THE TAMIL NADU Dr. M. G. R. MEDICAL UNIVERSITY, CHENNAI-600 032.

Regulations for the P.G. Diploma Course in Public Health Entomology

2011-2012 (DPHE)

In exercise of the powers conferred by section 44 of The Tamil Nadu Dr. M.G.R. Medical University, Chennai, Act, 1987 (Tamil Nadu Act 37 of 1987), The Standing Academic Board of The Tamil Nadu Dr. M.G.R. Medical University, Chennai hereby makes the following regulations.

1. SHORT TITLE AND COMMENCEMENT

These regulations shall be called "**THE REGULATIONS FOR THE POST-GRADUATE DIPLOMA COURSE IN PUBLIC HEALTH ENTOMOLOGY (DPHE) OF THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI."**

They shall come into force from the Academic Year 2011-2012

The Regulations framed is subject to modifications from time to time by the Standing Academic Board.

REGULATIONS

Post-Graduate Diploma Courses

REGISTRATION

A candidate admitted into Post-Graduate diploma courses in any of the affiliated Institutions of the Tamil Nadu Dr. M.G.R. Medical University, Chennai shall register with the University by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to the Controller of Examinations of this University through the Head of the affiliated institution within the stipulated date.

The candidate's name must be registered in the University within 3 months from the date of his/her admission.

ELIGIBILITY

Candidates for admission to the One year Post-Graduate Diploma course shall be required to possess the following qualifications.

a) He/she having qualified for B. Sc., (Zoo) / B. Sc(Micro) /MBBS degree of this University or any other University recognized as equivalent thereto by the authority of this University.

RECOGNITION FEE

Candidates who have passed the B. Sc., (Zoo) / B. Sc (Micro), M.B.B.S Degree from any other University shall remit a recognition fee as prescribed along with the stipulated registration fees.

DURATION OF THE COURSE

A) The period of certified study and training for the Post-Graduate Diploma course shall be Two Academic Year for the award of the degree.
B) Inservice Candidates with 3 years Experience in the field of Public Health in a Govt. Institutions will be admitted directly into 2nd year as lateral entry.
C) In case inservice candidates are not available that seats will be filled up with open candidates.

COMMENCEMENT OF THE COURSE

The academic year for Post-Graduate Diploma in Public Entomology course will commence from April 1st of every academic year.

CUT-OFF DATE OF THE COURSE

Last date of Admission to Post-Graduate Diploma in Public Entomology course 31st May of every academic year.

COMMENCEMENT OF THE EXAMINATION

There shall be two University examinations in an academic year. June 1st / December 1st. If the date of commencement of the examination falls on Saturdays, Sundays or declared Public Holidays, the examination shall begin on the next working day.

WORKING DAYS IN AN ACADEMIC YEAR.

Each academic year shall consist of not less than 290 working days.

ATTENDANCE REQUIREMENTS FOR ADMISSION TO EXAMINATIONS

No candidate shall be permitted to appear for the Examination unless he/she put in 90% attendance during his/her period of study and training in the affiliated institution recognized by this University and produces the necessary certificate of study, attendance and progress from the Head of the Institution by maintaining log book.

Students should undergo training for 9 (nine) continuous calendar months in an academic year. The candidates who do not appear for examinations due to lack of attendance he/she be permitted to appear for the subsequent examinations if the candidate has satisfied to attendance requirements.

MAINTAINENCE OF LOG BOOK

1. Every Post-graduate Diploma candidate shall maintain a record of skills he has acquired during the two year training period certified by the various Heads of Departments he has undergone training.
2. The candidates should also be required to participate in the teaching and training programme of the institute.
3. In addition, the Head of the Department shall involve their post-graduate candidates in Seminars, Journal Clubs, Group discussions and participation in clinical, clinico-pathological conferences.
4. The Head of the Department shall scrutinize the Log Book once in every three months.
5. At the end of the course, the candidate should summarise the contents and get the Log Book certified by the Head of the Department.
6. The Log Book should be submitted at the time of practical examination for the scrutiny of the Board of Examiners.

