	Viva (22.1.20)	Test (28.1.20)	Group discussion (3.2.20)	Sign
Mohd. Mustaq	✓	✓	✓	✓	✓	✓	✓	A.shh
Mohd. Safeek	✓	✓	✓	✓	✓	✓	✓	Safty.
Mouleswar an	✓	✓	✓	✓	✓	✓	✓	Je·Je
Kalaiarasan	✓	✓	✓	✓	✓	✓	✓	A Calay
Prabha karan	✓	✓	✓	✓	✓	✓	✓	G.Prab

Team Leader: Venkatachalam. S
Students allotted: 5 Nos.

Student Name	Assign ment (27.11.19)	Sh Ans. (6.12.19)	Test (19.12.19)	OBT (8.1.20)	Viva (22.1.20)	Test (28.1.20)	Group discussion (3.2.20)	Sign
Gomathi	✓	✓	✓	✓	✓	✓	✓	
Subalakshmi	✓	✓	✓	✓	✓	✓	✓	
Riyazdeen	✓	✓	✓	✓	✓	✓	✓	
Sivakumar	✓	✓	✓	✓	✓	✓	✓	
Sneha varshni	✓	✓	✓	✓	✓	✓	✓	

Team Leader: Dharshini. M
Students allotted: 5 Nos.

Student Name	Assign ment (27.11.19)	Sh Ans. (6.12.19)	Test (19.12.19)	OBT (8.1.20)	Viva (22.1.20)	Test (28.1.20)	Group discussio n (3.2.20)	Sig
Subhashini	✓	✓	✓	✓	✓	✓	✓	
Surjith	✓	✓	✓	✓	✓	✓	✓	
Vignesh	✓	✓	✓	✓	✓	✓	✓	
Vijay	✓	✓	✓	✓	✓	✓	✓	
Swathypriya	✓	✓	✓	✓	✓	✓	✓	

Sh Ans: Short Answers, OBT: Open Book Test

Dr. Sivaram Hariharan.

	Subject	Slow Learners	Leader	Slow Learners	Leader	Assignment/ actions taken
		II Bpharm III Semester Slow learner Student List (2017 batch)				
	POC-II	Ilayabharathi C, Ragu	Hareni			
	PE	ABEL MANOJ JACOB, GIRIDHARAN, Ilayabharathi C, Kamaraj A	Hareni	Saravanan.M.S, Selvakumar R, Siranjeevi C, Sathish Kumar,Vijayalakshmi.V, Muthukumar, Jancy Rani, Marudhuvanan, Naveena.N, Yoga Ayyappan	Vimalraj, Vihashini	1. Groups were formed and a fast learner was assigned as a leader to discuss the difficult topics with the help of a teacher. 2. Giving sepcial attention during practical hours and explaining important topics
		Mohammed Arshath Parvez, Nandhakumar N, Prakash M,	Niloufer			
	PM	GIRIDHARAN .A,Ilayabharathi C, Kamaraj A, Manishankar,	Hareni			
	PHP-I	ABEL MANOJ JACOB, Akshaya.S, Deepakraja.A, GIRIDHARAN, Ilayabharathi C, Kamaraj A	Gowri.G.K			
		Nandhakumar.N, Prakash.M, Premkumar.M	Niloufer			

POC-II Thiraganayan

PE - Nih.

PM -

PHP-I - S.vijilyn
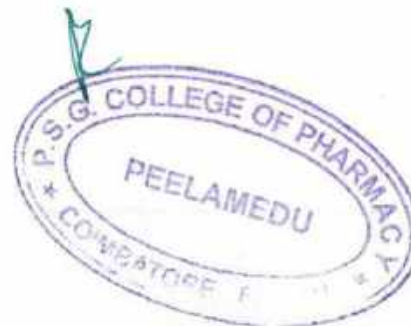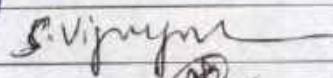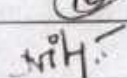
PSG COLLEGE OF PHARMACY
B.PHARM II YEAR (III SEMESTER) 2019-2020
PEER TUTORING FOR SLOW LEARNER (Based on performance till second sessional)

S. NO	Pharmaceutical Microbiology	Leader	Pharmaceutical Engineering	Leader	Physical Pharmaceutics- I	Leader
1	Sabari A.E	Moniga R.	Anbarasu V.	S. Shanju Vigasini	Anbarasu V.	K. Priyavarshini
2	Muneer Ahmed	Moniga R.	Muneer Ahmed	S. Shanju Vigasini	Kabilraj C.	K. Priyavarshini
3	Mutharasan T.	Moniga R.	Sabari A.E	S. Shanju Vigasini	Muneer Ahmed	K. Priyavarshini
4	Poovarasan K.	Moniga R.	Yogesh N.	S. Shanju Vigasini	Nandeesh V	K. Priyavarshini
5	Ravi A.	Moniga R.	Ravi A.	S. Shanju Vigasini	Poovarasan K.	K. Priyavarshini
6	Kabilraj C.	Vignesh V.	Mutharasan T.	Manoj prabhakar S.	Ravi A.	Komaleeshwari R.
7	Vaithyalingam M.	Vignesh V.	Vaithyalingam M.	Manoj prabhakar S.	Sabari A.E	Komaleeshwari R.
8	Vishnu Ajith P.	Vignesh V.	Twinkle Maria	Manoj prabhakar S.	Vaithyalingam M.	Komaleeshwari R.
9	Yogesh N.	Vignesh V.	Kabilraj C.	Manoj prabhakar S.	Vishnu Ajith P.	Komaleeshwari R.
10					Yogesh N.	Komaleeshwari R.
11					Mutharasan T.	Komaleeshwari R.

S.NO	SUBJECTS	SIGNATURE
1	POC-II	
2	PHP-I	S.Vijuyn
3	PM	
4	PE	

Prepared by:
Mr.S.Karthikeyan
Class co-ordinator

Dr.M.Ramanathan
PRICIPAL

PSG COLLEGE OF PHARMACY
B.PHARM II YEAR (III SEMESTER) 2019-2020
SLOW LEARNER IDENTIFICATION (Based on performance till second sessional)

S.NO	Pharmaceutical Microbiology	Pharmaceutical Engineering	Physical Pharmaceutics- I	Pharmaceutical Organic Chemistry-II
1	Sabari A.E	Anbarasu V.	Anbarasu V.	
2	Muneer Ahmed	Muneer Ahmed	Kabilraj C.	
3	Mutharasan	Sabari A.E	Muneer Ahmed	
4	Poovarasan K.	Yogesh N.	Nandeesh V	
5	Ravi A.	Ravi A.	Poovarasan K.	
6	Kabilraj C.	Mutharasan T.	Ravi A.	Nil
7	Vaithyalingam M.	Vaithyalingam M.	Sabari A.E	
8	Vishnu Ajith P.	Twinkle Maria	Vaithyalingam M.	
9	Yogesh N.	Kabilraj C.	Vishnu Ajith P.	
10			Yogesh N.	
11			Mutharasan T.	

