BZYCT-143

ASSIGNMENT BOOKLET

Bachelor's Degree Programme

(BSCG)
INSECT VECTORS AND VECTOR BORNE DISEASES

Valid from 1st January, 2023 to 31st December, 2023

School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068
(2023)

Dear Student,

Please read the section on assignments in the Programme Guide for Core Courses that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, **which would consist of one tutor-marked assignment** for this course. The assignment is in this booklet, and it consists of three parts, Part A and B. The total marks of all the parts are 100, of which 35% are needed to pass it.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

1) On top of the first page of your answer sheet, please write the details exactly in the following format:

ROLL NO.: ……

NAME: ……

ADDRESS: ……

……

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COURSE CODE: …….

COURSE TITLE: …….

ASSIGNMENT NO.: ……..…

STUDY CENTRE: ……..….. **DATE:** …….……...

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.

3) Leave 4 cm margin on the left, top and bottom of your answer sheet.

4) Your answers should be precise.

5) Complete each of Part A and Part B of this assignment separately, and **submit them together.**

6) The assignment answer sheets are to be submitted to your Study Centre as per the schedule made by the study centre. **Answer sheets received after the due date shall not be accepted.**

   We strongly suggest that you retain a copy of your answer sheets.

7) This assignment is **valid from 1st January, 2023 to 31st December, 2023**. If you have failed in this assignment or fail to submit it by December, 2023, then you need to get the assignment for the year 2024, and submit it as per the instructions given in the Programme Guide.

8) **You cannot fill the exam form for this course** till you have submitted this assignment.

We wish you good luck.

ASSIGNMENT

INSECT VECTORS AND VECTOR BORNE DISEASES

Course Code: BZYET-143
Assignment Code: BZYET-143/TMA/2023
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

Part-A Maximum Marks: 50

1. Which structural, developmental and behavioristic characteristics make insects highly successful organisms on Earth? (10)

2. Write short notes on following: (10)
   - i) Mouthpart modifications in insects
   - ii) Types of antennae in insects
   - iii) Typical structure of insect wing
   - iv) Leg modifications in insects

3. i) Read the following sentences and tick mark the correct alternative. (4)
   - a) **Incubating/Convalescent carriers** are infected and can spread the pathogen, but do not show the symptoms of illness.
   - b) The only function of **mechanical/biological** vectors is to transport the infectious agents which don't really need vectors to complete their life cycle.
   - c) In **propagative/cyclopropagative transmission** the pathogen undergoes a developmental cycle and multiplication in the body of arthropod.
   - d) Some virus and rickettsiae are transmitted from **male/female** parent through the **sperms/eggs** to the offspring.

   ii) Differentiate between: (6)
   - a) Propagative Transmission and Cyclopropagative Transmission
   - b) Cyclodevelopmental Transmission and Vertical Transmission

4. i) Name four insect orders which are of medical importance. Write at least one conspicuous feature and three examples of each order. (4)

   ii) Give reasons for the following features found in insects. (6)
   - a) Fleas have a laterally compressed body.
   - b) Forewings of a few hemipterans are called hemelytra.
   - c) Hind legs of fleas are saltatorial types with large coxae.
   - d) Saliva of haematophagous insects contain anticoagulant.
   - e) Heteroptera have a characteristic scutellum which is absent in homopterans.
   - f) The under surface of the housefly labella has prestomial teeth.

5. i) Explain the role of Reduviid bug as a biological vector in the transmission of Chagas disease. (5)

ii) What preventive measures will you take for controlling the bed bugs from entering your house? (5)

Part-B **Maximum Marks: 50**

6. i) Read the following sentences and write True (T) or False (F). (6)

a) Malaria is a disease caused by *Anopheles* mosquito.

b) The vector for malaria is *Culex* species.

c) The infection of malaria starts when a female mosquito injects sporozoites of *Plasmodium* sp. present in her saliva into a human skin.

d) *Plasmodium* cannot complete its life cycle at temperature below 20°C.

e) During pregnancy malaria can lead to premature baby delivery.

f) Most malarial deaths occur in urban areas.

ii) Discuss the preventive and control measures of *Anopheles* mosquito. (4)

7. i) Write a short note on dengue prevention and control. (4)

ii) Draw a labeled diagram of: (6)

a) Life cycle of *Aedes* mosquito.

b) Dengue transmission Cycle.

c) Zika Transmission Cycle.

8. Write short notes on: (10)

a) Traps used for controlling houseflies

b) Cultural control of *Musca*

c) Chemical control of housefly

d) Myiasis

9. i) Write the ecological factors favourable for the transmission of Kala-azar. (4)

ii) Illustrate the transmission of visceral leishmaniasis in human beings. (6)

10. i) Explain the concept of Integrated Vector Management. (5)

ii) Why have insects vectors developed resistance to insecticides? (5)