MIGRATION/TRANSFER OF CANDIDATES

1. Migration / Transfer of candidates from one recognized medical college to another recognised medical college of this University or from another University shall not be granted unless a NO OBJECTION CERTIFICATE is obtained from the Medical council of India.
2. The provision of combination of attendance shall be granted to a transfer for admission to the examinations of this University on satisfactory fulfillment of the regulations of this University.

RE-ADMISSION AFTER BREAK OF STUDY

Candidates having a break of study will not be permitted to continue the course since he/she will be finishing only after twice the number of years of the course.

The details are available in the University's Web Site www. tnmmu.ac.in. for the revised regulation for re-admission after break of study for all the Under Graduates and Post Graduates in Medical, Dental, Indian Medicine & Homoeopathy, and allied health science courses as approved by the Standing Academic Board in the XXIX Meeting held on 21.06.2010 .

SYLLABUS OF POST GRADUATE DIPLOMA COURSE IN

PUBLIC HEALTH ENTOMOLOGY (TWO YEARS)

FIRST YEAR

I – Basic Entomology including Vector Biodynamics and Behaviour

II – Basic Public Health Infrastructure

III – Vector Borne Diseases Management

IV – National Programmes pertaining to Vector Borne and Zoonotic Diseases

V – Health Management Information System

VI – Research Methodology

VII – Communication Skills

SECOND YEAR PAPER - I

MICROBIOLOGY, PARASITOLOGY INCLUDING ENTOMOLOGICAL ASPECTS

a) MICROBIOLOGY

SL.NO.	COURSE CONTENTS	HOURS
1.	History and Development of Microbiology-Scope of Microbiology-Causation of disease- Major characteristics of Micro-organisms-classification and Identification of Microorganisms.	2 hrs
2.	Light Microscopy- Bright field Microscopy, Phase contrast Microscopy- Interference contrast Microscopy- Dark field illumination-Fluorescence Microscopy- Electron Microscopy.	3 hrs
3.	Preparation for light Microscopy examination- The wet mount and hanging-drop technique- Fixed- stained smears- Microbiological stains- Simple staining- differential staining- gram staining- other staining technique.	4 hrs
4.	Morphology of Bacteria- cell wall- cytoplasm- cytoplasmic inclusions- Nucleus- spores, cysts—Reproduction and	5 hrs

	Growth- Quantitative measurement of bacterial growth- Microbiological metabolism- microbial physiology- Enzymes.	
5.	Microbial genetics- genotypic changes- mutations genetic recombination- conjugation- sex factors- Transduction- Transformation- gene control-genetic engineering.	3 hrs
6.	Cultivation of bacteria- Nutritional requirements- Bacteriological media- Physical conditions required for culture- choice of media- conditions of incubation-pure cultures maintenance of pure cultures- cultural characteristics.	5 hrs
7.	Bacteriology – Bacteria of public importance. And emerging and re-emerging bacterial diseases	10 hrs
8.	Fungi of public health importance	3 hrs
9.	Algae of public health importance	2 hrs
10.	Control of Micro-organisms by physical methods sterilization- moist heat-boiling, water- pasteurization- steam under pressure- dry heat- Hot air sterilization- incineration- Low temp. Dessication- osmotic pressure- radiation UV lights- X-rays- Gamma rays- cathode rays surface tension- interfacial tension- filtrations.	3 hrs
11.	Anti- Microbial chemical agents: Disinfectant. Antiseptic- germicide-bactericide- bacteriostasis – Anti Microbtrial agent- Selection of a chemical agent- different chemical agents- Evaluation of anti- microbial chemical agents- phenol- coefficient method. Anti-biotics and other chemotherapeutic agents- Antifungal- Anti-viral- susceptibility and resistance to antibiotics- assay of anti-biotice.	3 hrs
12.	Virology:- General properties Viruses of public health importance and emerging and re-emerging viruses	5 hrs