S.NO	SUBJECTS	SIGNATURE
1	POC-II	
2	PHP-I	C.Vijnymla
3	PM	
4	PE	

Prepared by:
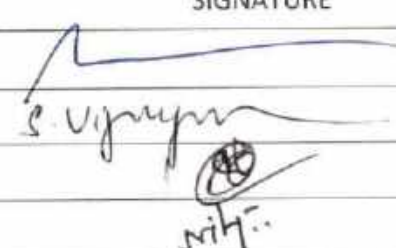Mr.S.Karthikeyan
Class co-ordinator

Dr.M.Ramanathan
PRICIPAL

08.01.2020

PSG COLLEGE OF PHARMACY
B.PHARM II YEAR (III SEMESTER) 2019-2020
SLOW LEARNER IDENTIFICATION (Based on performance till First sessional)

S.NO	Pharmaceutical Microbiology	Pharmaceutical Engineering	Physical Pharmaceutics- I	Pharmaceutical Organic Chemistry-II
1	Anbarasu V.	Anbarasu V.	Anbarasu V.	
2	Muneer Ahmed	Muneer Ahmed	Muneer Ahmed	
3	Sabari A.E	Sabari A.E	Sabari A.E	
4	Vijayakiruthika M.	Vijayakiruthika M.	Vijayakiruthika M.	
5	Kamaladhini S.	Kamaladhini S.	Kamaladhini S.	
6	Yogesh N.	Yogesh N.		Nil
7	Balaji A.	Ravi A.		
8	Kabilraj C.	Sanjay S.		
9	Poovarasan K.			
10	Thirumal P.			
11	SriPadma Rekha			

S.NO	SUBJECTS	SIGNATURE
1	POC-II	
2	PHP-I	S. Vijaya
3	PM	
4	PE	Nil

Prepared by:

Mr.S.Karthikeyan
Class co-ordinator

Dr.M.Ramanathan
PRICIPAL

PSG COLLEGE OF PHARMACY
B.PHARM II YEAR (III SEMESTER) 2019-2020

SLOW LEARNER PEER TUTORING (Based on performance till first sessional)

S. NO	Pharmaceutical Microbiology	Leader	Pharmaceutical Engineering	Leader	Physical Pharmaceutics- I	Leader
1	Anbarasu V.	Moniga R.	Anbarasu V.	S. Shanju Vigasini	Anbarasu V.	K. Priyavarshini
2	Muneer Ahmed		Muneer Ahmed		Muneer Ahmed	
3	Sabari A.E		Sabari A.E		Sabari A.E	
4	Vijayakiruthika M.		Vijayakiruthika M.		Vijayakiruthika M.	
5	Kamaladhini S.				Kamaladhini S.	
6	Yogesh N.	Vignesh V.	Yogesh N.	Manoj prabhakar S.		
7	Balaji A.		Ravi A.			
8	Kabilraj C.		Sanjay S.			
9	Poovarasan K.		Kamaladhini S.			
10	Thirumal P.					
11	SriPadma Rekha					

S.NO	SUBJECTS	SIGNATURE
1	POC-II	
2	PHP-I	
3	PM	
4	PE	

Prepared by:

Mr.S.Karthikeyan
Class co-ordinator

Dr.M.Ramanathan
PRICIPAL

Preparation and quality control of   BCG Vaccine

Introduction

- BCG is bacillus Calmette and Gurein.
- The BCG vaccine was first used to immunize humans in 1921.
- BCG vaccine still remains the standard for TB prevention in most countries.
- It is inexpensive and usually requires only one administration in either newborn or adolescents.

Strains used for production

- BCG vaccine is a live attenuated vaccine originated from culturing **Mycobacterium bovis** isolated from cattle.
- Worldwide, the most commonly used vaccine strains are currently
- Danish 1331
- Tokyo172-1 and
- Russian BCG-I.

Production of BCG

- BCG vaccine is a live attenuated vaccine originated from culturing M. bovis isolated from cattle.

Cultivation of Viruses in Vaccine production

- Since viruses are intracellular parasites they will grow only within living cells. These can be
- Free living animals
- Fertile eggs
- Tissue culture.

Production in fertile eggs
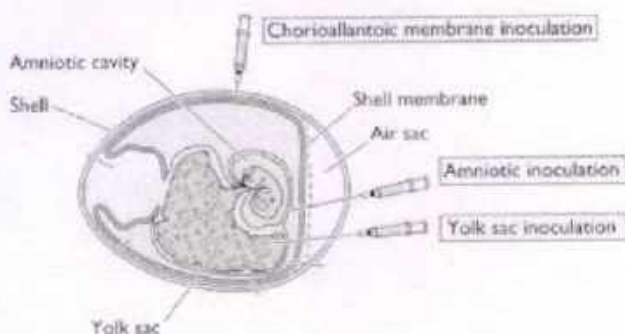
Inoculation on to the Chorioallantoic membrane

- Eggs that have been incubated for 12 days are used.
- A needle is injected on to the membrane and the air is removed.
- Sterile saline is dropped to the cavity.
- The virus is inoculated through the opening.

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Faculty

Inoculation in to the Embryo

- The virus is inoculated directly in to the embryo through the air sac by needle.

Inoculation in to the Yolk sac

- The virus is inoculated directly in to theYolk salk through the air sac by needle.

Incubation

- The virus is incubated for 14 days.
- During incubation precaution to be taken to keep the inoculated area is aseptically clean.

Harvesting

- Grown viruses are separated by grinding. Care should be taken to avoid traces of egg protein get in to the vaccine.

Purification

- The harvested virus is then purified by appropriate method.

Tissue culture method

- In modern day the production of BCG Vaccine carried out in tissue culture because fertilized egg production becomes unsuitable.
- The culture is grown for a period of 13 years and a total of 231 passages.

Quality control of BCG vaccine

Tests carried out on seed lot and final bulk

- Antimicrobial sensitivity test
- Delayed hypersensitivity test
- Identity test
- Test for bacterial and fungal contamination
- Test for absence of virulent mycobacteria
- Test for excessive dermal reactivity.

Filling and containers

- The general requirements concerning filling and containers as per Good manufacturing practices for biological products.
- The containers should be in a form that renders the process of reconstitution as simple as possible.
- Their packaging should be such that the reconstituted vaccine is protected from direct sunlight.

Control of on final lot

Tests on the final lot should be performed after reconstitution, except for appearance and residual moisture tests.

Inspection of final containers

- Every container in each final lot should be inspected visually, and those showing abnormalities should be discarded.

Test for bacterial and fungal contamination

- The final bulk should be tested for bacterial and fungal contamination.
- No vaccine lot should be passed for use unless the final bulk has been shown to be free from such contamination.

Test for absence of virulent mycobacterium

- At least six healthy guinea pigs, all of the same sex, each weighing 250-400 g are used.
- They have not received any treatment or diet, such as antibiotics, that is likely to interfere with the test.
- A dose of BCG organisms corresponding to at least 50 single human doses of vaccine intended for intradermal injection should be injected into each guinea pig by the subcutaneous or intramuscular route.
- The guinea pigs should be observed for at least six weeks.
- The vaccine lot passes the test if not more than one animal dies during the observation period.

Test for number of culturable particles

- The number of culturable particles on a solid medium of each final bulk should be determined by an appropriate method approved by the NRA.

Safety tests

Test for residual moisture

- The average moisture content of a freeze-dried vaccine should be determined by a validated method accepted by the NRA.

Rapid test for viability

- As an alternative to the colony counting method, a bioluminescense or other biochemical method can be used provided that the method is properly validated against the culturable particle.

Thermal stability test

- The thermal stability test may be carried out by taking samples of the vaccine and incubating them at 37°C for 28 days.
- The percentage decrease in the number of culturable particles is then compared with that of samples of the same vaccine lot stored at 2-8°C.

Labeling

- Labeling should be done as per Good manufacturing practices for biological products.
- The label, and/or the packaging insert in some countries, printed on or affixed to each container should show the volume and nature of the diluents.

- Instructions for use of the vaccine and information concerning contraindications and the reactions that may follow vaccination should be mentioned.
- Warnings that the vaccine should be protected from direct sunlight.

Stability testing

- BCG vaccines require special precautions to ensure sufficient stability.
- In this connection the most important measures are lyophilization, the use of an effective stabilizer, and proper sealing of vaccine containers.

Storage conditions

- all vaccines in their final containers should be stored constantly at 2-8°C and vaccine diluents should be stored as recommended by the manufacturer.
- They should be protected from direct sunlight.

