

HINDU COLLEGE
GUNTUR
DEPARTMENT OF
BIOTECHNOLOGY
CERTIFICATE COURSE
BATCH: 2021 - 2024



HINDU COLLEGE: GUNTUR

DEPARTMENT OF BIOTECHNOLOGY

STUDENTS CERTIFICATION PROGRAM: 2021 - 2024 BATCH

PHARMACEUTICAL MICROBIOLOGY

(THEORY)

UNIT I : CULTURE MEDIA

Growth and cultivation of bacteria and virus. Study of different important media required for the growth of aerobic and anaerobic bacteria & fungi. Differential media, enriched media and selective media, maintenance of lab cultures.

UNIT - I STERILIZATION

Detailed study of different methods of sterilization including their merits and demerits. Sterilization methods for all pharmaceutical products. Detailed study of sterility testing of different pharmaceutical preparations.

UNIT II : DISINFECTION

Disinfectants- Study of disinfectants, antiseptics, fungicidal and virucidal agents factors affecting their activation and mechanism of action. Evaluation of bactericidal, bacteristatic, , virucidal activities, evaluation of preservatives in pharmaceutical preparations.

UNIT IV : STAINING TECHNIQUES

Different methods used in isolation and identification of bacteria with emphasis to different staining techniques and biochemical reactions. Counting of bacteria -Total and Viable counting techniques.

UNIT V : MICROBIAL SENSITIVITY

Microbial culture sensitivity Testing: Interpretation of results Principles and methods of different microbiological assays, microbiological assay of Penicillin, Streptomycin and vitamin B2 and B12.

PRACTICALS

- 1.Isolation of bacteria : Streak plate method , Pour plate method
2. Preparation of media and sterilisation
- 3.Staining techniques – Simple staining ; Gram's staining
- 4.Cultural sensitivity testing for some micro-organisms
- 5.Enumeration of micro-organisms (Total and Viable)
- 6.Study of the methods of isolation of pure culture.
7. Sterility testing of different pharmaceutical products - Injections ; Ophthalmic preparations

REFERENCES:

1. Microbiology: An Introduction, 9th edition (2008), Gerard J. Tortora, Berdell R. Funke, Christine L. Case; Benjamin Cummings. ISBN-13:978-0321733603.
2. Prescott, Harley, and Klein's Microbiology, 8th edition, (2011), Joanne M. Willey, Linda M. Sherwood, Christopher J. Woolverton, McGraw Hill International. ISBN- 13:978-0071313674.
3. Bailey and Scott's Diagnostic Microbiology, 12th edition (2007), Betty A. Forbes, Daniel F. Sahm and Alice S. Weissfeld; Mosby Elsevier Publishers, ISBN-13: 978- 0808923640.
3. 4. Microbiology, 6th edition (1993), Pelczar, Chan and Krieg; McGrawHill International, ISBN-13:978-0070492585.
4. 5. Microbiology: A Laboratory Manual, 10th edition, (2013), James Cappuccino and Natalie Sherman, Benjamin Cummings. ISBN-13:978-0321840226.
5. a. Prescott L.M., Jarley G.P Klein D.A —Microbiology 2nd- edition Mc Graw Hill Company Inc
6. b. Rawlins E.A. Bentley's Text Book of Pharmaceutics B ailliere Tindals 24-28
7. London 1988
8. c. Forbisher — Fundamentals of Microbiology Philadelphia W.B. Saunders.
9. d. Prescott L.M. Jarley G.P., Klein.D.A. — Microbiology. 2nd edition WMC Brown
10. Publishers, Oxford. 1993
11. e. Vanitha Kale and Kishor Bhusari — Applied Microbiology Himalaya Publishing
12. house Mumbai.
13. f. A text book of Medical Microbiology by Ananthanarayana and panikar

HINDU COLLEGE: GUNTUR
DEPARTMENT OF BIOTECHNOLOGY
STUDENTS CERTIFICATION PROGRAM: 2021 - 2024 BATCH
PHARMACEUTICAL MICROBIOLOGY

Max Time: 2 hours

Max Marks: 50 Marks

SECTION – A

Answer any '2' of the following questions

2 × 10 = 20M

1. Write in detail about different culture media for bacteria
2. Write about culture sensitivity testing
3. Write about Microbial assay Antibiotics
4. Write about different disinfection methods

SECTION- B

Answer any '5' of the following questions.

