

* Assignment No = 1 *

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Std = S.Y. BSC Sem-IV

Subject = Zoology-II

Roll No = 984

Date = 15-03-2024

Prasanna
18/3/24

Q.1] Define / Explain =

(a) Supersedure = When the egg laying capacity of old queen is lost or suddenly dies, a new young of vigorous queen takes position of old queen is called as Supersedure.

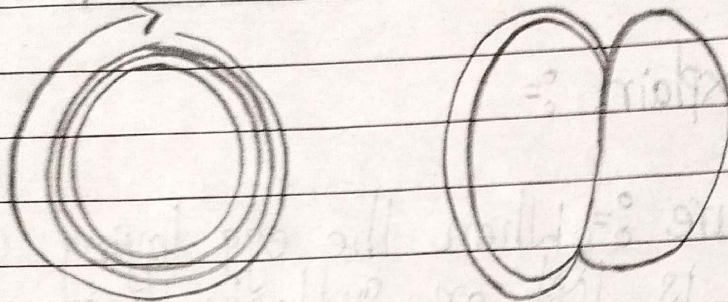
(b) Uses of Hive tool = It is a flat piece of steel sharpened at one end for inserting betⁿ hive boxes to separate them and the other end bent to separate the frames. It is also used to scrape off the bee glue and pieces of comb from various parts of the hive.

(c) Any two name of Honey bee diseases =
= Protozoan Disease = ① Nosema disease
② Amoebic disease

Q.2] Describe the following =

1] Describe round dance and Wag-tail dance in honey bee.

⇒ ⊙ Round Dance ⊙ = The round dance is used to direct a short distance, i.e. less than 50 metres, (i.e. *A. mellifera*). In the round dance, the bees run in circles, first in one and then in opposite direction. (clock and anticlockwise)

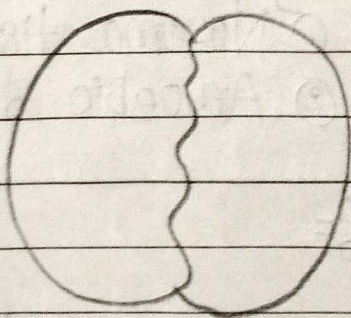


- Round Dance -

⊙ Tail - Wagging Dance ⊙ = If the source of food discovered by a forager is more than about 50 metres away (i.e. in case of *A. mellifera*), it performs a different dance on its return.

In which the bee runs along semicircles, alternate left and right, ending each turn with a straight run back to her starting point.

- 10.5 wags in 15 seconds.
- left and right side



- Tail - Wagging Dance -

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2] Describe Protozoan diseases in honey bee.

→ Protozoan disease :-

① Nosema disease - - It is caused by a Protozoan (class - Sporozoa), Nosema apis zander which attacks lining of the stomach and small intestine causing dysentery.

- The disease mostly attacks the bees in winter season when they do not go out and quickly decrease the bee population.

- Stomach and small intestine of infected bees become dull greyish white as compared to the brownish red or yellowish of healthy bees.

② Treatment = ① Sterilization of brood box and hive frame with glacial acetic acid.

② 40% Formalin

② Amoebic disease - It is also caused by a Protozoan, Malpighamoeba mellificae which infests the Malpighian tubules.

- The cysts of amoebae are passed into the intestine from where it comes out of the body with the faeces to infect other bees as they clean the faeces from the combs.

- It also produces dysentery and can be treated in the same way as Nosema.

3] Describe life cycle of Honey bee.

→ The honey bees show complete metamorphosis and

thus termed as holometabolus insect.

Egg → Larva → Pupa → Adult

This is the Developmental stages.

- Swarming (Supersedure)

- Nuptial flight / marriage flight

○ Honey bee Cast = ① Drones ② Worker ③ Queen

① Egg ∴ - Pink colour, elongated, cylindrical

This is resemble like Rice → 0000

- 1500 eggs are layed by queen bee, brood chamber - bottom

- 4-6 day hatch into larva.

② Larva ∴ Grubs - legless larva

- The Larvae are minute, legless, white color

- 3 day Royal jelly - Worker bee feeds.

- Worker bee maintain 35°C temp. by Fanning

- Bee bread - Pollen + Honey.

③ Pupa ∴ - After 5 days of feeding the cell is sealed & the grubs undergo pupation.

- Pupa is exarate. (i.e legs are not adhered to the body).

- Worker, drone & queen pupae can be distinguished by examining the distance between eyes.

* Morphological features ∴ =

Drone	Worker	Queen
- Eyes meet over head.	Eyes far apart.	Eyes far apart.
- Abdomen black, rectangular, blunt	Striped, triangular with barbed sting.	Golden or black triangular but more elongate
- Life span three weeks	- Six weeks	2-3 years

④ Adult ♂ = The emerged adult chew away the cell cap and crawls out to join the other bees as a member of the hive. The morphological features are described in earlier i.e. in social organization. Indoor duties for about 2 to 3 weeks.

4] Describe the use of Honey & Bee Wax.

① Honey ♂ =

- Pura

- Medicinal Value Antiseptic, Ayurveda

- Indigestion, Homeopathic diseases
champrash etc.

- Honey Wines → Alcoholic beverages,

- Food Value ∴ It is estimated that 200 gm of honey provides as much nourishment as 11.5 litre of milk or 1.6 kg cream or 330 gm meat.

- Large quantities of honey are used in making alcoholic drinks, beauty lotions,

② Bee Wax ♂ = - Cosmetics

Uses

- Making metal casting ornaments

- Pill Coating

- Cleansing Cream

- Lipsticks

- Polish

- Lubricant

- Water Proof Canives

- Making Candles.

Q.3] Short Notes :-

- a] Winter Season Management in honey bees.
Bees require moderate temperature if the temp. is raised beyond 33.5°C they cool their nest and if the temperature below 10°C bees produce heat by muscular movements by consuming honey, thus, if their nests are insulated then the honey consumption will be reduced and it saves the energy of bees. Four inches thick insulation on all the six sides of the hive is generally done for the four months if protects the hive from severe cold and frosty mornings, (November to February).

- b] Damage Caused by Wax moth.
- Several moths are hazardous to honey comb and honey bees. They can be grouped into two types viz. - First are robbers and second are breeders.
- Most danger robber is the 'Death's head hawk moth' - *Acherontia styx*. is the minor pest commonly called lesser wax moth.
- This moth enters the hives at night and drinks up the honey, weak colony these moths may be tolerated and could be seen on combs but in strong colony, they are driven out.

Q] Use of Pollen :-

- Pollen is mainly used by brood for growth. It can be fed to stimulate egg laying, bees make bee bread from pollen.
- Gonadotropic hormones are found in pollen of date palm, so it is used for treating sterility.
- It is also suggested that pollen can maintain the health of the prostate gland in man.
- Chocolate coated Pollen Candies and other pollen products have been sold as health foods.
- The Pollen from known plant sources is used in desensitizing persons with Pollen allergies.

d] Bee Veil :- It is made of frames covered on the four sides with small mesh wire gauge, black light material, silk cotton and top and bottom with thick cloth. The bottom cloth is provided with rim (circular ring) with an elastic to make it stick to the neck. Bee veil is worn over the face of the person handling bees, for the protection against stings.

See
Pravart.
18/12/24