ST.JOSEPH'S COLLEGE FOR WOMEN (AUTONOMOUS), VISAKHAPATNAM III SEMESTER BIOTECHNOLOGY TIME: 3 Hrs/Week BTH 3751 (2) IMMUNOLOGY AND rDNA TECHNOLOGY Max. Marks: 50 W.e.f 2021-22 Admitted (21AI Batch)

### PRACTICAL SYLLABUS

# **OBJCECTIVE:** To enable the students to

- ➤ Comprehend the concepts of immuno diagnostic tests
- > To enable the students to learn the techniques of Genetic engineering
- Acquire the knowledge on analysis of genetic material

## **COURSE OUTCOMES: Students will**

- **CO1:** Be expertise in analyzing the clinical samples through immunodiagnostic methods.
- **CO2:** Capable to optimize the protocols for analyzing the DNA samples.
- **CO3:** Understand the concepts in multiplication of DNA copies.

## **COURSE:**

- 1. Determination of Blood Groups
- 2. Pregnancy test
- 3. Widal test
- 4. Ocuteroloney immunodiffusion
- 5. Radial immune diffusion
- 6. ELISA
- 7. Production of antibodies (theory exercise)
- 8. Bleeding, separation of serum and storage
- 9. Lymphoid organs (theory exercise)
- 10. Isolation of plasmid DNA (alkaline lysis method)
- 11. Analysis of plasmid DNA by Agarose gel electrophoresis
- 12. Southern blotting (theory exercise)
- 13. PCR Amplification (theory exercise)

## **REFERENCES:**

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- 3. Immuno diagnostics, 1996, By S.C. Rastogi, Publ: New Age
- 4. Introduction to Immunology- 2002, C. V. Rao- Narosa Publishing House
- 5. Textbook of Biotechnology 2007, By H.K. Das (Wiley Publications)
- 6. Principles of Gene Manipulation 7<sup>th</sup> edition, 2006, By R.W. Old & S.B. Primrose, Publ: Blackwell
- 7. Molecular Biology & Biotechnology- 1996, By H.D. Kumar, Publ: Vikas

- 8. Molecular Biotechnology 4<sup>th</sup> edition, 2010, G.R. Click and J.J. Pasternak, Publ: Panima
- 9. Brown TA. (2006). Gene Cloning and DNA Analysis. 5th edition. Blackwell Publishing, Oxford, U.K.
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- 11. Glick, B.R., Pasternak, J.J. (2003). Molecular Biotechnology- Principles and Applications of recombinant DNA. ASM Press, Washington

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