

Biotechnology Practical Paper 1

COURSE TITLE	CELL BIOLOGY & INTRODUCTION TO GENETICS
COURSE CODE	24IBT1(P)
COURSE CREDITS	03
TOTAL CONTACT HOURS	42 Hours
DURATION OF ESE	3 Hours
CONTINUOUS INTERNAL ASSESSMENT (CIA)	10Marks
END SEMESTER EXAMINATION (ESE)	40 Marks

Experiments

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| 1) Study and maintenance of compound microscope. | 1Unit |
| 2) Use of Micrometer and calibration, measurement of onion epidermal and yeast cells. | 2 Units |
| 3) Study of mitosis in onion root tips. | 1 Unit |
| 4) Study of meiosis in onion flower buds / grass hopper testis. | 1Unit |
| 5) Mounting of polytene chromosomes. | 1 Unit |
| 6) Buccal smear - Barr bodies | 1 Unit |
| 7) Karyotype analysis - Human -Human-Normal and Abnormal - Down and Turner's syndromes | 2 Unit |
| 8) Vital staining of Mitochondria | 1 Unit |
| 9) Study of different unicellular organisms in different water Samples | 1 Unit |
| 10) RBC cell count by Haemocytometer | 1Unit |
| 11) Genetic problems based on theory | 1 Units |
| 12) Study of Plasmolysis in Rheo leaf peels | 1 Unit |

References

- 1) Molecular Biology of Cell by Bruce Alberts , Alexander Johnson , Julian Lewis , David Morgan , Martin Raff , Keith Roberts , Peter Walter, 6 th edition, Publisher : Garland science .(2014).
- 2) Fundamentals of Cytology- L. W. Sharp, Publisher: Nabu Press,(2011).
- 3) Cell Biology & Molecular Biology by De Robertis E.D.P., 8th edition ,publisher : Visionias, (2023).

- 4) Cell Biology by C.B Powar, 3rd edition, publisher: Himalaya Publishing House .(2019).
- 5) Basic Genetics by Daniel L. Hartl, subsequent edition , Publisher : Jones & Barlett .(1991)
- 6) Human Genetics and Medicine by CA Clarke , Publisher :Edward Arnold .(1987).
- 7) Principles of Genetics by E.J. Gardener, M.J. Simmons and D.P. Snustad, 8 th edition , Publisher :John Wiley & Son Publications (1991).
- 8) Genetics by P.K.Gupta, 5 th edition ,publisher : Rastogi Publication,(2018).