5 × 4 = 20M

1. Methods for sterilization
2. Bacterial growth curve
3. Minerals used for microbial nutrition
4. Different bacterial counting methods
5. Phenol coefficient method
6. Sensitivity of MICROORGANISMS
7. Filter disc method
8. Factors influencing bacterial growth

SECTION-C

Answer all the following questions

5 × 2 = 10M

1. Define sterilization
2. Define antifungal activity
3. Define antibiotics
4. Define disinfectant
5. Define metabolite

HINDU COLLEGE

GUNTUR

DEPARTMENT OF BIOTECHNOLOGY

LIST OF STUDENTS ENROLLED

S. No	Name of the student	Signature
1	Alaparthi Velangani Vasanthanjali	A. Anjali
2	Raga Hema Keerthi Sri	E. Hemakeerthi Sri
3	Gajjalakonda Sai srujana	G. Sai srujana
4	Murikipudi Grace Mary Sowjanya	M. Grace Mary Sowjanya
5	Tadisetty Sai Sravani	T. Sai Sravani
6	Tiriveedhi Vaishnavi	T. Vyshnavi
7	Vengalasetty Devaki sri	N. Devaki sai

HINDU COLLEGE:: GUNTUR	
SCIENCES & ALLIED COURSES	
DEPARTMENT OF MICROBIOLOGY & BIOTECHNOLOGY	
SEMESTER-3 BSC Cell and Tissue Culture	
S.NO	NAME OF THE STUDENT
1.	A. Vaganthanjali
2.	E. Hemakanthini
3.	G. Sai Saranya
4.	M. Kavya Saijanya
5.	T. Sai Seemani
6.	T. Vyshnavi
7.	V. Devaki Sai
8.	G. Surandhini

HINDU COLLEGE: GUNTUR

DEPARTMENT OF BIOTECHNOLOGY

STUDENTS CERTIFICATION PROGRAM: 2021 - 2024 BATCH

PHARMACEUTICAL MICROBIOLOGY

MARKS OBTAINED (50 MARKS)

S. No	Name of the student	MARKS OBTAINED (MAX 50 M)
1	Alaparthi Velangani Vasanthanjali	45
2	Raga Hema Keerthi Sri	45
3	Gajjalakonda Sai srujana	47
4	Murikipudi Grace Mary Sowjanya	45
5	Tadisetty Sai Sravani	49
6	Tiriveedhi Vaishnavi	48
7	Vengalasetty Devaki sri	45
8	Ghanta Sunandhini	47





HINDU COLLEGE, GUNTUR
CERTIFICATE COURSE FOR (2021–2024) BATCH
DEPARTMENT OF BIOTECHNOLOGY
CERTIFICATE OF PARTICIPATION

This is to certify that Mr/Miss _____ Studying
B.Sc. **BIOTECHNOLOGY** has participated in Certificate Course for Thirty Days
conducted by the Department of BIOTECHNOLOGY, HINDU COLLEGE, Guntur,
from 20/06/2022 to 20/07/2022. We wish you all the best in his/her future
endeavors.

HOD

Head
Department of Biomedical Sciences
Hindu College, Guntur.

DIRECTOR

DIRECTOR
Sciences & Allied Courses,
Hindu College
Amaravathi Road Campus



HINDU COLLEGE, GUNTUR
CERTIFICATE COURSE FOR (2021–2024) BATCH
DEPARTMENT OF BIOTECHNOLOGY
CERTIFICATE OF PARTICIPATION

This is to certify that Mr/Miss G.SAI SRUJANA Studying B.Sc. **BIOTECHNOLOGY** participated in Certificate Course for Thirty Days conducted by the Department of BIOTECHNOLOGY, HINDU COLLEGE, Guntur, from 20/06/2022 to 20/07/2022. We wish you all the best in his/her future endeavors.

HOD

Head
Department of Biomedical Sciences
Hindu College, Guntur.

DIRECTOR

DIRECTOR
Sciences & Allied Courses,
Hindu College
Amaravathi Road Campus



HINDU COLLEGE, GUNTUR
CERTIFICATE COURSE FOR (2021–2024) BATCH
DEPARTMENT OF BIOTECHNOLOGY
CERTIFICATE OF PARTICIPATION

This is to certify that Mr/Miss T.SAI SRAVANI
Studying B.Sc. **BIOTECHNOLOGY** participated in Certificate Course for Thirty
Days conducted by the Department of BIOTECHNOLOGY, HINDU COLLEGE,
Guntur, from 20/06/2022 to 20/07/2022. We wish you all the best in his/her future
endeavors.

HOD

Head
Department of Biomedical Sciences
Hindu College, Guntur.

DIRECTOR

DIRECTOR
Sciences & Allied Courses,
Hindu College
Amaravathi Road Campus