

Government of Karnataka



PARA MEDICAL BOARD

Revised Syllabus

of

**II & III Year Diploma in Health
Inspector**

**(Previously first/second year certificate course/
I year DHI /II DHI)**

2017

Second Year Diploma in Health Inspector

(DHI II)

PAPER-I SECTION A

Q P Code : 5111

1	Elementary concepts of applied Anatomy and Physiology.	
2	Concept of health & disease	Concept, definition, Dimension, Positive health, Determinants of health, Indicators of health. Concept of disease, Epidemiological triad, Natural H/O disease, Concept of Prevention and Control, Concept of Modes of Intervention.

Elementary concepts of Anatomy

1. General anatomy
 - a. Basic tissues of body terminology and nomenclature – 3 classes
2. Systemic anatomy
 - a. Locomotor system
 - b. Digestive system – brief description about different parts of the system with brief functional and applied aspects – 3 classes
 - c. Cardiovascular system
 - d. Respiratory system
 - e. Excretory system
 - f. Endocrine system
 - g. Nervous system
 - h. Reproductive system
 - i. Special sense organs
3. Osteology – human skeleton as a whole
4. Histology
 - a. Study of microscopes – 1 class
 - b. Basic techniques in histology – 2 classes
 - c. Study of microscopic anatomy and correlations of the structure of the following – 3 classes
5. Basic tissues

6. Organs – oesophagus, stomach, small intestine, colon, appendix, liver, pancreas, kidney, testis, ovary, uterus and skin.
7. Glands – salivary, endocrine

ELEMENTS OF APPLIED ANATOMY AND PHYSIOLOGY

Understanding of the structure and functions of human body as a foundation to the principles underlying nutrition and disease process.

Practicals:

- models, charts and slides related to the structure and functions of the human body.
 - How to take blood pressure, pulse rate and respiration rate
 - Films showing the formation of human body.
- **Practicals (anatomy):**
- Gross anatomy of limbs, gastro-intestinal tract, cardiovascular system, respiratory system, reproductive system, urinary system, endocrine system, nervous system, special senses.
- **Histology:**
- Study of microscope, objective, basic techniques
- Histology of lymphoid tissues, excretory and genital system, skin and endocrine, epithelial tissue, glandular tissue, muscular and nervous tissue, cartilage and bone, organs of GIT, respiratory and cardiovascular system

Concept of health & disease	Concept, definition, Dimension, Positive health, Determinants of health, Indicators of health. Concept of disease, Epidemiological triad, Natural H/O disease, Concept of Prevention and Control, Concept of Modes of Intervention.
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Concept of health & disease

1. Concept, definition,
2. Dimension,
3. Positive health,
4. Determinants of health,
5. Indicators of health.

6. Concept of disease,
7. Epidemiological triad,
8. Natural H/O disease,
9. Concept of Prevention and Control,
10. Concept of Modes of Intervention.

PAPER-I SECTION B Q P Code : 5112

1	Sociology, Types of family	Social security, social concept in sociology, social organization, Problem family in health & disease, Cultural factors in health & disease, Medico- Social Worker (MSW)	12 hrs
2	Behavioural Sciences	Importance in health, disease, administration & management	

ELEMENTS OF SOCIAL SCIENCES, RURAL COMMUNITY & CHARACTERISTICS

Contents:

- Family structures, relationships and responsibilities of individual
- Community structure, functioning of the community, its privileges and responsibilities, maintenance of law and order, collection and expenditure of revenues, services provided.
- Types of social institutions, religion, state, family, marriage, inheritance, social rites on marriage and death, regulated human behavior in society, difference and similarity in the institutions of primitive and advanced societies.
- Duties of responsible citizens, citizenship, development of desirable social attitudes, ideals and abilities, community organization for self-help, co-operative society.
- Comparative idea of the Indian and rural society, characterizations of the people and habitats, urban society in India, economic, educational and social difference between urban and rural society, caste, religion and nationality.
- Improvements in the standards of health and life expectancy, social customs and forums, resistance to adoption of new practices and things. Problems of social order, economic aspects of family life, income & budget.
- Rural community and characteristics

PERSONAL HYGIENE

Contents:

- Habits and customs affecting personal hygiene.
- Cleanliness of body, habits, diet, clothing, exercises, sleep, public baths, care of special senses.