14.	Immunity- Hypersensitivity- Auto immunity- Immunology Immunoprophylaxis	4 hrs
15.	Bacteriology of Air, Water, Milk and food	3 hrs
16.	Collection and transport of specimens	2 hrs

b) PARASITOLOGY

Sl.NO.	COURSE CONTENTS	HOURS
1.	General Introduction- parasites- parasitism- classes of parasites- classes of hosts- sources and mode of infection – pathogenesis- pathogenic effects- Laboratory diagnosis- methods.	3 hrs
2.	Protozoa- General features- Classification of protozoa	1 hr
3.	Amoebae- E.histolytica- Morphologogy- Life cycle- pathogenicity Intestinal amoebiasis- Extra intestinal amoebiasis- difference between Amoebic dysentery and Bacillary dysentery- Laboratory diagnosis- Epidemiology- prophylaxis and treatment- Entamoebacoli. Other ameeba	7 hrs
4.	a. Flagellates: Intestinal flagellates- Typical example- Morphology Life cycle- Diagnosis and treatment.	4 hrs
	b. Haemoflagellates: T.gambiense, T.rhodisiense, Morphology- Life cycle, Diagnosis, treatment- vectors and reservoirs.	5 hrs
	c. Leishmaniasis- Morphology- Life cycle- ecological types- pathology diagnosis- treatment.	5 hrs
5.	Malaria parasites- Life cycle and Morphology- human plasmodia- pathogenesis diagnosis- treatment	8 hrs
6.	Flukes- Blood flukes- Morphology and life cycle- pathogenicity- Diagnosis treatment. Lung flukes- Morphology and life cycle- pathogenicity Diagnosis	5 hrs

	treatment.	
7.	Nematodes- Hook worms/ Round worms- Morphology and Life cycle, pathogenesis- Diagnosis and treatment.	10 hrs
8.	Filaria- Different human species- distribution- Morphology and Life cycle- pathogenesis- clinical manifestations- Diagnosis and treatment.	8 hrs
9.	Guinea worm- Life cycle- distribution pathogenicity- clinical features- Diagnosis-treatment.	3 hrs
10.	Emerging and re-emerging diseases	
11.	Diagnostic methods in parasitiology- Examination of faeces, Wet mount, blood smears, concentration method, sedimentation methods- egg count- culture methods- Animal inoculation- xenodiagnosis- Immunological diagnosis.	9 hrs
12.	Transmission and control of protozoans, trematodes, nematodes and parasites of PH importance- control measures in detail for each parasite.	8 hrs
ZOONOTIC DISEASES		
1.	Introduction to zoonoses: Classification- zoonoses- Public Health problem- factors influencing prevalence of Zoonoses. Zoonoses as occupational hazard socio economic status.	1 hr
2.	Anthrax: Introduction- Distribution- Morphology- Epidemiology- pathogenisity- Diagnosis- prevention- treatment and control measures pertaining to public Health.	2 hrs
3.	Brucellosis- Introduction- Morphology- Epidemiology- pathology- Diagnosis- Therapy- prevention- control measures- Health Education of the Public in programmes for prevention and control of Brucellosis	2 hrs
4.	Leptospirosis- Introduction- Morphology- Epidemiology- pathogenisity- Diagnosis- control and prevention- Health Education to the public.	4 hrs
5.	Rabies- Introduction- Epidemiology- pathogenisity- Diagnosis- treatment control measures- Health Education by Mass media.	2 hrs

