PG DIPLOMA IN ENVIRONMENTAL HEALTH & HYGINE
(Non-Semester)
(With effect from the academic year 2013-14)

Eligibility for the Course

Candidates for admission to PG Diploma In Environmental Health & Hygine could posses a Bachelors degree in Zoology, Botany, Chemistry, Biochemistry, Microbiology Biotechnology/Environmental/ Animal/plant Food sciences, Dietetics & Nutrition, Bioinformatics, BE in Chemical Engineering & Biotechnology; B.Tech in Biotechnology & Bioinformatics/Nanotechnology; BDS; MBBS; B.Sc in Agri/Agri Biotechnology;B.V.Sc., B.F.Sc., Pharm and BPT.

Duration of the Course

One year PG Diploma In Environmental Health & Hygine course non-semester for One Year duration

Examination

All the theory paper are of 3hours duration each for maximum of 100 marks with passing minimum of 50 marks
Practical examinations are also for 3 hours duration for a maximum of 100 marks and passing minimum of 50 marks.

Question Paper Pattern

Maximum marks: 100 Time: 3 hours

Part A (5 x 3 = 15)

Five short answer questions (One question from each unit)

Part B (5 x 8 = 40)

Paragraph questions (Total questions 8, out of which answers are to be given for any five questions;)

Part C (3x 15 = 45)

Total questions 5, out of which answers are to be given for any Three questions;
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<thead>
<tr>
<th>S.No</th>
<th>Theory &amp; Practicals</th>
<th>Maximum Marks</th>
<th>Minimum Marks</th>
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<tbody>
<tr>
<td>1.</td>
<td>Basics of Environmental Science</td>
<td>100</td>
<td>50</td>
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<td>2.</td>
<td>Environmental Microbiology</td>
<td>100</td>
<td>50</td>
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<td>3.</td>
<td>Environment Impact Assessment &amp; Waste Management</td>
<td>100</td>
<td>50</td>
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<td>4.</td>
<td>Environmental Molecular Epidemiology</td>
<td>100</td>
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<td>P1</td>
<td>Practical –I Environmental Diagnostics</td>
<td>100</td>
<td>50</td>
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<tr>
<td>P2</td>
<td>Practical –II Molecular Diagnostics</td>
<td>100</td>
<td>50</td>
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**PAPER – 1- BASICS OF ENVIRONMENTAL SCIENCE**

**UNIT - I:**

Environment: Definition, scope and importance Environmental Factors, Environment and its segments – atmosphere, hydrosphere, lithosphere and biosphere.

**UNIT- II:**


**UNIT- III:**

Hydrosphere : Importance and characteristics, Zones of hydrosphere, Different kinds of sources of water – Ice-cap, glaciers, oceans, rivers, lakes, pond and ground water; Inventory of World’s water, Hydrologic cycle, Water as a resource, Water resources of soil profile in India. Lithosphere: Earth’s layers, Earth’s crust and its composition, Different kinds of rocks and minerals, Major landforms, Soil – composition and classification, Soil horizon; Major physiographic divisions of India

**UNIT- IV:**

Introduction to Environmental Pollution: Definition, causes and types – air, water, soil, noise, radiation and thermal. Air Pollution: Causes of air pollution, Some important pollutants of air their sources and effects on living and non-living organisms; Photochemical Smog - Definition, formation, types and effects; vehicular pollution; Case study – Bhopal gas tragedy.

**UNIT- V:**

Monitoring and control of Air pollution: Monitoring of Air Quality Parameters – Methods, Equipments, Units and Standards; Air pollution control techniques.

**REFERENCES:**

2. Environmental Pollution and Control – S.A. Abbasi
UNIT-I: MICROORGANISMS


UNIT – II: MICROBIAL ENVIRONMENTS


UNIT –III : DEDUCTION, ENUMERATION AND IDENTIFICATION


UNIT – IV: REMEDIATION OF ORGANIC AND METAL POLLUTANTS


UNIT – V: WATER AND FOOD BORNE PATHOGENS

Environmentally transmitted pathogens: Bacteria, Parasitology, Viruses – Fecal coliforms and E. Coli - Bacteriophage – wastewater treatment and Disinfection: Primary, Secondary Tertiary treatment – Oxidation ponds – Drinking water treatment

REFERENCES:


2. Park and Park, Social and Preventive Medicine

PAPER -3 ENVIRONMENTAL IMPACT ASSESSMENT AND WASTE MANAGEMENT

UNIT - I

Types of waste- Solid - Semi solid - Biodegradable and Non degradable wastes - Chemical wastes- Sources of Pollution of surface and Ground water – Water Pollution Parameter – Physical , Chemical, Biological –Typical of water pollutants –Effects of water pollution water bodies – aquatic life – vegetation – Human Health –Control water pollution

UNIT - II


UNIT - III


UNIT – IV


UNIT – V


REFERENCE


UNIT- I


UNIT- II


UNIT- III


UNIT- IV

History and Geography of warm infections; Tapeworms - Schistosomiasis – Filariasis – Vectors and Modes of Transmission – Diagnosis and Detection – Indian status – Global scenario.

UNIT- V

Tools in molecular epidemiology Sociology – PCR – RAPD -PCR-RTPCR-PFGE-16sRNA-16s DNA analysis-Microarray based screening – multilocus enzyme electro s reti (MLET) and multilocus sequence typing (MLST).

REFERENCES:

1. Assessment of Air Pollutant – CO, CO₂ and SO₂

2. Identification of Air Borne diseases

3. Environmental Simulation Software Usage

4. Microbial analysis of Soil.

5. Plasmid DNA extraction (Demo)

**PAPER – 6: PRACTICALS – II ENVIRONMENTAL DIAGNOSTICS**


2. Toxicity testing of drinking water.

3. Testing for coliforms

4. Bacterial DNA extraction.

5. PCR RELP for pathogens (Demo)