

DSE 6

**INSECT, VECTORS AND DISEASES**

**THEORY**

**(Credits 4)**

**Unit 1**

**Introduction to Insects**

- 1.1 Classification of insects upto order level
- 1.2 Morphological features, Head – Eyes,
- 1.3 Types of antennae,
- 1.4 Mouth parts w.r.t. feeding habits

**Unit 2**

**Insects as Vectors**

- 2.1 Brief introduction of Carrier and Vectors (mechanical and biological vector),
- 2.2 Reservoirs, Host-vector relationship, Vectorial capacity, Adaptations as vectors,
- 2.3 Host Specificity
- 2.4 Detailed features of orders with insects as vectors – Diptera, Siphonaptera, Siphunculata, Hemiptera

**Unit 3**

**Dipteran as Disease Vectors**

- 3.1 Dipterans as important insect vectors – Mosquitoes, Sand fly, Houseflies;
- 3.2 Study of mosquito-borne diseases – Malaria, Dengue, Chikungunya, Viral encephalitis, Filariasis; control of mosquito
- 3.3 Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; control of sand fly
- 3.3 Study of housefly as important mechanical vector, Myiasis, control of housefly

**Unit 4**

**Siphonaptera, Siphunculata, Hemiptera as Disease Vectors**

- 4.1 Fleas as important insect vectors; Study of Flea-borne diseases – Plague, Typhus fever;
- 4.2 Human louse (Head, Body and Pubic louse) as important insect vectors; Study of louse-borne diseases – Typhus fever, Relapsing fever, Trench fever, Vagabond's disease, Phthiriasis;
- 4.3 Bugs as insect vectors; Blood-sucking bugs; Chagas disease, Bed bugs as mechanical vectors,
- 4.4 Control and prevention measures against diseases caused fleas, louse and bugs

## INSECT VECTORS AND DISEASES

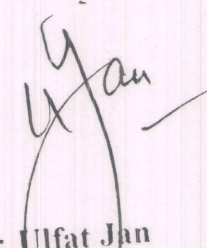
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## PRACTICAL

1. Study of different kinds of mouth parts of insects
2. Study of following insect vectors through permanent slides/ photographs:  
*Aedes, Culex, Anopheles, Pediculus humanus capitis, Pediculus humanus corporis, Phthirus pubis, Xenopsylla cheopis, Cimex lectularius, Phlebotomus argentipes, Musca domestica*, through permanent slides/ Photographs
3. Study of different diseases transmitted by above insect vectors
4. Submission of a project report on any one of the insect vectors and disease transmitted

## SUGGESTED READINGS

- Imms, A.D. (1977). *A General Text Book of Entomology*. Chapman & Hall, UK
- Chapman, R.F. (1998). *The Insects: Structure and Function*. IV Edition, Cambridge University Press, UK
- Pedigo L.P. (2002). *Entomology and Pest Management*. Prentice Hall Publication
- Mathews, G. (2011). *Integrated Vector Management: Controlling Vectors of Malaria and Other Insect Vector Borne Diseases*. Wiley-Blackwell

  
Dr. Ulfat Jan  
Prof. & Head,  
P.G. Dept. of Zoology  
University Of Kashmir