Cold chain

- Cold chain should be maintained throughout the transportation to maintain the viability of the vaccine.

Expiry date

- Freeze-dried BCG vaccines may be kept frozen at -15°C to -25°C if cold chain space permits.
- Most freeze-dried BCG vaccines are stable at temperatures of 2-8°C for at least two years from the date of manufacture.

Expiry of reconstituted vaccine

- Freeze-dried BCG vaccines become much more heat sensitive should be stored at 2-8°C until used

PRODUCTION AND RECOVERY OF PENICILLIN

Introduction

- Penicillin was the first antibiotic produced during World War II.
- It is active against gram positive and some gram negative organisms.
- It interferes with cell wall synthesis of sensitive organisms.

Basic structure of penicillin
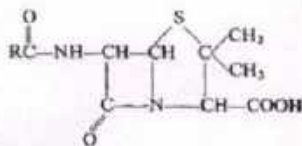
Microorganism

Penicillium notatum

For commercial production: *Highly mutated strains of* **Penicillium chrysogenum** (NRRL, 1951 & Q-176) used.

Inoculum preparation

- Spores from heavily sporulated stocks are added to flasks of nutrient solution which is incubated at 24°C for 5 to 7 days.
- The resulting spores are directly added to the inoculums tank.

Media

Cornsteep liquor solids - 3.5 %
Lactose – 3.5 %
Glucose – 1%
Calcium carbonate-1%
Potassium dihydrogen phosphate-0.4%
Edible oil-0.25%
and Penicillin precursor.
pH – 5.5-6

Fermentor

Deep tank aerated fermentor

Penicillin production

- At the start of the fermentation the pH remains constant.
- As cornsteep liquor is being used, ammonia is liberated from cornsteep liquor and pH rises to 7 to 7.5.
- During the first 20 to 30 hours the fungal growth becomes thick and heavy.
- The optimum pH for penicillin production is 7 to 7.5.
- So the pH is maintained by calcium and magnesium carbonates in the medium.
- Antifoam agents such as lard oil, linseed oil were added.
- Penicillin is harvested before the fermentation pH rises to 8 or above.
- Penicillin yields are linear from 48 to 96 hrs.
- Final penicillin yield is approx. 1500 units/ml.
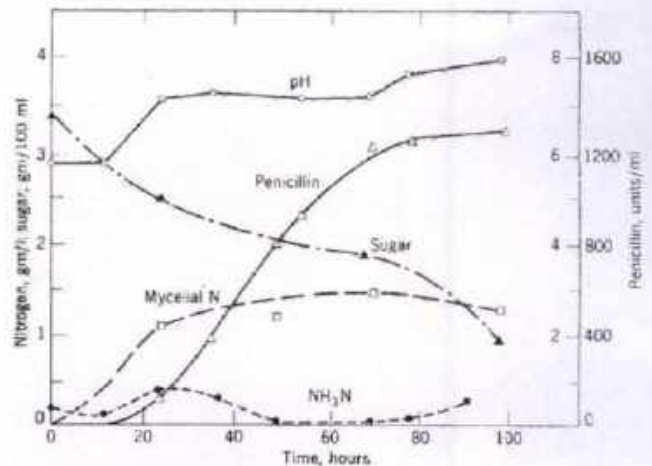
Penicillin harvest and recovery

- The completed penicillin fermentation culture is filtered on a rotary vacuum filter to remove mycelium and other solids.
- Sulfuric acid is added to lower the pH to 2 to 2.5.
- Organic solvents such as amyl acetate or butyl acetate are added.
- The penicillin is then back-extracted in to water by adding potassium or sodium hydroxide to form a salt of penicillin.
- The process is repeated to cause the penicillin to crystallize as sodium or potassium penicillin.
- The resulting crystalline penicillin salt is washed and dried.
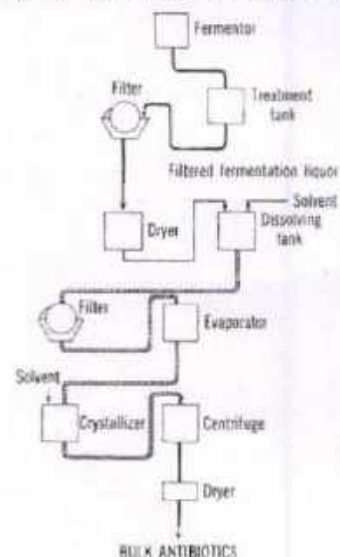
Waste disposal

- Wastes from penicillin production present serious problems.
- These wastes include spent mycelium, extracted broth, wash waters, organic solvents.
- Aqueous extract can be discharged to sanitary sewage for municipal waste treatment.
- Liquids can be evaporated; solids can be dried and buried.

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Faculty

III B.PHARM
PHARMACEUTICAL BIOTECHNOLOGY
2017-2018

Important questions

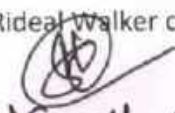### 20marks

1. Types of culture media.
2. Enumeration methods of bacteria.
3. Growth curve.
4. Staining techniques.
5. Reproduction of (i) Bacteria (ii) Fungi (iii) virus.
6. Sterilization methods.
7. Disinfectant evaluation.
8. Microbial assay of antibiotics and vitamins.
9. Production and quality control of vaccines (i) BCG (ii) Rabies (iii) diphtheria (iv) smallpox (v) tetanus (vi) oral polio.
10. Production of Insulin, Interferon, Hepatitis B by recombination technology.
11. Production and recovery of Penicillin, alcohol, citric acid by fermentation.
12. Methods of enzyme Immobilization and applications.
13. Method for animal cell culture and its applications.

5 marks

1. Production of Monoclonal antibodies.
2. Application of Monoclonal antibodies (hybridoma technology).
3. Sterlity testing.
4. Blotting techniques- ELIZA, Southern, Western, northern
5. Transformation, transcription, conjucation.
6. Production of single cell protein.
7. Structure and function of MHC
8. Central dogma.
9. Restriction endonucleases.
10. Cloning vectors.
11. Gene expression.
12. Regulatory aspects of Biopharmaceutical production.
13. Screening methods of industrially important microbes.
14. Design and operation of fermentors.
15. Types of fermentors.
16. Biosensors and its applications.
17. R.W.C and C.M.C
    (Rideal Walker coefficient) (Chick Martin coefficient)

Mr.S.Kaarthikiyan
Faculty

PSG COLLEGE OF PHARMACY

(AN ISO 9001 : 2008 CERTIFIED INSTITUTION)

Peelamedu, Coimbatore 641 004

COLLEGE RECORD

NAME OF FACULTY : KARTHIKEYAN S.

CLASS : III B.PHARMACY

SUBJECT : PHARMACEUTICAL BIOTECHNOLOGY

ACADEMIC YEAR : 2017- 2018

SI. No.	Admission No.	INITIALS OF FACULTY							
		DATE							
		SI.No. OF CLASS TAKEN							
		NAME OF THE STUDENT							
		Lokesh Kumar SPL class			Faulty				
		28.08.18 DNA replication		hA		®			
		29.08.18 Transcription, Translation		c.K		®			
		30.08.18 Transcription, Translation-upat		c.K		®			
		17.09.18 Production q Insulin		c.K		®			
		18.09.18 Production q interferon		c.K		®			
		20.09.18 Immobilization q Enzyme		c.K		®			
		Penicillin Production							
		Faculty Signature!							
		®							
		21/09/18							

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PEELAMEDU
COIMBATORE - 641 004

4. Programs for advanced Learners

4.1 Advanced assignment or tasks

Brainstorming sessions will be conducted for advanced learners to arouse their research interest. They will be asked to learn course or area of their interest in depth by referring text books. They are asked to do a presentation on an advanced topic as part of the continuous assessment.