Climatology:

- General affects of climate on health
- Prevention of effects of cold climate
- Prevention of effects of hot climate
- Demonstration – 4 hrs
- Visit to meteorological department – 3hrs

VITAL STATISTICS

Contents:

- Definition, value and objectives
- Population census, estimate of population
- Rates – Birth Rate, Death Rate, Infant Mortality Rate, Still Birth Rate, Neonatal Rate – Significance
- Importance and use of vital statistics – informants, collections, compilation and presentation.
- Registration – rural, urban, objects, machinery, checking
- Notifications records, use of record keeping and reporting, definitions, purpose, application, appreciation, classification, service, records, sanitation, village health records – sanitary survey forms, spot maps.

Practicals:

- Calculation of rates
- Presentation of vital statistics

1	Environment & health	Water, Pollution & treatment, Ventilation, Air pollution , Lighting, Noise pollution, Housing standards, Water disposal. Solid waste disposal.	10 hrs
2	Nutrition & health	Classification of foods, Nutritional requirements, Balanced diet, Nutritional problems in public health, Food hygiene, Food adulteration & fortification, Food additives, Community nutritional programs, Milk-pasteurization, Milk borne disease	10 hrs

ENVIRONMENT AND HEALTH

Objective: To acquire sufficient knowledge to understand the –

- Impact of environment on health
- Impact of sanitation on health and to take preventive/promotive measures

Contents:

Water Supply sources: Physical/chemical quality, bacterial indicators, conservation of sources, collection, storage and distribution.

Urban areas:-

Steps in purification of water, storage, filtration, chlorination, purification of water on large scale with particular reference to rapid sand filter.

Rural Areas:-

Sanitary well – concept, purification of water in small scale – borewell.

Practicals:

- Demonstration of purification of water on small scale
- Visit to water treatment plant and a brief report
- Collection of water samples

- Demonstration of chlorination of well water
- Demonstration to physical, chemical, bacterial quality of water.
- Estimating chlorine demand, steps in disinfection, estimating residual chlorine
- Interpreting a water analysis report.

WASTE DISPOSAL

- Characterization
 - o Solid/Liquid
 - o General household/special circumstance - including aspects of management with emphasis on points of generation, storage, collection, transportation and different options available for management (in terms of reducing, recycling, composting, landfill, soakage pit, sanitary latrine, septic tank, biogassification)
- Hazards due to improper/ inappropriate management
- Protective devices and universal precautions
- Sewage treatment methods

Practicals:

- Undertake waste survey in market area, hotel, health care settings (preferably a 30 bed institution)
- Demonstration of composting, incineration, sanitary landfill
- Demonstration of trench latrine, sanitary latrine, septic tank, bio-gas plant.
- Visit to a sewage treatment plant.

RESIDENTIAL ENVIRONMENT

General principles of healthy housing in terms of:

- Site, foundation, material and constructions
- Walls, roof, floor, rooms, ventilators, lighting
- Facilities/methods for waste disposal both solid/liquid.
- Codes/regulations and legislations pertaining to scrutiny of buildings

Practicals:

- Visit/observe at least 4 residences (2 urban and 2 rural), report and suggest practical solution.
- Interact with municipal authorities regarding legislative provisions

AIR AND VENTILATION

- Concepts, importance of adequate ventilation
- Ill effects of inadequate ventilation
- Type of ventilation
- Indicators of air pollution
- Measures to reduce air pollution

INDUSTRIES AND TRADE

- Localization, ventilation, water supply, sanitation, lighting
- Control of dust and other hazardous substances
- Occupational risk factor and safety measures
- Legislative provisions

Practicals:

Visit to an industry and report

PUBLIC GATHERINGS

- Selection of place
- Provision of safe water supply, sanitary disposal of waste, construction of trench latrine
- Provision for emergency medical help
- Disaster planning

Practicals:

Visit/observe a weekly fair report with practical suggestions

SCHOOL ENVIRONMENT

Standards of space, walls, roofs, floor, furniture, lighting, ventilation, water supply, playground, latrine.