6.	J.E. Introduction- Epidemiology- pathogenisity- Treatment- control measures- Epidemiology- symptoms- collection of specimens- control- Differential- Diagnosis with reference to West Nail fever- Dengue fever.	4 hrs
7.	KFD-Introduction- Aetiology- pathogenisity- Diagnosis- Treatment control measures and Epidemiological surveillance.	3 hrs
8.	Salmonellosis- Introduction- Aetiology- Clinical features in Animals- Carrier Animals- Epidemiology- Diagnosis- control and treatment.	1 hr
9.	Tick borne diseases: Introduction- Aetiology- Clinical features in Animals- Carrier Animals- Epidemiology- Diagnosis- control and treatment.	6 hrs
10.	Plague: Introduction- Aetiology- Clinical features in Animals- Carrier Animals- Epidemiology- Diagnosis- control and treatment.	6 hrs
11.	Hydatidosis: T. solium- T. saginata. Introduction- Aetiology- Epidemiology- pathogensity- clinical features- Diagnosis- control measures- treatment.	3 hrs
12.	Food and Food borne diseases	1 hr
13.	Toxoplasmosis- Introduction- Aetiology- Epidemiology- treatment- control.	1hr

PAPER II - EPIDEMIOLOGY, HEALTH EDUCATION, BIOSTATISTICS

a) EPIDEMIOLOGY

SL.NO.	COURSE CONTENTS	HOURS
1.	Epidemiology- History- Definition- Scope- principles of epidemiology uses of epidemiology- descriptive epidemiology	1 hr
2.	Measuring health and disease- Defining a case- Prevalence and incidence- case fatality- mortality- morbidity- disability- Attributable risk.	2 hrs
3.	Cause of disease- risk factors- cause and outcome- study design to prove causation.	2 hrs
4.	Prevention of disease- Levels of prevention-Screening tests- Validity of screening test.	2 hrs
5.	Epidemiology of communicable disease- epidemics and endemic disease-claim of infection- Infection agent- Host- environment- transmission.	1 hr
6.	Natural history and progress of disease- Diagnostic tests- effectiveness of treatment.	1 hr
7.	Environmental and occupational epidemiology- Exposure and dose- Dose- Effect relationship. Dose-response relationship.	1 hr
8.	Epidemiology- Health care planning and evaluation- Health status of community- Preventable causes- Intervention strategies – implementation- monitoring reassessment- of the health status of the community	2 hrs
9.	Epidemiological knowledge and skills- Epidemiological information about disease planning a research project- conducting the project.	1 hr
10.	Epidemiological studies- Observation. Descriptive- Analytical Experimental Ethical issues.	3 hrs

11.	Health indicators- Types of indicators- Health status indicators.	1 hr
12.	Demographic data- sources of information- Accuracy of data variable- Age- Sex- Ethnic group- Marital status- occupation other variables.	1 hr
13.	Health status assessment- important diseases- source of epidemiological information- Morbidity patterns- Mortality patterns- seasonality- Morbidity and mortality rates- Death registration and certification- District health information check list.	1 hr
14.	Reporting and surveillance system- Routine health information System- Surveillance- Definition of cases- Reporting cases- Routine sources of information- Additional sources of information- Analysis and preservation of data, communication and using the information- Effectiveness of surveillance system- Reporting systems checklist.	2 hr
15.	Epidemic- Definition- Diagnostic criteria- Investigation-Describing the epidemic- Epidemic incidence curve- case control analysis- Environmental assessment- control of epidemics- Reporting on the epidemic- district epidemic checklist.	2 hrs
16.	Epidemiological surveys- uses of surveys- cross sectional and longitudinal surveys- survey objectives- selecting the sample- sample size- questionnaires- variables- Repeatability- validity- Ethical issues.	2 hrs
17.	Organizing investigations and surveys- preliminary plans- organizing the field work. Logistics and support Investigation and survey checklist.	1 hr
18.	Recording Forms- coding- Data processing- Data analysis.	1 hr