4.2 GPAT coaching class

The institution had commenced GPAT coaching classes from the academic year 2017-2018 to help students for qualifying in GPAT exams. Three month special coaching classes were scheduled by a team of faculties and conducted for the interested and aspirant students.

4.3 Special recognition

Students were bestowed with awards by the institution for distinguished academic achievement during college day/ graduation day. Each year an outstanding student will be selected by the college who excels in both academic and extracurricular activities.

4.4 Peer tutors to slow learners

Advanced leaders are assigned as peer tutors to help the slow learners in the class room. Peer tutoring increases self-confidence and enhances in depth learning of the subject.

4.5 Motivation to participate in research internship/Summer Research Fellowship programs/ research projects

Students are encouraged to apply for research programs in various national level and international laboratories. The student will be guided by a faculty mentor in the selection of research topic, completion and submission of proposal form to competent authority. Institute Industry Initiative (III) cell organizes interactive session with industrial experts across various disciplines. Advanced learners are motivated to participate and present research paper in conferences. The institution organizes **"INNOVATORS"** which provides competitive platform to the students to display their innovative ideas for some of the challenges faced in the science. Inevitably, every year 1 to 4 B.Pharm & Pharm D students get selected for summer research fellowship provided by INSA and Biotech Innovation Ignition School. One of our student Ms. Janani.P of Pharm D 2013 batch received appreciation award of Rs 1 lakh from SRISTI- BIRAC. The above achievements of the students holds good for the mentoring done by the teachers.
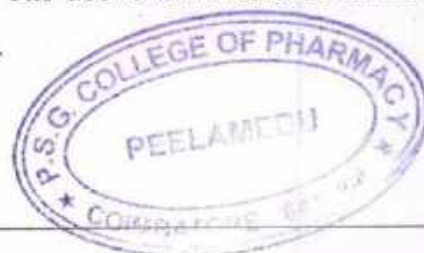
ADVANCED TASK FOR ADVANCED LEARNERS
OUT OF SYLLABUS WORK 2018-2019

Case Summary:

A 22yr old female patient came with c/o high fever (grade intermittent) x 10 days, Breathlessness x 2 day, orthopnoea ⊕, Hippain⊕, Sepsis c̄ ARDS, Pulmonary edema, chills c̄ rigor. She is Prima granda @ 25 w 5d of gestational age (GH) referred, Hypotension, PTE. (She was shifted from GH to PSG hospital).

Lab Investigations:

RBC	: $2.9 \times 10^3/\mu L$
Platelets	: $46 \times 10^3/\mu L$
Hb	: $9.1 g/dl$
PCV /HCT	: 26.9%
Urine culture	: Acinetobacter organism
ECG	: Sinus tachycardia
Others	: Dengue investigation Equivocal

Medications:

Inj. Meropenem
Inj. Pantocid
T. Dolo
Inj. Emeset
C. Dony
Inj. Lasix
Inj. Noradrenaline

Suspected and Reported as:

Sepsis c̄ ARDS
Dengue / Malaria?
Viral syndrome / Scrub typhus., which was characterised by intermittent fever, breathlessness, pulmonary edema, chills c̄ rigor, orthopnoea

Interpretation:

- The patient was suspected to have sepsis (i.e, life-threatening condition that arises when the body's response to infection causes injury to its own tissues and organs (end organ dysfunction)).

- The microorganism was identified as acinetobacter in the urine culture, but no treatment regarding that was given rather only two antibiotics as a common was given as prophylaxis before finding the organism.

- Dengue was not treated and viral syndrome (scrub typhus) which is caused by rickettsiae was found but not treated and ARDS was found.

- This may be caused due to hospitalisation of the patient during these days the correct data was not provided, as acinetobacter is a hospital acquired ventilator disease causing organism causes pneumonia, meningitis etc.

- She may be suffering from pneumonia is our suspect seeing all the symptoms, if not treated may lead to end organ dysfunction, and the root cause may be PTE (Pulmonary thromboendartectomy) and ARDS (Adult Respiratory Distress Syndrome), so this should be treated predominantly.

Submitted by:
1) C. Shanti Priya
2) Srinidhi Sneha . M
3) Satheesh Kumar . M
4) Gowtham kumar . N
5) Vimal Vijayar
6) Nawaf Abdulla

- II PHARM-D
- SUBJECT: PHARMACEUTICAL MICROBIOLOGY
- PSG College of Pharmacy.
- GROUP - III
- Date of Submission - 24-09-18.

PSG COLLEGE OF PHARMACY

(An ISO 9001 : 2008 Certified Institution)

ACCREDITED WITH 'B' GRADE BY NAAC (1ˢᵗ CYCLE)

Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai

Approved by Pharmacy Council of India and All India Council for Technical Education, New Delhi

Recognized as Industrial Scientific Research Organization by DSIR, Govt. of India, New Delhi

AVINASHI ROAD, PEELAMEDU, COIMBATORE 641 004, TAMILNADU, INDIA

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           0422-2570170 (6 Lines)
Fax   : 0422-2594400
E-mail : principal@psgpharma.ac.in
Website : www.psgpharma.ac.in

14.12.2018

TO WHOMSOEVER IT MAY CONCERN

It is with great pleasure that I am writing this letter of recommendation for Mr. S. Saran Aswathaman, for admission in your renowned University. I have known Mr. S. Saran Aswathaman in my capacity as Assistant Professor in the department of Pharmaceutics for past two years. I had handled Pharmaceutical biotechnology subject, which comprises Microbiology, Immunology, Molecular biology, Animal cell culture, and Bioprocess technology.

From the beginning of my association with Saran Aswathaman, I was impressed with his skill and personal standards. In analytical thinking he is among the top 10, in practical skills he is among top 5 and in continuous assessment he ranked 1ˢᵗ among 60 students. He had avid desire to learn and devotion to quality. When we performed a lab it was Saran Aswathaman who adopted the role of leader for his study group. He embraced the task at hand with both enthusiasm and intelligence.

His results were in high quality and well designed. He is one of the highest academically ranked students in the class at the same time he has devoted himself to excelling extra-curricular activities. He is devoted to biological sciences and has admirable aspiration to study biotechnology.

I believe that he has the capacity to excel at your University. I can strongly conclude that he is one of the most talented, self motivated, hard working and dedicated student in his class. It is for these competencies that I would strongly recommend him to your University. I wish him good luck and success in his studies and career.

Mr. S. Karthikeyan, M.Pharm.,
Assistant Professor,
Department of Pharmaceutics,
PSG College of Pharmacy,
Coimbatore-641004. Tamilnadu
Email: skarthik.kerala@gmail.com

Indian Academy of Sciences, Bengaluru
Indian National Science Academy, New Delhi
The National Academy of Sciences, India, Allahabad

Summer Research Fellowships 2018
TO BE USED ONLY FOR STUDENT APPLICANTS

Name of the applicant: M. ANAND BABU   Name of the teacher: S. KARTHIKEYAN

Institution: PSG COLLEGE OF PHARMACY   Title/position: ASSISTANT PROFESSOR

Course studying and year: B.PHARMACY THIRD YEAR   Institution: PSG COLLEGE OF PHARMACY

Broad discipline of interest: LIFE SCIENCE   Quote online REGISTRATION No.: LFS 3439

1. I know the applicant for __03__ years as an undergraduate/graduate/postgraduate/others (specify)

2. I know the applicant   [✓] Quite well   [ ] fairly well   [ ] not so well

Summary of evaluation (tick appropriate boxes)

	Out of 60 students in class/department (please indicate)				
	Outstanding (among top 5%)	High (5-10%)	Medium (10-20%)	Low (<20%)	Not known
General aptitude	✓				
Breadth of scientific interest	✓				
Knowledge of the discipline	✓				
Motivation	✓				
Communication/writing skills	✓				