Practicals:

- Disinfection of wells testing for residual
- Water sampling
- Construction of latrine plates and pans
- Building of
- Construction of simple septic tanks
- Construction of bathing facilities, cattle
- Drinking troughs and laundering platforms
- Construction of smokeless chulas
- Residual spraying
- Preparation of chemical solution for spraying
- Larvoiding
- Construction of composite pits and soakage pits

FOOD SANITATION

Objective:

- To acquire knowledge regarding the importance of maintenance and promotion of food sanitation.
- To acquire practical skills in detecting food adulteration of food articles
- To be conversant with legislative provisions

Contents:

- Diseases transmitted through food including milk
- Food poisoning, food adulterants, food toxins, food additives, food fortification, food safety.
- Concepts of food preservation – storage/transportation etc.
- Mass catering – concepts, hazards, preventive measures

- Legislations regarding promoting food sanitation with particular reference to PFA act and local bodies statutory requirements
- Food processing centres including slaughter houses, cottage industries in food (eg. Pickles, potato chips etc.), public hazards health importance, preventive measures.
- Food vending centres including markets, super markets, wholesale/retail outlets.

Practical:

- Visits and observation
- Dairy, market place, hotel, super market, whole-saler, retailer, slaughter-house, food-processing factory
- Common tests to detect food adulteration
- Procedure for food sampling, dispatching and interpreting of results.
- Inspect and report on food establishment, market place and slaughter-house
- Interaction with a food analyst
- Visit to public health institute.

NUTRITION

Objective: to acquire sufficient knowledge regarding:

- Nutritional requirement of the body in maintenance of health including those for special groups like infant, pregnant and lactating woman.
- Preventing nutritional deficiencies
- Promoting nutritional nutrition

Contents:

Concepts in nutrition like:

- Classification of food
- Nutrients – carbohydrates, proteins, fats, vitamins, minerals – their daily requirements.
- Nutritive values of common food articles
- Balanced diet – nutritional requirements for special group infants, weaning, pregnancy, lactation, pre-school, school going
- Assessment of nutritional status for family/individual

- Cultural factors/nutrition
- Nutrition education
- Malnutrition concepts
 - o Characterization
 - o Home management
 - o Follow-up, therapeutic diet

Practical:

- Demonstration of food articles and their nutritive values
- Planning a balanced diet
- Demonstration of kitchen garden for mother in community
- Diet survey – 3 families with nutrition education

Practical:

- Visits and observation
- Dairy, market place, hotel, super market, whole-saler, retailer, slaughter-house, food-processing factory
- Common tests to detect food adulteration
- Procedure for food sampling, dispatching and interpreting of results.
- Inspect and report on food establishment, market place and slaughter-house
- Interaction with a food analyst
- Visit to public health institute.

1	Microbiology	Helminthiasis and Parasitology	05
2	Medical Entomology		

ELEMENTS OF MEDICAL MICROBIOLOGY & PARASITOLOGY

Objectives: To be able to understand by acquiring sufficient knowledge regarding microbiological aspects of infectious disease, lab and field methods of its diagnosis and principle of control of these infectious agents with particular reference to public health microbiology and parasitology.

Contents:

Introduction to microbiology

Characterization including classification, morphology, staining/cultural characteristics, viability virulence, pathogenicity, sensitivity resistance, lab-methods of diagnosis and field investigations.