b) BIOSTATISTICS

SL.NO.	COURSE CONTENTS	HOURS
1.	Introduction- scope and importance of statistics	1hr
2.	Importance of Biostatistics- merits and demerits of statistics Importance of Biostatistics in PH Department	2 hrs
3.	Presentation of data-uses of charts and diagrams- simple bar-subdivided bar-multiple bar- pie diagram.	2 hrs
4.	Graphical representation of data- histogram	2 hrs
5.	Frequency curve- classification of data	1 hr
6.	Frequency distribution	2 hrs
7.	Measures of central tendency mean- Three methods	2 hrs
8.	Median- Mode	1 hr
9.	Measures of dispersion- standard deviation- Relative measures of dispersion	2 hrs
10.	Correlation	1 hr
11.	Regression	2 hrs
12.	Probability- normal distribution	2 hrs
13.	Sampling- types of sampling	2 hrs
14.	Non- sampling errors	1 hr
15.	Tests of significance	2 hrs
16.	Chi square test- one sample test and two samples test	1 hr
17.	Vital statistics- definition of different rates	1 hr
18.	Population estimation	2 hrs
19.	Revision	6 hrs
20.	Application of statistical (packages) in vector Biology	12 hrs

c) HEALTH EDUCATION

SL.NO.	COURSE CONTENTS	HOURS
1.	Health- illness- behavior- understanding behavior- people- resources- culture- changes in behaviour.	1 hr
2.	KAP- Motivation Decision making- Adoption process- Helping people to improve their behaviour	1 hr
3.	Health Education- communication principles- methods Distortion- Rumours	1 hr
4.	Education and educational method Media and tools	1 hr
5.	Individual approach and group approach. Different groups.	1 hr
6.	Community organization and community participation- Health committees- campaign projects- partnership with people.	1 hr
7.	Planning health education - collecting information- understanding problems- deciding on priorities- objectives and action Identifying and obtaining resources- Action and follow up- selecting appropriate methods- Evaluating results- Reviewing the progress of planning.	1 hr
8.	Evaluation of Health Education	1 hr
9.	Health education in National Malaria Eradication Programme	1 hr
10.	Health education-Exercises- Demonstration and field visit	2 hrs

PART – II - PAPER I- ENTOMOLOGY INCLUDING ACAROLOGY

Sl.No.	Course contents	Hours
1	Entomology – Commonly used Nomenclature	1
2	History of Medical Entomology – Definition and Scope	1
3	Arthropods : General Classification with characters	1
4	Arthropods of Public Health importance – Taxanomy-classification – order- family – general characters	3
5	Insect Morphology – General structure and metamorphosis	3
6	Insects Digestive System and Nervous System	2
7	Insects – Reproductive System	1
8	Insects – Circulatory System	1
9	Insects- Excretory System	1
10	Insects – Visual organs and Olfactory System	1
11	Insects – Physiology in brief	3
12	Insect Ecology	4
13	Morphology, Life History, Bionomics, PH importance and identification of anophelines	8
14	Morphology, Life History, Bionomics, PH importance and identification of culicines (Filaria Vectors)	3
15	Morphology, Life History, Bionomics, PH importance and idenfication of phlebotomine sandflies	5
16	Morphology, Life History, Bionomics, PH importance and identification of Fleas	3
17	Morphology, Life History, Bionomics, PH importance and identification of Houseflies	3
18	Morphology, Life History, Bionomics, PH importance and identification of Blackflies, biting, midges, lice, bed bugs and Triatomine bugs	5
19	Morphology, Life History, Bionomics, PH importance and identification of cockroaches and culicines (JE & Dengue vectors)	7
20	Morphology, Life History, Bionomics, PH importance and identification of Ticks (soft and Hard ticks), mites	12

PAPER II VECTOR BIOLOGY, VECTOR CONTROL PRINCIPLES AND PRACTICES

Sl. No.	Course contents	Hours
1	Vector surveys (Mosquito, Sand Fly, House Fly, Flea and Cyclops)	6
2	Entomological Parameters	4
3	Control of Arthropod Vectors – Source Reduction	2
4	Control of Arthropod Vectors – Chemical control	6
5	Control of Arthropod Vectors – Biological Control	4
6	Control of Arthropod Vectors – Genetic Control	3
7	Control of Arthropod Vectors – Personal Protection and other measures	2
8	Pheromones and Insect Growth Regulators	3
9	Integrated Pest Management (IPM)	2
10	Integrated Vector Control (IVC) and Comprehensive Vector Control (CVC)	3
11	Insects pathogens and parasites	2
12	Insecticides – types, formulations, dosages, uses, mode of action, precaution and antidotes	3
13	Insecticides Resistance –types, causes, consequences and method of combating	3
14	Insecticidal applications – types of spray, ULV and fogging equipments and spray techniques	5
15	Antilarval measures – definition, principle and types	3

