

# ગુજરાત યુનિવર્સિટી

૩૩૬-૫૫૨-૭-૨૦૧૧

નં.એકેડેમિક/ ૮૭ /૨૦૧૧

૨૪/૦૯/૨૦૧૧

તા.૧૩/૦૭/૨૦૧૧

પરિપત્ર : ૨૩

આથી માન.કુલપતિશ્રીના આદેશાનુસાર જણાવવાનું કે, M. Sc. Biochemistry વિષયના અભ્યાસક્રમ (Semester - I & III)માં જરૂરી સુધારા આ સાથે સામેલ છે જેનો અમલ વર્ષ ૨૦૧૧-૧૨થી કરવાનો રહેશે, જેની નોંધ લેવા વિનંતી.

આપનો વિશ્વાસુ

  
કા.કુલસચિવ

બિડાણ-ઉપર મુજબ .

પ્રતિ

૧. Co-ordinator, Department of Biochemistry, University School of Sciences, Gujarat University, Ahmedabad-9
૨. પરીક્ષા નિયામકશ્રી. પરીક્ષા વિભાગ, ગુજરાત યુનિવર્સિટી, અમદાવાદ-૯.
- ✓૩. ગ્રંથપાલશ્રી, ગુજરાત યુનિવર્સિટી ગ્રંથાલય, ગુજરાત યુનિવર્સિટી, અમદાવાદ-૯.
૪. વિભાગીય વડાશ્રી, પી.જી.વિભાગ, ગુજરાત યુનિવર્સિટી, અમદાવાદ-૯.
૫. શ્રી હરીશભાઈ ભારદ્રાજ, પરીક્ષા વિભાગ, ગુજરાત યુનિવર્સિટી. અમદાવાદ-૯
૬. સંબંધિત ટેબલ કલાર્ક, પરીક્ષા વિભાગ, ગુજરાત યુનિવર્સિટી, અમદાવાદ-૯
૭. શ્રીમતી ડા. વી. ચારી., સ્કુલ ઓફ કોમર્સ, ગુજરાત યુનિવર્સિટી. અમદાવાદ-૯

## **BCH 404 PRINCIPLES OF MICROBIAL SCIENCES**

- UNIT 1 Introduction to Microbiology and Microorganisms**  
Scopes and Avenues of Microbiology  
Historical developments in Microbiology  
General Characteristics of major group of Microorganisms  
a. Bacteria      b. Rickettesia      c. Chlamydia  
d. Mycoplasma    e. Fungi      f. Viruses    g. Sub viral  
entities like Prions, Viroids, Virusoids and Satellite RNAs.
- UNIT 2 Microbial Taxonomy**  
Importance and systems of Classification  
Status of microorganisms into kingdoms  
Basic principles of nomenclature and classification  
Criteria used for classification and identification of  
microorganisms  
Genetic approaches used for Microbial taxonomy
- UNIT 3 Morphology, Reproduction and Significance**  
Bacteria : Staphylococcus (Gram positive) and Eschericheria  
(gram negative )as model examples.  
Moulds: Rhizopus, Penicillium, Puccinia as model examples  
Yeasts: Saccharomyces as model examples  
Bacterial viruses: Coliphage T4 and lambda phage as examples  
Animal viruses: Adenovirus, Influenza virus as model examples  
Plant viruses: TMV as model examples.
- UNIT 4 Microbial Physiology and Genetics :**  
Modes of uptake of nutrients in microorganisms, Nutritional requirements  
and Nutritional classification of microorganisms.  
An overview of microbial metabolism  
Microbial Growth:  
Growth in prokaryotes and modes of cell division  
Mathematical nature and expression of growth,  
Normal growth curve of microbial population and Diauxic growth  
Continuous cultivation of microorganisms,  
Methods of measurement of microbial growth  
Effect of environment of on microorganisms  
General principles of Microbial Genetics:  
DNA and its replication  
Bacterial plasmids and transposable elements  
Recombination methods: Transfection, Transduction, Conjugation,  
Parasexually.

**SEM- III**  
**BCH 504**  
**IMMUNOLOGY**

- UNIT 1      Basic Immunology  
                  History and Significance  
                  Immunity and its types  
                  Immune System, Cell and Organs involved  
                  Complement System  
                  Cytokines and their significance  
                  Cancer and Immune response (Tumor Immunology)
- UNIT 2      Basic Immunology II  
                  Antigens : General properties, criteria for antigens, types of  
                  Antigens  
                  Antigenicity MHC, HLA complex  
                  Immunoglobulins : Basic structure and types  
                  Immunogenetics : Genetic basis of clonal selection and generation of  
                  antibody diversity  
                  In vivo antigen-antibody interactions.
- UNIT 3      Immunotechnology  
                  In vitro antigen-antibody reactions and diagnostic significance  
                  Agglutination tests, Precipitation and Immunodiffusion tests  
                  Radioimmunoassay , IRMA, ELISA / ELISPOT, RAST  
                  Hybridoma technology applications of monoclonal antibodies  
                  Vaccines and Immunotherapy
- UNIT 4      Dysfunction Immunity  
                  Hypersensitivity Reactions, Tolerance and Autoimmunity  
                  Autoimmune diseases  
                  Immunodeficiency and their consequences  
                  Transplantation immunology,  
                  Hazards of vaccine