Applicant's strong qualities:

1. Demonstrative
2. Dutiful
3. Sincere

Applicant's weaknesses:

1. Finicky
2. Sentimental
3. Impatient

Name & address of the teacher in capital letters: S.KARTHIKEYAN, ASSISTANT PROFESSOR
PSG COLLEGE OF PHARMACY, PEELAMEDU, COIMBATORE -641004

Date: 08.12.2017   Signature of the Teacher (with seal of the institution): _____

Additional comments on the applicant   (please use additional sheet if necessary)

FORMAT FOR LETTER OF RECOMMENDATION

Indian Academy of Sciences, Bengaluru
Indian National Science Academy, New Delhi
The National Academy of Sciences, India, Allahabad

Summer Research Fellowships 2018
TO BE USED ONLY FOR STUDENT APPLICANTS

Name of the applicant: **VIGNESH SIVAKUMAR** Name of the teacher: **S. KARTHIKEYAN**

Institution: **PSG COLLEGE OF PHARMACY** Title/position: **ASSISTANT PROFESSOR**

Course studying and year: **B. PHARMACY THIRD YEAR** Institution: **PSG COLEGE OF PHARMACY**

Broad discipline of interest: **LIFE SCIENCE** Quote online REGISTRATION No.: **LFS 3475**

1. I know the applicant for **03** years as an undergraduate/graduate/postgraduate/others (specify)

2. I know the applicant [✓] Quite well [ ] fairly well [ ] not so well

Summary of evaluation (tick appropriate boxes)

	Out of **60** students in class/department (please indicate)				
	Outstanding (among top 5%)	High (5-10%)	Medium (10-20%)	Low (<20%)	Not known
General aptitude	✓				
Breadth of scientific interest	✓				
Knowledge of the discipline	✓				
Motivation	✓				
Communication/writing skills	✓				

Applicant's strong qualities:

1. Good analytical thinking
2. Hard working
3. Has leadership skills

Applicant's weaknesses:

1. Emotional
2. Can't say NO to accepting everything
3. Anxions

Name & address of the teacher in capital letters: S.KARTHIKEYAN, ASSISTANT PROFESSOR
PSG COLLEGE OF PHARMACY, PEELAMEDU, COIMBATORE -641004

Date: 08.12.2017 Signature of the Teacher (with seal of the institution): _S.K_ 08/12/17

Additional comments on the applicant   (please use additional sheet if necessary)

<u>FORMAT FOR LETTER OF RECOMMENDATION</u>

Indian Academy of Sciences, Bengaluru
Indian National Science Academy, New Delhi
The National Academy of Sciences, India, Allahabad

Summer Research Fellowships 2018
TO BE USED ONLY FOR STUDENT APPLICANTS

Name of the applicant: K. CATHRIN CHRISTY Name of the teacher: S. KARTHIKEYAN

Institution: PSG COLLEGE OF PHARMACY Title/position: ASSISTANT PROFESSOR

Course studying and year: B.PHARM, THIRD YEAR Institution: PSG COLLEGE OF PHARMACY

Broad discipline of interest: LIFE SCIENCES Quote online REGISTRATION No.: LFS 2630

1. I know the applicant for __03__ years as an undergraduate/graduate/postgraduate/others (specify)

2. I know the applicant [✓] Quite well [ ] fairly well [ ] not so well

Summary of evaluation (tick appropriate boxes)

	Out of 60 students in class/department (please indicate)				
	Outstanding (among top 5%)	High (5-10%)	Medium (10-20%)	Low (<20%)	Not known
General aptitude	✓				
Breadth of scientific interest	✓				
Knowledge of the discipline	✓				
Motivation	✓				
Communication/writing skills	✓				

Applicant's strong qualities:

1. Exuberant
2. Good Communication Skills
3. Obedient

Applicant's weaknesses:

1. Temperamental
2. impatient
3. Overcautious

Name & address of the teacher in capital letters: S.KARTHIKEYAN, ASSISTANT PROFESSOR
PSG COLLEGE OF PHARMACY, P.Box No: 1674, PEELAMEDU, COIMBATORE
TAMIL NADU, 641004.

Date: 05.12.2017 Signature of the Teacher (with seal of the institution): _____

Additional comments on the applicant   (please use additional sheet if necessary)

5. Programs for Average Learners and Non Performers

5.1 CSR Activities

Average learners are encouraged to participate in various community and social activities. They are invigorated to participate in awareness campaign, poster presentation for awareness campaign, NSS activities and Valarkarangal.

5.2 Capacity building Programme

Soft skill development, English language training, resumes writing classes were conducted to improve their chance of getting placed.

5.3 PSG Student Wellness Centre

Non performers will be provided with counselling to identify their problems. They will be directed to PSG Student wellness centre for personal counselling (if required).

5.4 Identifying innate Talents

Non performers may have special inclination towards certain creative domains such as music, software, app development and photography. Through mentorship program and faculty interaction they have been given chances to identify and hone the skills. Various activities were organized through students club and they were provided with an opportunity to participate in inter college events. Winners' galleries were published in college magazine to promote new talents.

6 Outcome Report

6.1 Remedial Measures Taken & Outcome

S.No	Year	Midcourse Concerns	Remedial Measures	Outcome
1	2017 -2018	Difficulty faced in understanding of certain topics in B.Pharm Pharmaceutical Dosage form & Cosmetic technology course	Practical demos and illustrations on dosage form	Scored well due to better understanding
3	2018 -2019	Many slow learners were observed in B.Pharm Advanced Pharmacognosy course in the I Sessional Examination.	Implementation of 'short title presentations' for motivation and boost up confidence level	Improvement was observed in the next Sessional examination
4	2018 - 2019	Difficulty faced in understanding of certain topics in B.Pharm Advanced Pharmacognosy course	Practical demonstration given in the lab	Learning made easy due to visual evidences
5	2018 - 2019	Improving the understanding of certain topics in III B.Pharm Pharmaceutical Dosage form & Cosmetic technology course	Practical demos and illustrations on dosage form	Learning made easy due to visual evidences and all passed in the final exam
6	2019-2020	Many failures observed in III B.Pharm Medicinal Chemistry Icourse	Team leader analysis - Peer tutoring	95% students are benefitted and passed

PSG College of Pharmacy,Coimbatore-4
Remedial Measures

Batch – (2018-2019) Programme – IV B Pharm (Non Sem)
Course- Advanced Pharmacognosy
Action plan - Conduct of short title presentations

Many failures were observed in Advanced Pharmacognosy in the I Sessional Examination.

So, as a motivational strategy 'SHORT TITLE PRESENTATIONS' were allotted to students who scored less.

Almost all of them were appreciated during their presentations which helped them to gain confidence.

Then they put in hard work and scored a higher mark in the 2nd Sessional exam.

S. No	Name of student	I Sessional Mark	II Sessional Mark	Topic of Presentation
1	Ajith kumar S	4	7	Amla
2	Anand Babu M	2	8	Tracer Techniques
3	Azarudeen S	3	8	Enzyme Isolation
4	Balavikash R	4	8	Shilajith
5	Gowtham P	3	5	Rasna
6	Kanagaraj S	5	10	GC application
7	Karan S	5	8	Shatavari
8	Mohammed Hashim	3	4	Herbal Cream
9	Natarajan C	3	6	Cholesterol Biosynthesis
10	Rajesh S	5	6	Arishta
11	Ranjith S	3	6	Atropine biosynthesis
12	Santhosh Kumar G	3	8	Herbal Tincture
13	Srivatsan G	4	8	Garlic
14	Theenethayalan S	2	8	Ergot

(Original detail from Attendance scanned & enclosed)

Course: Advanced pharmacognosy.

