

<p>પ્રાથમિક કસોટીનો અભ્યાસક્રમ</p> <p>પ્રશ્નપત્ર-૧</p> <p>માધ્યમ: ગુજરાતી</p> <p>કુલ ગુણ :૧૦૦</p>	
૧	ભારતની ભૂગોળ- ભૌગોલિક, આર્થિક, સામાજિક, કુદરતી સંસાધન અને વસ્તી અંગેની બાબતો- ગુજરાતના ખાસ સંદર્ભ સાથે
૨	ભારતનો સાંસ્કૃતિક વારસો- સાહિત્ય, કલા, ધર્મ અને સ્થાપત્યો- ગુજરાતના ખાસ સંદર્ભ સાથે
૩	ભારતનો ઇતિહાસ - ગુજરાતના ખાસ સંદર્ભ સાથે
૪	ભારતની અર્થવ્યવસ્થા અને આયોજન
૫	<p><u>ભારતીય રાજનીતિ અને ભારતનું બંધારણ:</u></p> <p>(૧) આમુખ</p> <p>(૨) મૂળભૂત અધિકારો અને ફરજો</p> <p>(૩) રાજ્યનીતિના માર્ગદર્શક સિદ્ધાંતો</p> <p>(૪) સંસદની રચના</p> <p>(૫) રાષ્ટ્રપતિની સત્તા</p> <p>(૬) રાજ્યપાલની સત્તા</p> <p>(૭) ન્યાયતંત્ર</p> <p>(૮) અનુસૂચિત જાતિ, અનુસૂચિત જનજાતિ અને સમાજના પછાત વર્ગો માટેની જોગવાઈઓ</p> <p>(૯) એટર્ની જનરલ</p> <p>(૧૦) નીતિ આયોગ</p> <p>(૧૧) પંચાયતી રાજ</p> <p>(૧૨) નાણા પંચ</p> <p>(૧૩) બંધારણીય તથા વૈધનિક સંસ્થાઓ- ભારતનું ચૂંટણી પંચ, સંઘ લોક સેવા આયોગ, રાજ્ય લોક સેવા આયોગ, કોમ્પ્રોલર એન્ડ ઓડિટર જનરલ; કેન્દ્રીય સતર્કતા આયોગ, લોકપાલ તથા લોકાયુક્ત અને કેન્દ્રીય માહિતી આયોગ</p>
૬	સામાન્ય બૌદ્ધિક ક્ષમતા કસોટી
૭	સામાન્ય વિજ્ઞાન, પર્યાવરણ અને ઇન્ફર્મેશન એન્ડ કોમ્યુનિકેશન ટેકનોલોજી
૮	ખેલ જગત સહિત રોજબરોજના પ્રાદેશિક, રાષ્ટ્રીય અને આંતરરાષ્ટ્રીય મહત્વના બનાવો

Syllabus of Preliminary Test Paper-1	
Medium: Gujarati	Total Marks- 100
1	Geography of India- Physical, Economic, Social, Natural Resources and population related topics- with special reference to Gujarat
2	Cultural heritage of India- Literature, Art, Religion and Architecture- with special reference to Gujarat
3	History of India with special reference to Gujarat
4	Indian Economy and Planning
5	<u>Indian Polity and the Constitution of India:</u> (1) Preamble (2) Fundamental Rights and Fundamental Duties (3) Directive Principles of State Policy (4) Composition of Parliament (5) Powers of the President of India (6) Powers of Governor (7) Judiciary (8) Provisions for Scheduled Castes, Scheduled Tribes and backward classes of the society (9) Attorney General (10) NITI Aayog (11) Panchayati Raj Institutions (12) Finance Commission (13) Constitutional and Statutory Bodies: Election Commission of India, Union Public Service Commission, State Public Service Commission, Comptroller and Auditor General; Central Vigilance Commission, Lokpal and Lokayukta, Central Information Commission
6	General Mental Ability
7	General Science, Environment and Information & Communication Technology
8	Daily events of Regional, National and International Importance including Sports

**Syllabus for the preliminary test for the recruitment on the post of  
Microbiologist (Specialist Service), Class I in Health and Medical  
Services**

**Marks – 200**

**Questions - 200**

**Medium - English**

**1. General Microbiology**

History of microbiology, Microscopy, Bio-safety including universal containment, personal protective equipment for biological agents, Physical and biological containment, Isolation precautions including standard precautions and transmission based precautions. Sterilization, disinfection and lyophilisation. Morphology of bacteria and other microorganisms. Nomenclature and classification of microorganisms. Normal flora of human body. Growth and nutrition of bacteria. Bacterial metabolism. Bacterial toxins. Bacteriocins. Microbiology of hospital environment. Microbiology of air, milk and water. Host-parasite relationship. Antimicrobial agents and mechanisms drug resistance. Bacterial genetics and bacteriophages. Molecular genetics relevant for medical microbiology. Quality assurance and quality control in microbiology. Accreditation of laboratories

**2. Immunology**

Components of immune system. Innate and acquired immunity. Cells involved in immune response. Antigens. Immunoglobulins. Mucosal immunity. Complement. Antigen and antibody reactions. Hypersensitivity. Cell mediated immunity. Cytokines. Immunodeficiency. Auto-immunity. Immune tolerance. MHC complex. Transplantation immunity. Tumor immunity. Vaccines and immunotherapy. Measurement of immunological parameters. Immunological techniques. Immunopotential and immunomodulation.