\

II YEAR - PAPER I PRACTICAL
MICROBIOLOGY AND PARASITOLOGY

Sl. No.	Topic	No. of Hours
1	Equipments of a laboratory – Maintenance of a laboratory – Collection of Clinical Specimens – Safety Measures in laboratory – Disposal of Specimens and Infected Materials	6
2	Microscopes – Care of Microscopes – Calibrating the microscope for measurement	3
3	Faecal specimens – Collection – Macroscopic examination – Anal swabs for pin worms – Microscopic examination of wet mounts – Saline and iodine – Identification of parasites – Helminthes – Round worm – Tape worm – Hook worm- Whip worm – Eggs and Larvae – Protozoa – Entamoeba histolytica – E. Coli – Giardia lamblia – Trichomonas hominis – Balantidium coli – Cysts – Recording results of stool specimens — Concentration technique Transport of Stool specimens for bacterial examination	18
4	Preparation of Gram stain, Leishman, and Ziehl-Neelsen, Wayson stains	9
5	Staining Techniques – Gram staining – Giemsa staining – Wayson's staining – Examination and Identification of bacteria	12
5	Sputum – Collection of Sputum specimens – Appearance of Sputum – Preparation of Sputum smears – Ziehl-Neelsen staining – Examination and identification	12
7	Examination of skin smears and Nasal smears – Modified Ziehl Neelsen method – Examination and identification	3
8	Hanging Drop Preparation and Examination	12
9	Study of liquid media in respect of their contents, identification and uses – Peptone water – Broth – Sugar Media – Hiss's Serum Broth – Mac-Conkey's liquid medium – Robertson's cooks meat medium	6
10	Study of solid media in respect to their contents, identification and uses – Blood agar, Chocolate agar, Mac Conkey's medium – Loeffler's serum slope – Lowenstein Jensen medium – Nutrient agar – Triple sugar iron – Sabouraud's dextrose – Agar medium Examining growth on Blood agar, Mac Conkey plates – Loeffler's serum slope – Lowenstein Jensen medium and Nutrient agar plates Inoculation of Bacterial suspension on Nutrient agar by streak method	12

11	Collection, Storage and Transport and Examination of water sample	6
12	Agglutination reaction –Widal, Enterocoombi test Flocculation test – RPR card test ICT- Pregnancy test	15
13	Spotters Identification	18
14	Blood smear collections, and Staining using JSB stain and for both Malarial and Filarial parasites	6
15	Blood smear Examinations for both Malarial Filarial parasites	72
16	Spotters and Identification of *Anophelines*	72
17	Identification of *Culicines*	
18	Preparation of stains JSB stain	9
19	Demonstration of DFM	
20	Demonstration of IgM antibody assay (Dry dot for leptospirosis)	
21	Wild rodent survey	25
22	Demonstration of rodent dissection and bleeding for sero diagnosis	
23	Preparation of organ smears (LSL) for *Y. pestis*	
24	Demonstration of REP survey and combing of fleas	
25	Demonstration of Weil-Felix test for Rickettsial infection sero diagnosis by Elisa	25
26	Identification of Ticks and Mites	