INTERNAL MARK REPORT - Theory (IA)

Name of the Student	Sessional Exams			Final Average		
	Date: I (15)	Date: II (15)	Date: III	IA (15)	CA (10)	Total (25)
Aishwarya. S.S	10	8	12	10	7	17
Ajithkumar .S	04	7	8	6.3	4	11
Akshayavarshini M	13	13	14	13.3	9	22
Anand Babu. M	02	8	9	6.3	4	10
Anitha. K	9	10	12	10.3	7	17
Anushiya. A	9	10	12	10.3	7.4	18
Arvinth kumar. S	12	12	12	12	7.5	20
Zaaudeen. S	03	8	10	7	5.2	12
Balavikash. R	4	8	9	7	5.3	12
Brindhalakshmi. P	11	11	12	11.3	7.6	19
Cathainchristy. K	11	12	13	12	7.1	19
Deepika Deivanai. K	10	9	12	10.3	7.5	18
Dharaninath. P	10	9	11	10	5.5	16
Divyabala. N. M	08	11	11	10	7.9	18
Durgadevi. G	12	11	12	11.3	7.8	19
Gopinath. E	08	05	8	7	4.4	12
Gowtham. P	03	05	11	6.3	4.5	11
Gowthamkumar. V	08	08	11	9	4.7	14
Gunaseelan. TH	08	12	12	10.6	7.3	18
Jayanandhini V	02	A	11	4	4.7	9
Jaya pradha P	11	11	A	7.3	6.4	14
Joychristy. P	9	11	13	11	7.6	19
Kanagaraj. S	5	10	10	8.3	4.8	13
Karan. S	5	8	9	7.3	4.4	12
Kishorekumar. S	7	8	10	8.3	5.4	14

Course: Advanced pharmacognosy.

INTERNAL MARK REPORT - Theory (IA)

R.No	Name of the Student	Sessional Exams			Final Average		
		Date: I	Date: II	Date: III	IA	CA	Total
	Kowsalya. D	9	8	10	9	6.2	15
	Loganathan M	4	9	9	7.3	4.6	12
	Logeshkumar G	9	5	10	8	5	13
	Lokesh. S	10	10	11	10.3	5.5	16
	Lokeshwar M	8	9	10	9	5	14
	Mohamed Hashim. C.M	3	4	9	5.3	5.2	11
	Mohamed Inthiyas. P	8	10	10	9.3	6.3	16
	Mohanraj. T	4	6	10	6.6	5.5	12
	Monisha R	07	08	10	8.3	6.7	14
	Natarajan. C	3	6	9	6	4.5	11
	Pavithra. A	9	10	11	10	6.2	16
	Pavithra R	11	9	12	10.6	6.2	17
	Praveenraj.	9	6	10	8.3	4.9	13
	Pravinkumar k	5	3	9	5.6	6	12
	Priyanga. P. S	8	9	11	9.3	6.7	16
	Rajesh. S	5	6	8	6.3	5.2	12
	Ramprakash. V	8	8	10	8.6	6.7	15
	Ranjith S I	3	6	10	6.3	4.7	11
	Sangeetha. G	10	10	12	10.6	6.8	17
	Santhiya. B	13	11	12	12	7.2	19
	Santhosh kumar G	03	8	10	7	4.4	11
	Saran Aswathaman. s	11	12	12	11.6	8.5	20
	Savitha R	7	11	12	10	6.1	16
	Sebastisixtus Hilary. s	5	4	8	5.6	4.8	10
	Sriravind	6	7	9	7.3	5.6	13

Advanced pharmacognosy.

INTERNAL MARK REPORT - Theory (IA)

No	Reg No	Name of the Student	Sessional Exams			Final Average		
			Date	Date	Date	IA	CA	Total
			I (5)	II	III			
		Sivaranjani J	10	10	12 ½	7.6	7.5	15
		Sowndarya S	05	6	8	6.3	5.1	12
		Sridevi D	11	11	11	11	7.9	19
(Garlic)		Srivathsan G	4	8	9	9	5.7	15
		Tharasani B	9	9	11	9.6	6.6	16
(Erypt)		Theenathayalan S	02	8	9	6.3	5.2	12
		Vaishnavi S	12	11	12	11.6	8.6	20
		Vignesh S	10	11	10	10.6	6.3	17
		Vinothkumar R	8	08	12	9.3	4.8	14

6.2 Learning Level Progression B.Pharm students 2015 Batch

Percentage Progression of different learners for B.PHARM 2015-2019

SLOW LEARNER

ADVANCED LEARNER

AVERAGELEARNER

NON PERFORMER
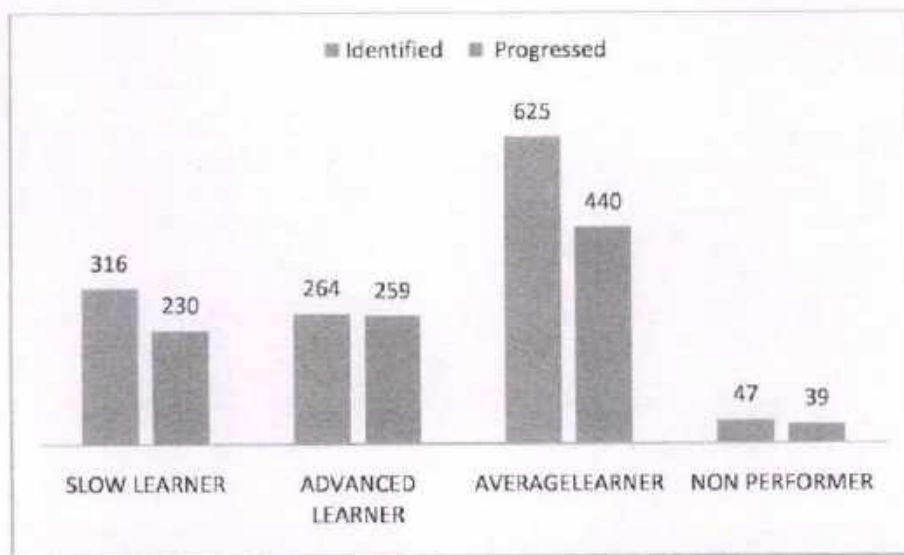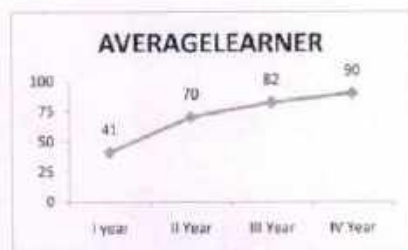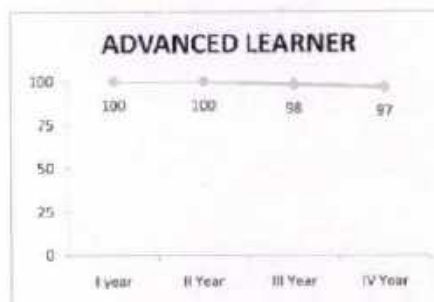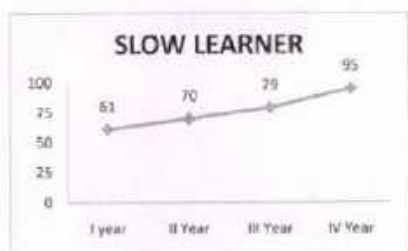
6.3 Achievements of B. Pharm 2015 Batch

S.No	Achievements	No of Students
1	GPAT qualifiers	16
2	Higher studies	20
3	The TN Dr MGR Medical University Gold Medal winner	1
4	Students Placed in industry	8
5	Summer research fellowship	1
6	Sports Leadership	1
7	Zonal Level Prize in poster presentation	1

6.4 List of University Gold Medals winners from 2015-2019

1. Ms.Giphy Susan Varghese Pharm D (2012 batch) received The TN Dr MGR Medical University Medal from **The Tamil Nadu Dr MGR Medical University, Chennai** for securing highest marks in Pharm D course in the university examination held during Oct 2015.

