Minutes of the Special Meeting of Board of Studies held on 16.09.2017

Minutes of the Special Meeting of Board of the Studies of the Department of Agricultural Microbiology held on September 16, 2017 at 12.00 Noon, in the office of the Chairman. The following were present:

1. Professor Md. Saghir Khan
   Chairman
   Department of Agricultural Microbiology
   A.M.U., Aligarh

2. Professor P.Q. Rizvi
   Dean
   Faculty of Agricultural Sciences
   A.M.U., Aligarh

3. Professor Qayyum Husain
   (Assigned Member)
   Department of Biochemistry
   Faculty of Life Sciences
   A.M.U., Aligarh

4. Professor Riyazuddeen
   (Assigned Member)
   Department of Chemistry
   A.M.U., Aligarh

5. Professor Abdul Malik
   Department of Agricultural Microbiology
   A.M.U., Aligarh

6. Professor Iqbal Ahmad
   Department of Agricultural Microbiology
   A.M.U., Aligarh

7. Dr. Shams Tabrez Khan
   Associate Professor
   Department of Agricultural Microbiology
   A.M.U., Aligarh

8. Dr. Almas Zaidi
   Assistant Professor (Contractual)
   Department of Agricultural Microbiology
   A.M.U., Aligarh
Before taking up the agenda, Ex-Chairman, Prof. Iqbal Ahmad on his behalf and on behalf of all members of B.O.S welcomed to the sitting Chairman, Prof. Md. Saghir Khan to take the responsibilities of the office of the Chairman, Department of Agricultural Microbiology. Then present Chairman welcomed all the members of the Board of Studies and appreciated the services rendered by the outgoing Chairmen, Prof. Abdul Malik and Prof. Iqbal Ahmad for the Department of Agricultural Microbiology. Further, the Chairman welcomed and introduced the new faculty members, Dr. Shams Tabrez Khan and Dr. Almas Zaidi who have recently joined the Department and hope that the presence of these faculty members will bring new dimensions in teaching and research of the Department.

Item # 1 :

Considered and approved the syllabus of Ph.D. entrance test for the session 2017-18 in the light of the letter XM/RU/F.No. 009/17/20 dated 27.07.2017. The syllabus for Ph.D. admission test is as under:

**Research Methodology: (40 Marks, Multiple Choice Questions)**

Concept of research, hypothesis, theory and principle, approaches to identify critical gap in research, research aptitude. Preparation of buffers, reagent solutions and their storage. Sampling, transport and storage of research samples (soil, water, plant and other materials) for microbiological and other analysis. Growth control and sterilization techniques in microbiology. Basic microbiological techniques used in isolation, cultivation and enumeration. Types of culture media and its preparation, methods of microbial control and food preservation. Morphological examination and observation by Gram staining and microscopy: bright field microscopy, dark field microscopy; fluorescence microscopy, phase contrast and electron (transmission and scanning) microscopy. Construction of phylogenetic tree using NCBI data and Blast analysis. Isolation and characterization of biomolecules (DNA, RNA, Protein etc.), Detection of secondary metabolites, Principle and applications of colorimetry and spectrophotometry, ultracentrifugation, ion exchange chromatography, molecular sieve chromatography, HPLC, Atomic Absorption Spectroscopy, Gas Chromatography. Agarose Gel electrophoresis, PAGE, Flow cytometry, DNA microarray, PCR, RFLP, RAPD, ARDRA, RISA, and FISH. Recombinant DNA technology, tissue culture techniques employed for development and maintenance of plant cultures. Fundamentals and application of immunological techniques: Immunediffusion, ELISA, RIA, immunofluorescence and immune-electrophoresis, Methods of biofertilizer and biopesticide production. Statistical methods used for data analysis and presentation; measures of central tendency; measure of disparity: mean deviation, standard deviation, standard error, coefficient of variation; probability theory and distributions. Ethical issues and plagiarism in research: Concept and control, search engines used in research (Google, PubMed, ResearchGate, ISI web of knowledge, Science Direct etc.)

**Subject Specific (Agricultural Microbiology) : (10 Marks, Multiple Choice Questions + 30 Marks, Descriptive type questions)**

History and development of microbiology, cultural and biochemical properties of Chlamydia, Rickettsia, Mycoplasma, Actinomycetes and fungi. Life cycle and importance of protozoa and algae. General characteristic features of plants, animal and bacterial viruses. The bacterial cytology, classification and nomenclature of microorganism, diseases and resistance to disease in plant and animals: Common causative agent and their pathogenicity, methods of control of microorganisms. Soil microorganisms, biogeochemical cycling of elements including N, C, S and P. Microbial transformation of Iron,

Then the meeting came to an end with vote of thanks by Chairman to all members.

Sd/-

(Prof. Md. Saghir Khan)
Chairman
Department of Agricultural Microbiology
A.M.U., Aligarh