### 3. Systematic bacteriology

Isolation and identification of bacteria. Gram positive cocci of medical importance including *Staphylococcus*, *Micrococcus*, *Streptococcus*, *anaerobic cocci* etc. Gram negative cocci of medical importance including *Neisseria*, *Branhamella*, *Moraxella* etc. Gram positive bacilli of medical importance including *Lactobacillus*, *Coryneform organisms*, *Bacillus* and *aerobic bacilli*, *Actinomyces*, *Nocardia*, *Actinobacillus* and other *actinomycetales*, *Erysipelothrix*, *Listeria*, *Clostridium* and other spore bearing anaerobic bacilli etc. Gram negative bacilli of medical importance including *Vibrios*, *Aeromonas*, *Plesiomonas*, *Haemophilus*, *Bordetella*, *Brucella*, *Gardnerella*, *Pseudomonas* and other *non-fermenters*, *Pasteurella*, *Francisella*, *Bacteroides*, *Fusobacterium*, *Leptotrichia* and other *anaerobic gram negative bacilli* etc. *Helicobacter*, *Campylobacter*, *Calymmatobacterium*, *Streptobacillus*, *Spirillum* and miscellaneous bacteria. *Enterobacteriaceae*. *Mycobacteria*. *Spirochaetes*. *Chlamydia*. *Mycoplasmatales*; *Mycoplasma*, *Ureaplasma*, *Acholeplasma* and other *Mycoplasmas*. *Rickettsiae*, *Coxiella*, *Bartonella* etc.

### 4. Mycology

General characteristics and classification of fungi. Morphology and reproduction of fungi. Isolation and identification of fungi. Tissue reactions to fungi Yeasts and yeast like fungi of medical importance including *Candida*, *Cryptococcus*, *Malassezia*, *Trichosporon*, *Geotrichum*, *Saccharomyces* etc. Mycelial fungi of medical importance including *Aspergillus*, *Zygomycetes*, *Pseudallescheria*, *Fusarium*, *Piedra*, other *dematiaceous hyphomycetes* and other *hyalohyphomycetes* etc. Dimorphic fungi including *Histoplasma*, *Blastomyces*, *Coccidioides*, *Paracoccidioides*, *Sporothrix*, *Penicillium marneffei* etc. *Dermatophytes*. Fungi causing Mycetoma, Chromoblatomycosis, Occulomycosis and Otomycosis. *Pythium insidiosum*. *Prototheca*. *Pneumocystis jirovecii* infection. *Rhinosporidium seeberi* and *Lacazia loboi* (*Loboa loboi*). Laboratory contaminant fungi.

Mycetism and mycotoxicosis. Antifungal agents and *in vitro* antifungal susceptibility tests.

## 5. Virology

General properties of viruses. Classification of viruses. Morphology: Virus structure. Virus replication. Isolation and identification of viruses. Pathogenesis of viral infections. Genetics of viruses. DNA viruses of medical importance including Pox viruses, Herpes viruses, Adenoviruses, Hepadna virus, Papova and Parvo viruses etc. RNA viruses of medical importance including Enteroviruses, Toga viruses, Flavi viruses, Orthomyxo viruses, Paramyxo viruses, Reo viruses, Rhabdo viruses, Arena viruses, Bunya viruses, Retro viruses, Filo viruses, Human immunodeficiency virus, Arbo viruses, Corona viruses, Calci viruses etc. Slow viruses including prions. Unclassified viruses. Hepatitis viruses. Viriods, prions. Vaccines and anti-viral drugs.

## 6. Parasitology

General characters and classification of parasites. Methods of identification of parasites. Protozoan parasites of medical importance including *Entamoeba*, *Free living amoebae*, *Giardia*, *Trichomonas*, *Leishmania*, *Trypanosoma*, *Plasmodium*, *Toxoplasma*, *Sarcocystis*, *Cryptosporidium*, *Microsporidium*, *Cyclospora* *Isospora*, *Babesia*, *Balantidium*, etc. Helminthology of medical importance including those belonging to Cestoda (*Diphyllobothrium*, *Taenia*, *Echinococcus*, *Hymenolepis*, *Dipylidium*, *Multiceps* etc.), Trematoda (*Schistosomes*, *Fasciola*, *Fasciolopsis*, *Gastrodiscoides*, *Paragonimus*, *Clonorchis*, *Opisthorchis* etc.) and Nematoda (etc.) Entomology: common arthropods and other vectors viz. mosquito, sand fly, ticks, mite, cyclops, louse, myasis. Anti-parasitic agents.

## **7. Applied Microbiology**

Epidemiology of infectious diseases. Antimicrobial prophylaxis and therapy. Hospital acquired infections. Management of biomedical waste. Investigation of an infectious outbreak in hospital and community. Infections of various organs and systems of human body viz. respiratory tract infections, urinary tract infections, central nervous system infections, congenital infections, reproductive tract infections, gastrointestinal infections, hepatitis, pyrexia of unknown origin, infections of eye, ear and nose, septicaemia, endocarditis, haemorrhagic fever etc. Opportunistic infections Sexually transmitted diseases Vaccinology: principles, methods of preparation, administration of vaccines, types of vaccines. Information technology (Computers) in microbiology. Automation in Microbiology. Molecular techniques in the laboratory diagnosis of infectious diseases. Statistical analysis of microbiological data and research methodology. Animal and human ethics involved in microbiological work. Safety in laboratory and Laboratory management

## **8. Current Trends and Recent Advancements in Microbiology.**