2. Ms. Snitha Rajan Jacob Pharm D (2011 Batch) received The TN Dr MGR Medical University Medal from **The Tamil Nadu Dr MGR Medical University, Chennai** for securing highest marks in Pharm D course in the university examination held during Oct 2015.

3. Ms. E. Krithika B.Pharm (2012 batch) received **Prof K Chinnaswamy Endowment Gold Medal** from **The Tamil Nadu Dr MGR Medical University, Chennai** for securing highest mark in final B.Pharmacy degree course in the university exam held during Aug 2016.

4. Ms. Grace Samkutty M Pharm Pharmacy Practice (2014 Batch) received **CL Baid Mehta Endowment Gold Medal** from **The Tamil Nadu Dr MGR Medical University, Chennai** for securing highest mark in M.Pharmacy post graduate degree course - Pharmacy Practice in the university examination held during Apr 2016.

5. Ms. A. Sridevi. M.Pharm Pharmaceutics (2015 batch) received **C.L.Baid Metha Endowment Gold Medal** from **The Tamil Nadu Dr MGR Medical University, Chennai** for securing highest mark in M.Pharmacy post graduate degree course in the university exam held during Oct 2017.

6. Ms. A. Joy Christy B.Pharm (2015 batch) awarded **Prof. K. Chinnaswamy Endowment Gold Medal** from **The Tamil Nadu Dr MGR Medical University** for securing the highest mark in final B.Pharmacy in Tamilnadu Dr. M. G. R Medical university examinations conducted during August 2019.

7. Ms.E.Krithika B.Pharm (2012 batch) received **Fourrts Merit award** for securing first rank in B.Pharmacy and awarded cash prize of **Rs.7000** from **Tamil Nadu Pharmaceutical Sciences Welfare Trust** on 25.11.2016.

8. Mr.M. Ram Pravin Kumar B.Pharm (2012 batch)) received **Fourrts Merit award** for securing second rank in B.Pharmacy and awarded cash prize of **Rs.6000** from **Tamil Nadu Pharmaceutical Sciences Welfare Trust** on 25.11.2016.

6.5 Awards for best students by other institutions

1. Mr. N. Balaji, B.Pharm 2014 batch received Best student award for overall performance in academic and extracurricular activities at 1st ISTE TN selection annual convention of MBA, MCA, Architecture and Pharmacy students on 24th February, 2018, Excel Group Institution, Pallakapalayam.

2. MsYogalakhsmi. M B.Pharm 2014 batch received Best student award for overall performance in academic and extracurricular activities at 1st ISTE TN selection annual convention of MBA, MCA, Architecture and Pharmacy students on 24th February, 2018, Excel Group Institution, Pallakapalayam.

6.6 Awards in Conference/Seminar

1. **Ms. M. Ramya, Pharm D 2013 batch received Best Oral Presentation for the work titled** "Impact on Time in Therapeutic range in Patients receiving Oral Anti-coagulation Therapy" in 4th International conference on clinical Pharmacy organized by Manipal college of Pharmaceutical Sciences on 5th and 6th January, 2019.

2. **Ms. Aswana M.Pharm (2017 batch) won Best poster in the National conference on Nano-Biotechnology: Applications, Recent developments, Future prospects, & challenges** held at Bannariamman institute of technology, Erode on 13.3.2019 to 14.3.2019.

3. **Mr. Eldhose Jose, Pharm D 2013 batch won Male Participant at "Summer School of Applied Pharmacokinetics workshop** held at JSS college of Pharmacy, Ooty conducted from April 13th to 18th, 2019.

4. **Ms. Mehaboob Shireen, Ms. Keerthana and Mr. R. Sujith, Pharm D 2013 batch won Best group at "Summer School of Applied Pharmacokinetics workshop** held at JSS college of Pharmacy, Ooty conducted from April 13th to 18th, 2019.

5. **Mr. Vignesh.S, Ms. Gifty Julia B.Pharm 2016 batch & Mr.Karthik Aravindha Rajan** of M.Pharm 2018 batch was selected to the **National Level workshop conducted by MAKE INTERNS- IIT (Shastra)** from June 3rd to 7th, 2019.

6. **Ms. Dharani A, Mr. Joseph Noel Jacob and Ms. Janani.P, Pharm D 2013 batch** were selected to the **National Level workshop conducted by MAKE INTERNS-IIT (Shastra)** from June 3rd to 7th, 2019.

7. **Ms. Mahipriyaa S.R (2018 batch)** won **second place in the poster presentation** in One day International Conference on Recent Advances in Pharmaceutical Industry Bridging the gaps in Pharma Education held at KMCH College of Pharmacy, Coimbatore on 23.7.2019.

8. **Ms. Sruthi.K** (Pharm D 2014 batch) secured **First place in E poster presentation** titled "Trigger tool based detection of ADE associated with high alert medication" in one day national level seminar on 3 rd September 2019 held at KMCH college of Pharmacy, Coimbatore.

9. **Mr. M. Vakkil M.Pharm (2017 Batch)** Dept of Pharmacology won first prize in poster presentation on First National Symposium on Animal Research & Ethics held on 12 th to 13 th Sep 2019 at PSG College of Pharmacy,Coimbatore.

10. **Mr. A. KarthikRajan M.Pharm** (2018 Batch) Dept of Pharmacology won second prize in poster presentation on First National Symposium on Animal Research & Ethics held on 12 th to 13 th Sep 2019 at PSG College of Pharmacy,Coimbatore.

11. **Ms. Priyanka**,M.Pharm (2016 Batch) Dept of Pharmaceutical Analysis won third prize in poster presentation on National Seminar on Recent trends in pharmaceutical sciences Pharma Analytica-2k18 held on 20 Jan 2018 at National college of Pharmacy,Kerala.

12. **Ms. E. Tamilselvi** (2016 batch) won **First place in poster presentation** in Two days National Seminar on Bio-informatics-A tool for Pharmaceutical Biotechnology and Drug discovery held at RVS College of Pharmaceutical Sciences, Sulur,Coimbatore on 21.6.2018 to 22.6.2018.

13. **Mr. Naveen. T** (2016 batch) won **third place in poster presentation** in Two days National Seminar on Bio-informatics-A tool for Pharmaceutical Biotechnology and Drug discovery held at RVS College of Pharmaceutical Sciences, Sulur,Coimbatore on 21.6.2018 to 22.6.2018.

14. **Mr. R. Kaviyarasan** (2016 batch) won **second place in poster presentation** in Two days National Seminar on Bio-informatics-A tool for Pharmaceutical Biotechnology and Drug discovery held at RVS College of Pharmaceutical Sciences, Sulur,Coimbatore on 21.6.2018 to 22.6.2018

15. **Mr. Mohammed Jamshir K** (2016 Batch) .M.Pharm Dept of Pharmacology won first prize in poster presentation on National Seminar on Future Aspects of

Pharmacotherpeutic Approaches in Disease Management held on 5 th to 6 th Oct 2018 at PSG College of Pharmacy,Coimbatore.

16. **Mr. K. Arjunan** Research Scholar won **First Prize in poster presentation** for the work titled "Non-toxic silver nanoparticles: Synergistic and enhanced cytotoxic effects of chemotherapeutic drug in the conference held at Sankaralingam Bhuvaneswari college of Pharmacy,Sivakasi on 01.11.2018.

17. **Ms. Keerthana. R** Pharm D (2013 batch) received **appreciation of oral presentation** at **International conference on challenges and opportunities for clinical pharmacists** held at College of Pharmaceutical Sciences,Dayananda Sagar University,Bengaluru on 17 th & 18 th December 2018.