Immunity:

- Concept
- Classification
- Importance
- Immunizing agents
- Adverse reaction

Disinfection:

- Concepts / terminologies
- Principles
- Procedures

Parasitology:

- Parasites of public health importance (locally relevant)
- Including life history, lab diagnosis, field investigations and control measures

Practicals:

- Use of microscope
- Demonstration of infectious agents and parasites as relevant locally
- Methods of field investigations
- Specimen collection – stool, urin, blood, sputum, etc
- Stool examinations – for ova/cysts, hanging drop
- Blood smear collection, staining and examination
- Split skin smear collection, staining examination
- Staining moths – Grams, Alberts, ZN, JSB Leishmans

ELEMENTS OF ENTOMOLOGY

Objectives: To identify the insects of public health importance and its control.

Contents:

- Morphology: Life history, bionomics, public health importance and control of the following vectors:
 - House fly
 - Louse
 - Ticks / Mites
 - Sandfly
 - Ratfly
 - Mosquitoes
 - Cyclops
- Practicals:
 - Demonstration to different stages in life history of above mentioned vectors
 - Demonstration of breeding places of the above mentioned vectors
 - Demonstration of control measures for the different stages of above mentioned vectors
 - Collection of larva and adult mosquito

Methods: Life history, group discussions, group work, demonstrations

1	Principals of Epidemiology and Epidemiological methods	Definition of Epidemiology, Measurements in Epidemiology Incidence/ Prevalence, Immunizing agents, UIP/NIP, Disinfection, Infectious disease epidemiology, Investigation of epidemic surveillance.	10 hrs
2	Screening for diseases		
3	Health Information and Basic Medical Statistics	Definition, Uses of health information, Sources of health information, Statistical averages, Data & Sampling methods	05 hrs

GENERAL EPIDEMIOLOGY & SCREENING

General concepts of control:

- Selected definitions (eg. Endemicity, epidemic, epizootic, incubation period etc.)
- Concepts in disease causation, levels of prevention, modes of intervention, spectrum of illness, epidemiological triad, web of causation.
- Dynamics of disease transmission, including modes of transmission
- Identification of the weak link in chain of disease transmission
- Different control measures (eg. Protection of susceptible, immunization, chemoprophylaxis, prompt treatment).
- Investigation of an outbreak

Study of communicable diseases:

- Airborne droplet infections – chickenpox, measles, diphtheria, mumps, whooping cough, influenza, meningitis, TB, ART.
- Water-food infections – diarrhoeal disease, polio, HAB, ginea worm
- Zoonotic – rabies, anthrax
- Contact – scabies, pediculosis
- Tetanus, leprosy
- Anthropod borne diseases like malaria, filarial and dengue should be discussed in detail

Practicals:

- Outbreak investigations/reporting/practical suggestions
- Visit to isolation hospital
- Demonstration of disinfectant procedures for body fluids/discharges of persons suffering from communicable diseases.
- Involve in planning, conducting of an immunization session, comment on cold chain, report and recommend practical solutions.
- Demonstration of ORS preparation.

VITAL STATISTICS

Contents:

- Definition, value and objectives
- Population census, estimate of population
- Rates – birth rate, death rate, infant mortality rate, still birth rate, neonatal rate – significance
- Importance and use of vital statistics – informants, collections, compilation and presentation.
- Registration – rural, urban, objects, machinery, checking
- Notifications records, use of record keeping and reporting, definitions, purpose, application, appreciation, classification, service, records, sanitation, village health records – sanitary survey forms, spot maps.

Practicals:

- Calculation of rates
- Presentation of vital statistics

1	Dynamics of disease transmission		
2	Concept of diseases control & prevention		
3	Concept of Prevention and Control, Concept of Modes of Intervention		

- **II DHI/Practicals/Field visits**

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Practical's	Hours	Field visits	Day
<u>Elementary Anatomy;</u> <u>Histology</u>	15 hrs		
Entomology	10 hrs	Sewage treatment plant	One Day
First aid Demo.	6 hrs	Milk dairy	One Day
Microbiology	20 hrs	PHC-Anganwadi/Sub centre	Five Days
Water	8 hrs	UHTC	Five days
Statistics	10 hrs	Water Treatment plant	One day
Nutritional spotters	4 hrs	Dist. Lab; Malaria/RNTCP	One Week
Protective Devices	1 hr		
Meteorological Devices	1 hr		
Tutorials/Seminar	15 hrs		
Total	90 hrs	Total	20 days

