a) Title of the concept:

**ENHANCING STUDENTS’ COMPETENCY TO CLEAR CSIR-JRF/NET IN CHEMISTRY UNDER CLUSTER COLLEGE CONCEPT**

b) Background of the concept:

Development of national and global competency among the students at different levels in their discipline has become the need of the present higher education scenario. In science disciplines, it is imperative that the curriculum has to be designed and delivered in order for the students to develop competency to successfully complete national level examinations such as JAM, GATE, CSIR– JRF/NET. After post-graduation, the gateway to pursue research in premier institutions of India is by securing a good score in GATE and CSIR-JRF examinations. While GATE is conducted once (February), CSIR-JRF examination can be taken twice (June and December) in a year. A systematic and structured preparation for these exams can surely develop a good competency among students to clear the exams. The role of teachers as subject experts to prepare and train the students towards such examinations is very important.

In chemical sciences discipline, the subject experts can be from different areas such as Physical chemistry, Organic Chemistry, Inorganic Chemistry and other specialisations. Teachers who have handled the subjects for more than a decade with a passion towards such competency development programs can share their knowledge resources with those aspiring students.

In this backdrop, the Chemistry Departments of AyyaNadarJanakiAmmal College (ANJAC), Sivakasi and Lady Doak College (LDC), Madurai have evolved under joint venture an exclusive CSIR-JRF/NET coaching program for the M.Sc. Chemistry students in colleges situated in and around Madurai and Sivakasi. The knowledge and infrastructure resources from different colleges can be effectively utilised through a cluster college concept for this venture.

c) Key Objectives of the Programme:

- to develop an aptitude among M.Sc. Chemistry students to clear CSIR-JRF examinations
- to enable them to become nationally competent to pursue research in premier institutions in India
- to enhance the pass percentage in CSIR-NET/JRF exam from the southern part of Tamilnadu
to provide an opportunity for the students and faculty members in chemistry discipline of various colleges to interact and share their knowledge resources

d) Brief outline of the program:

Following are the stepwise plans for the successful conduct of the program:

- A cluster of higher education institutions will be formed with ANJAC and LDC as the Key partners of the program.
- Dr. P. Sivasamy, former Professor of Chemistry, ANJAC will be the Mentor for the program.
- Two interested staff members from ANJAC and LDC will be the program coordinators.
- Colleges from two nearby districts will be selected to form the cluster. The two districts selected for this program are Madurai and Virudhunagar where LDC and ANJAC are located.
- Two colleges from each district will act as the nodal centres in their respective area. The college managements of ANJAC and VHNSN College in Virudhunagar and LDC and The Madura College in Madurai have accepted to be the nodal centres in the respective districts.
- All the participating colleges will be the members of the cluster.
- Colleges with M.Sc. Chemistry program can participate in this program.
- The program duration will be from July to April in an academic year.
- Motivated II M.Sc. and M.Phil Chemistry students of all participating colleges can undergo this program. A maximum of fifty students representing each participating college will be selected and registered for the program based on a screening test.
- Subject experts can be from nodal centres, member colleges and special invitees also.
- The classes will be organised on non-working Saturdays or Sundays in any one of the four nodal centres alternatively.
- Four sessions for a day, each with duration of one and a half an hour, with two resource persons will be planned either on Saturdays or Sundays of a month depending upon the convenience of the nodal centres and resource person.
- Students have to commute between these four centres depending upon the availability of the resource person.

e) Role and Responsibilities of the cluster colleges:

KEY PARTNERS: Departments of Chemistry of ANJAC and LDC will

1. Identify the subject experts to conduct the classes.
2. Conduct an online screening test every year to select the best fifty students for the program from cluster colleges.
3. Create and launch an online forum (in LDC website) for all the members involved in the cluster program (Staff, Students and subject experts) to interact. (Every member of the cluster will be given a separate user id and password to log in).
4. Aid / arrange financial support for the conduct of the program.
5. Contact the subject experts, prepare the calendar of activities for every month and upload it in the online forum.

**NODAL CENTRES**: The College Managementsof LDC, ANJAC, VHNSN and The Madura College will

1. Provide the infrastructure (classroom and other facilities such as overhead or LCD projectors, if necessary) to conduct the classes.

Departments of Chemistry of ANJAC, LDC, VHNSN and The Madura College will

2. Identify the resource person for different areas of specialisation
3. Organise the classes in their premises every month as per the schedule
4. Help for the smooth conduct of the program in their respective district

**MEMBER COLLEGES**: The Heads of the Department of Chemistry of all the member colleges will

1. Identify the motivated students of their Department to appear for the screening test.
2. Guide the selected students appropriately as per the schedule uploaded in the online forum.
3. Ensure students attend the classes regularly and follow their attendance.
4. Provide subject experts from their department to handle classes.

**STUDENT PARTICIPANTS**: All the selected students have to

1. Be committed to the program.
2. Be regular in their attendance.
3. Travel among the four nodal centres to attend the class as per the schedule.
4. Take care of their travel expenses and lunch.