18. **Ms. Saranya.N** Pharm D (2013 batch) received **appreciation of oral presentation** at **International conference on challenges and opportunities for clinical pharmacists** held at College of Pharmaceutical Sciences,Dayananda Sagar University,Bengaluru on 17 th & 18 th December 2018.

19. **Mr Suresh Balaji K B. Pharm (2013 batch)** received Best Poster award on the conference Innovations on Pharmaceutical Technology and a workshop on GLP/ GMP compliance held at NIPER, Hyderabad on $24^{th} - 25^{th}$ January 2017 for the work entitled "Densitometric Determination of Flavonoids content present in Ocimum Basilicum Leaves".

20. **Mr. Jaykrishna. S. S** B.Pharm (2013 batch) received **Best Poster award** on the conference Innovations on Pharmaceutical Technology and a workshop on GLP/ GMP compliance held at NIPER, Hyderabad on $24^{th} - 25^{th}$ January 2017 for the work entitled "Novel Cubosomal Drug Delivery to enhance the Skin Permeation of DAPSONE"

21. **Mr Siram Karthik** Research Scholar won **Best Oral Presentation** for the work titled "Development of novel preformulation method for preparation of lipid based formulation" in the conference held at RVS College of Pharmaceutical Sciences on 20.01.2017.

22. **Ms. Keerthana Rajkumar** Pharm D (2013 batch) awarded **First Place in the Poster Presentation** conducted during **MEDS'2017-High Reliability in Medication Process** held on 18 th March 2017 at GKNM Hospital.
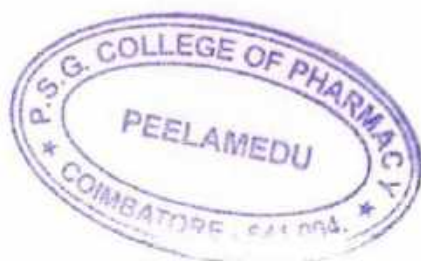
23. **Ms. Shuruthi.S** Pharm D (2014 batch) awarded **Second Place** in the poster presentation conducted during **MEDS'2017-High Reliability in Medication Process** held on 18 th March 2017 at GKNM Hospital.

24. **Mr. K Arjunan** Research Scholar won **Best poster Presentation** for the work titled "A facile surface modified green synthesized silver nanoparticles" in the conference held at KM College of Pharmacy, Madurai on 25.11.2017.

25. **Ms. Shambavi Ravichandar** Pharm D(2011 batch) awarded **First prize** in poster session of CPCON-2016 held on 8th and 9th January 2016 at **International Conference on Evolving Role of Clinical Pharmacist in Multidisclipinary Healthcare Settings** held at **Manipal College of Pharmaceuticql Sciences,Manipal University,Manipal.**

26. **Mr. Nikhil Vinod Pharm D(2011 batch)** awarded **Second Place in poster presentation competition during Clinipharma Summit Module-I** organized by Dept of Clinical Pharmacy, **Aster MIMS Calicut** held on 4 th Dec 2016.

6.7 Research Fellowships

1. **Mr. A. Balasachidanandam** M.Pharm Pharmacology 2015 batch received "Rangachari memorial Award" by Tamilnadu Pharmceutical Sciences Welfare Trust, Chennai.

2. **Mr. Vijaya Ragavan** M.Pharm Pharmacology 2015 batch received "Rangachari memorial Award" by Tamilnadu Pharmceutical Sciences Welfare Trust, Chennai.

3. **Mr. Eldose Jose and Ms. P Janani** PharmD 2013 batch, were selected from a national field of applicants for the Biotech Ignition Innovation School (BIIS) held at Ahmedabad, Gujarat from 9-29 December 2017

4. **Mr.Balaji N**, B.Pharm 2014 batch student was assigned to Dr. Ganesh Chandra Sahoo, who is a scientist C in Rajendra Memorial Research Institute of Medical Sciences (RMRIMS), Patna, Bihar from Nov 2017 for 56 days under summer research fellowship.

5. **Ms Fashila Banu A** 2014 batch got selected by Indian Academy of Sciences and underwent summer research fellowship program in IISER, Bhopal for 2 months from Nov 2017.

6. **Mr.Arvinth Kumar.S,**B.Pharm 2015 batch underwent Summer Research Fellowship program at the Institute of Genomics and Integrative Biology (IGIB), New Delhi Dr. Sivaprakash Ramalingam from 14 May 2018 to 10 July 2018 (56 Days).

7. **Ms. P. Janani** , Pharm. D (Intern) received a NIF- SRISTI Appreciation award and received grant of Rs.1,00,000/- from society for research and Initiatives for sustainable technologies and Institutions, under the guidance of Mr.S.Karthikeyan, Assistant Professor, Department of Pharmaceutics.

8. **Ms. Sharmila**, Pharm D 2014 batch was selected as a research fellow by "BIOTECH INNOVATION INGITION SCHOOL (BIIS)" 2018, Ahemedabad.

9. **Ms. Haritha.D**.B.Pharm 2014 batch was selected as a research fellow by "BIOTECH INNOVATION INGITION SCHOOL (BIIS)" 2018, Ahemedabad.

10. **Mr. Karthik Kannan. R** B.Pharm 2016 batch have undergone summer research fellowship programme entitled "Splicing Analysis of human 45 s RNA at L.V.Prasad Eye institute, Hyderabad from 25th Sept 2019 to 23rd Nov 2019.

11. **Ms. K. Bharathi** B.Pharm 2016 have undergone summer research fellowship programme entitled "Optimization of protein Isolation techniques from human

placenta for proteomics study by mass Spectrometry, at Translational Health Sciences and Technology Institute, Faridabad from 25th Sept 2019 to 23rd Nov 2019.

12. **Mr. Arunprasath. D** B.Pharm 2016 have undergone summer research fellowship programme entitled "Endosomal gene expression in Drosophila's hematopoietic system at Jawarharlal Nehru Centre for Advanced Science and Research, Bengaluru from 25th Sept 2019 to 23rd Nov 2019.

13. **Mr. Karthikeyan** B.Pharm 2016 have undergone summer research fellowship programme entitled "Role of ubiquitin proteosome complex in HPV induced cervical cancer at University of Delhi, South Campus from 25th Sept 2019 to 23rd Nov 2019.

6.8 Awards For Extracurricular activities

1. **Ms. A. Hareni Iyer B.Pharm 2017 batch and Ms.K. Bharathi, B.Pharm 2016 batch secured 1st & 3rd Place respectively in the Elocution competition** for Pharmacy students on the theme "Pharmacists are your medicines Experts" was conducted in co-ordination with IPA, Coimbatore on 25th September 2018.

2. **Mr.Saran Aswathaman. S** B. Pharm 2015 batch secured 3rd place in zonal level presentation on topic "I am a Pharmacist" held at Sri Ramakrishna College of Pharmacy, Coimbatore.

3. **Ms. Dharshini** B.Pharm 2016 batch in National Elocution Competirion (NEC), Won 2nd Place in State round held at Vinayaka Missions's College of Pharmacy, Salem and Participated in semi-final round at VIGAN INSTITUTE OF PHARMACEUTICAL TECHNOLOGY, Vishakhapatnam on the topic of "Role of Pharmacist in transforming health care system: Responsibilities and challenges" on 22.11.2019.

4. **Ms. Hareni Iyer** III B.Pharm 2017 batch won the 1st prize in elocution competition "Safe and Effective Medications for all" held as a part of world Pharmacist Day celebrations on 25th Sept 2019 at Karpagam College of Pharmacy.

5. **Ms. Dharshini** B.Pharm 2016 batch won the 1st prize in elocution competition "Safe and Effective Medications for all" held as a part of world Pharmacist Day celebrations on 25th Sept 2019 at Karpagam College of Pharmacy.