SUBJECT	SECTION	Question paper Code	MAX. MARKS
Paper - I	Section A	5111	50
	Section B	5112	50
Paper - II	Section A	5113	50
	Section B	5114	50
Paper - III	Section A	5115	50
	Section B	5116	50
Practical			100

THEORY EXAMINATION -100 MARKS

Section A : 50 Marks

I. Short Notes:

1. 5 marks X 4 questions = 20 marks (Answer any 4 out of 5 questions)

II. Short Answers:

2. 3 marks X 10 questions = 30 marks (Answer All 10 Questions)

Section B : 50 Marks

I. Short Notes:

5 marks X 4 questions = 20 marks (Answer any 4 out of 5 questions)

II. Short Answers:

3 marks X 10 questions = 30 marks (Answer All 10 Questions)

Third Year Diploma in Health Inspector

PAPER-I SECTION A Q P Code : 6111

Sl. No	Chapter	Sub Topics	No of hours
1	Communicable Disease	Respiratory, Intestinal , Arthropod borne, Zoonosis, Contact Disease,	20 hrs
2	Investigation of epidemics		

PAPER-I SECTION A Q P Code : 6112

1	Non-Communicable Disease	Diabetes Mellitus, Cancer, Blindness, Hypertension, Accidents, Obesity	10 hrs
2	National health programme	Include NHM	10 hrs

PAPER-II SECTION A Q P Code : 6113

1	Preventive obstetrics, Pediatrics	Antenatal, Intra natal & Post natal, Growth chart, under -5's Clinic, ICDS, Breast feeding weaning, Juvenile delinquency, Child abuse, street Children, Handicapped children, Gender bias, Child guidance clinic, Child welfare agencies, School health services, Child placement, Health of adolescents	8 hrs
2	Demography of family planning		10 hrs

PAPER-II SECTION A Q P Code : 6114

1	Health education, Communication and information		8 hrs
2	Legal medicine and Essential drugs		8 hrs

PAPER-III SECTION A Q P Code : 6115

1	First Aid		6 hrs
2	Occupational health & Disaster management		8 hrs
3	Hospital waste Management		6 hrs
4	International health	UNECEF, WHO, Red cross, FAO	1 hrs

PAPER-III SECTION A Q P Code : 6116

1	Organization & delivery of health care services in India including principles of administration, health legislations & primary health care		6 hrs
2	Health care of the community		6 hrs
3	Legal medicine and Essential drugs		8 hrs

Reference Books

1. Books on Community Medicine & Statistics
2. Text Book of Community Health Inspectors H.I.T. (JP Publishers, Delhi)
3. Text Book of Community Health for Nurses – Nursing Course
(Pee Pee Pub., Delhi)
4. Lab Manual for technical courses-Paras Publications
5. Text book of Sociology
6. Text book of behavioural Science

SUBJECT	SECTION	Question paper Code	MAX. MARKS
Paper - I	Section A	6111	50
	Section B	6112	50
Paper - II	Section A	6113	50
	Section B	6114	50
Paper - III	Section A	6115	50
	Section B	6116	50
Practical			100

THEORY EXAMINATION -100 MARKS

Section A : 50 Marks

III. Short Notes:

3. 5 marks X 4 questions = 20 marks (Answer any 4 out of 5 questions)

IV. Short Answers:

4. 3 marks X 10 questions = 30 marks (Answer All 10 Questions)

Section B : 50 Marks

II. Short Notes:

5 marks X 4 questions = 20 marks (Answer any 4 out of 5 questions)

II. Short Answers:

3 marks X 10 questions = 30 marks (Answer All 10 Questions)