Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh (Gujarat)
Outward No. 410
Date :- 06 | 09 | 2021

Microbiology Department
GMERS Medical College
Junagadh,
Date-06/09/2021

To,
The Dean,
GMERS Medical College,
Junagadh

Subject:-Submission of old Syllabus & New Syllabus (Including Paper style & Examination pattern) of 2nd MBBS (Microbiology)

Respected sir,

With the reference to the subject cited above, here we are submitting old Syllabus & New Syllabus (Including Paper style & Examination pattern)of 2nd MBBS (Microbiology).

Please do the needful.

Thanking You

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

Enclosure :-(1) old Syllabus & New Syllabus of 2nd MBBS (Microbiology)

GMERS MC. JUNAGADH
Inward No: 4392
Date: 09/09/21

Scanned with CamScanner

ડિપાર્ટમેન્ટ ઓફ માઇક્રોબાયોલોજી Department OF Microbiology
જી.એમ.ઇ.આર.એસ. મેડિકલ કોલેજ,જુનાગઢGMERS Medical College, Junagadh
પેડ્ડોક રોડ, મજેવડી ગેટ, જુનાગઢ-૩૬૨૦૦૧ (ગુજરાત),
Paddock road, Majewadi gate, Junagadh-362001 (Gujarat)

EXAMINATION PATTERN (old Syllabus)

Examination	Theory		MCQs	Viva	Practical including viva	Internal Assessment		Total
						Theory	Practical	
I Internal Assessment	60		20	20	50	--	--	150
II Internal Assessment	60		20	20	50	--	--	150
Preliminary Examination	Paper I	Paper II	--	20	50	--	--	150
	40	40						
University Examination	Paper I	Paper II	--	15 (Included in theory)	25	15 (Included in theory)	15	150
	40	40						

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

G.M.E.R.S Medical College-Junagadh
Department of Microbiology
Theory Paper-I (Total-40 Marks)

(General Microbiology , Immunology & Bacteriology)

Pattern Of Exam

Section-I

Q-1.Long Questions (10-Mark)

Q-2.Short Notes (any Two) 5X2 (10-Marks)

(a)
(b)
(c)

Section-II

Q-3.Short Notes (any Two) 5X2 (10-Marks)

(a)
(b)
(c)

Q-4.Very shorts Answer (Any 5) 2X5 (10- Marks)

(a)
(b)
(c)
(d)
(e)
(f)

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

G.M.E.R.S Medical College-Junagadh
Department of Microbiology
Theory Paper-II (Total-40 Marks)

(Virology ,Parasitology & Mycology)

Pattern Of Exam

Section-I

Q-1.Long Questions (10-Mark)

Q-2.Short Notes (any Two) 5X2 (10-Marks)

(a)
(b)
(c)

Section-II

Q-3.Short Notes (any Two) 5X2 (10-Marks)

(a)
(b)
(c)

Q-4.Very shorts Answer (Any 5) 2X5 (10- Marks)

(a)
(b)
(c)
(d)
(e)
(f)

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

MICROBIOLOGY

1. Goal:

The broad goal of teaching of undergraduate students in Microbiology is to provide the students an understanding of the natural history of infectious diseases in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community.

2. Objectives

(a) Knowledge

At the end of the course the student shall be able to

- State the infective micro-organism of the human body and describe the host parasite relationship
- List the pathogenic micro-organisms (bacteria, viruses, parasites, fungi) and describe the pathogenesis of the disease produced by them.
- State or indicate the modes of transmission of pathogenic and opportunistic organisms and their sources, including insects vectors responsible for transmission of infection
- Describe the mechanisms of immunity to infections.
- Acquire knowledge on suitable antimicrobial agents for treatment of infections and scope of immunotherapy and different vaccines available for prevention of communicable diseases.
- Apply methods of disinfection and sterilization to control and prevent hospital and community acquired infections.
- Recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.

(b) Skills

At the end of the course the student shall be able to

- Plan and interpret laboratory investigations for diagnosis o f infectious diseases and to correlate the clinical manifestations with the etiological agent.
- Identify the common infectious agents with the help of laboratory procedures and use antimicrobial sensitivity tests to select the suitable antimicrobial agents,
- Perform commonly employed bed-side tests for detection of infectious agents such as blood film for malaria, filaria, Gram staining and acid fast bacilli (AFB) staining and stool sample for ova, cyst and larva etc.
- Use the correct method of collection, storage and transport of clinical materials for microbiological investigations.

(c) Integration

- The student shall understand infectious diseases o f national importance in relation to the clinical, therapeutic and preventive aspects

Syllabus

Theory

(a) General microbiology

- Introduction and importance of subject History and taxonomy of Microorganism
- Morphology and structure of bacteria
- Physiology of bacteria including growth requirement of bacteria, their

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital

reproduction, viability and destruction, growth curve, metabolism etc.