II YEAR

PART – II - PAPER III PRACTICAL – MEDICAL ENTOMOLOGY

Sl. No.	Course contents	Hours
1	Materials and techniques for collection, transportation, preservation, mounting, rearing of insects	6
2	Microtomy, fixation, fixatives, embedding, sectioning and staining techniques for history	6
3	Susceptibility test for mosquito – adult and larvae	6
4	Mounting of different types of wings and antennae	6
5	Dissection / mouth parts of mosquitoes, sandflies, housefly, cockroach and bed bug	6
6	Identification of Anophelines – larvae and adults	36
7	Identification of Culicines – larvae and adults	36
8	Dissection of mosquitoes – Gut and Salivary gland	36
9	Age determination technique	12
10	Mounting the genetalia of sand fly	12
11	Different types of cells in the haemolymph of cockroaches	3
12	Determination of cholinesterase	3
13	Chloroquine estimation in urine	2
14	Precipitin test – Blood meal analysis	6
15	Cytotaxanomy – preparation of polytene chromosomes	2
16	Identification of medically important insects (other than mosquitoes and sand flies), Fleas, Houseflies, Black flies, Biting midges, Lice, Bed bugs, Triatomine bugs, Cockroaches	6
17	Ticks (Soft ticks and hard ticks)	6
18	Identification of Predators of Mosquitoes and Biocontrol agents	3
19	Demonstration of spray equipments – parts, operations, discharge rate, maintenance etc.	3
20	Demonstration of fogging equipments – parts, operations, maintenance etc.,	3

I YEAR

DURATION: 1 YEAR)

Sl.No.	Subject	Theory (Hours)	Practical/Field Practice (Hours)	Total (Hours)
1	Basic Entomology including Vector Biodynamic and Behaviour	50	200	250
2	Basic Public Health Infrastructure	10	115	125
3	Research Methodology	20	105	125
4	Health Management Information System	10	115	125
5	Vector Borne Diseases Manage-ment	25	500	525
6	National Programmes pertaining to Vector Borne and Zoonotic Diseases	20	230	250
7	Communication Skills	10	40	50
	Total	**135**	**1365**	**1500**

- The candidates will be exposed on collection, compilation and analysis of data pertaining to vector borne and zoonotic diseases. In addition, they will also be exposed on the outbreak investigations, surveillance and prevention and control of vector borne and zoonotic diseases.

II YEAR

DURATION: 1YEAR)

Sl.No.	Subject	Theory (Hours)	Practical (Hours)	Total (Hours)
1	Microbiology	52	132	184
2	Parasitology	76	209	321
3	Zoonoses	36		
4	Epidemiology	29	24	53
5	Health Education	11	18	29
6	Biostatistics	47	36	83
7	Field Visit	0	60	60
8	Medical Entomology including Acarology	68	144	212
9	Vector Control Principles and Practices	51	60	111
10	Dissertation	0	250	250
11	Field Practice	0	144	144
	Total	**370**	**1077**	**1447**

SCHEME OF EXAMINATIONS – I year

Sl.No.	Subject (Paper)	Marks
1.	▪ Basic Entomology including Vector Biodynamics and Behaviour, ▪ Basic Public Health Infrastructure, ▪ Vector Borne Diseases Management, ▪ National Programmes pertaining to Vector Borne and Zoonotic Diseases, ▪ Health Management Information System ▪ Research Methodology ▪ Communication Skills	100

SCHEME OF EXAMINATIONS – II year

Sl.No.	Subject (Paper)	Marks
1.	Paper I (Written) Microbiology, Parasitology and related Entomological aspects	100
2.	Paper I Practical	100
3.	Paper I – Viva Voce (Oral)	50
4.	Paper I – Internal Assessment	50
5.	Paper – II (Written) Epidemiology, Health Education and Bio-statistics	100
6.	Paper – II – Viva Voce (Oral)	50
7.	Paper – II Internal Assessment	50
8.	Paper III (Written) Medical Entomology including Acarology	100
9.	Paper III Practical	50
10.	Paper III – Viva Voce (Oral)	50
11.	Paper III Internal Assessment	50
12.	Paper – IV (Written) Vector Control Principles and Practices	100
13.	Paper – IV – Viva Voce (Oral)	50
14.	Paper – IV Internal Assessment	50

Note: The minimum marks required for a pass is 50% marks