- Sterilization, Disinfection and Antiseptics
- Bacterial Genetics: Includes basic principle of molecular microbiology, mechanism of drug resistance in bacteria.
- Infection: Factors influencing the production of infection. Host, bacterial and environment factors.
- Biomedical waste management
- Normal bacterial flora

(b) Immunology

- Immunity. Host - parasite relationship. Innate and Acquired immunity.
- Antigen and Antibody: With reference to their structure, function, classification.
- Antigen-Antibody Reaction : General principles Different types of Ag-Ab reactions, e.g. Agglutination, precipitation, complement fixations. Neutralization, Immunofluoresence, RIA, ELISA, Western blot and other blot assay, Flow cytometry etc.
- Complement: Classification, structure and function.
- Immune response, immunocompetent cells and immune system.
- Hypersensitivity and Autoimmunity: Their classification and mechanism-with clinical examples
- Immuno-prophylaxis of various diseases, vaccine.
- Tumour Immunity and Transplantation Immunity.
- Immunodeficiency

(c) Systemic bacteriology

A study of medically important bacteria in relation to their morphology, classification, biological and cultural characters, pathogenicity, laboratory methods for their detection, methods of their control and prevention. Their list is as follows.

- Gram positive cocci : Staphylococcus, Streptococcus, Pneumococcus
- Gram negative cocci . Neisseria : Meningococcus & *Gonococcus*
- Gram Negative cocco - bacillus : Haemophilis , Brucella , Bordetella, Yersinia, Acinetobacter, Legionella & others.
- Gram positive bacillus
  - Aerobic: Corynebacterium
    - Mycobacterium: M. Tuberculosis
      - M. Leprae
      - Non-tuberculous Mycobacteria
    - Bacillus species
    - Listeria monocytogens
  - Anaerobic : Clostridium species
- Gram negative bacillus :
  - Enterobacteriacae : E coli, Klebsiella, Proteus, Salmonella, Shigella
  - Vibrios, Pseudomonas, Campylobacter, Helicobacter
- Spirochaete
- Rickettsiae
- Mycoplasma, Chlamydiae
- Actinomycetes, Nocardia

(d) Mycology

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

Study of medically important fungi in reference to their identification, pathogenesis, and laboratory methods for their detection.

(e) Virology

- General properties of viruses
- Laboratory methods for diagnosis of viral infection
- Study of morphology, growth requirement, pathogenicity, epidemiology, immunoprophylaxis, viral immunity and laboratory methods for agents of the diseases caused by some of important viruses.
    - Pox viruses, Herpes viruses, Orthomyxo and Paramyxo, Picorna viruses, Hepatitis virus, Retro viruses, Rhabdo viruses, Arbovirus, slow and Oncogenic viruses

(f) Parasitology

A detailed study in relation to geographic distribution, habitat, morphology, life cycle, pathogenesis, laboratory investigation and preventive measures of following parasites:

- Protozoa:
    - Sarcomastigophora
    - Apicomplexa
    - Ciliophora
    - Microspora
- Metazoa:
    - Platyhelminths
        - Cestodes
        - Tremetodes
    - Nematheminths
        - Intestinal nematodes
        - Tissue nematodes
- Arthopods : A study of arthropods which have important role in human disease Opportunistic Infections.
- Diagnostic procedures for parasitology

(g) Applied/clinical microbiology

- Laboratory diagnosis of various clinical syndromes.
- Healthcare associated infection (Nosocomial infection)
- Bacteriological examination of food, water, Milk etc.

Practical

Practical exercises will cover the practical demonstration of various methods for diagnosis of bacterial, viral, fungal and parasitic infections. A detailed list is as follows

(a) General microbiology:

- Microscope & Micrometry
- Morphology of bactena
- Different staining methods for bacteria
- Growth requirements of bacteria
- Different culture media
- Sterilization and disinfection
- Isolation and identification of bacteria
- Antibiotic Susceptibility testing
- Common serological reaction

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh

- Conventional methods
- Rapid tests
- Recent advances
- Laboratory Animals, their use, care.

(h) Systemic bacteriology & Virology

- Staphylococcus
- Streptococcus & Pneumococcus
- Neisseria
- C. diphtheriae
- Enterobacteriacae
- Pseudomonas
- V Cholera
- Mycobacteria
- Bacillus
- Clostridia
- Spirochaetes
- Rickettsia, Chlamydia, Mycoplasma
- Viruses – Morphology, Classification & Laboratory diagnosis of viral infection

Parasitology

- Introduction to parasitology
- Sarcomastigophora
- Apicomplexa & Ciliophora – Peripheral smear for malarial parasites
- Microspora
- Cestodes
- Trematodes
- Nematodes
- Arthropods
- Examination of stool for study of different ova & cysts of parasites.

Professor & Head
Department of Microbiology
G.M.E.R.S. Medical College & Hospital
Junagadh