Section 4 Part B Questions
Submit your answers to these Part B questions with your Part C answers as a single 'Word' document ensuring you use the full question title as below.

Section 4 Part B Question 1

a. Describe how sacbrood virus affects the larva, the typical visual signs and how the virus is spread through the colony? (8)
b. What effect does sacbrood virus have on the adult bee? (4)
c. Describe the signs of bald brood (3)

Section 4 Part B Question 2

a. How would you recognise chalkbrood? (5)
b. Briefly describe the lifecycle of the chalkbrood fungus. (5)
c. What actions can a beekeeper take to prevent chalkbrood developing within a colony and spreading across an apiary? (5)

Section 4 Part B Question 3

a. What is dysentery? Why does it usually occur? (2)
b. What steps can be taken by the beekeeper to reduce the risk of dysentery occurring? (4)
c. Make brief notes on Malpighamoeba mellificae including the type of organism and lifecycle. (6)
d. What signs (if any) might arouse suspicions that a colony might be infected by Amoeba? (2)
e. How might Amoeba be transmitted from one colony to another? (1)

Section 4 Part B Question 4

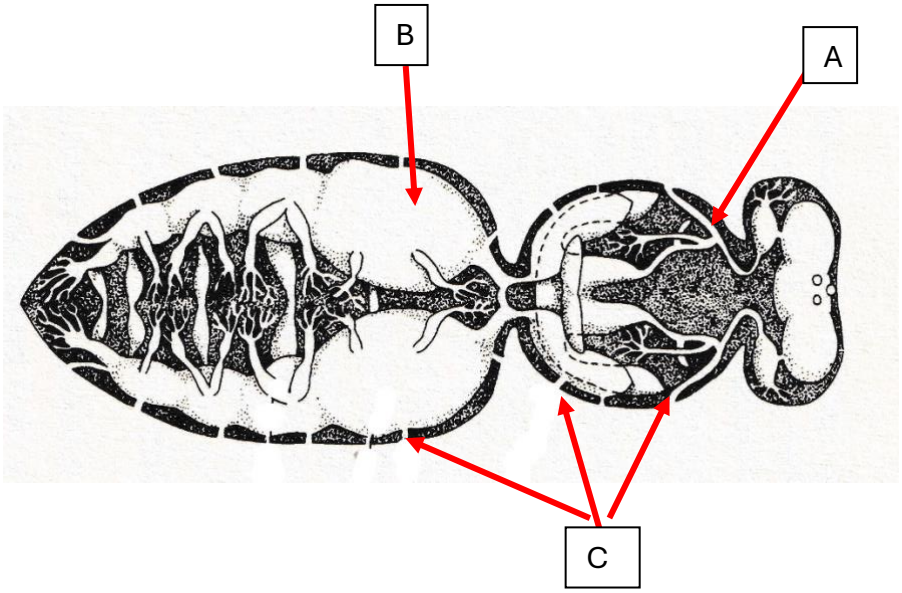
a. What may lead the beekeeper to suspect a colony is infected with *Vairimorpha (Nosema) apis? (1)*
b. How does the *V. (Nosema)* apis differ from *V. (Nosema) ceranae*? (8)
c. Why is Vairimorpha (*Nosema) spp* more prevalent and have greater effect in winter and spring than in summer? (5)
d. What is the name of the structure within the spore that penetrates the epithelium and injects the genetic material (1)

Section 4 Part B Question 5

a. What are the characteristic signs of chilled brood? (3)
b. When is chilling most likely to occur naturally and why? (4)
c. Give four situations caused by the beekeeper which could result in chilled brood. (4)
d. Give 2 circumstances when drone brood may be neglected and two characteristic signs? (4)

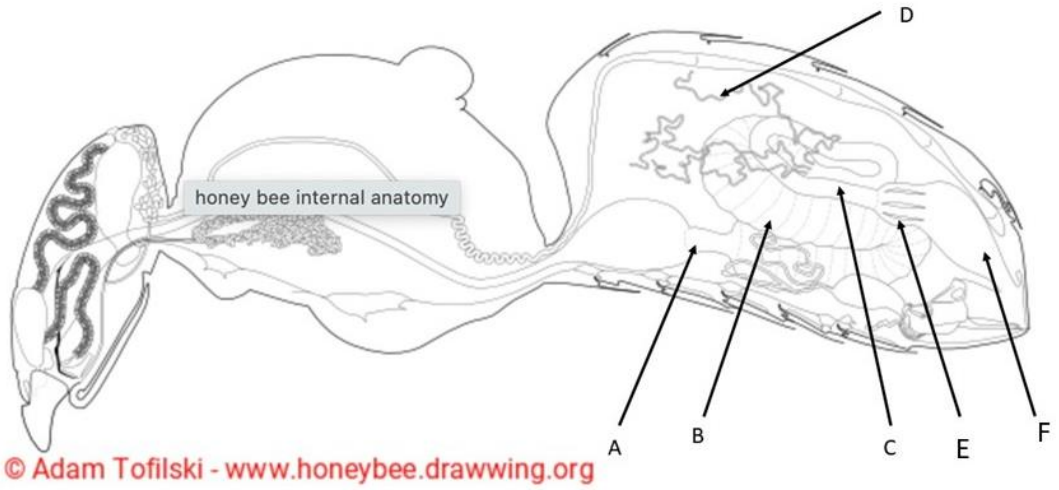
Section 4 Part C Questions

Submit your Part C asnswers with your Part B answers as a single 'Word' document ensuring you use the full question title as below.



a. Label the attached diagram and give a brief description of the function of each of these parts. (3)
b. Give the Scientific name, type of organism and life cycle of Acarine. (10)
c. What impact does Acarine have on the bee/colony? (3)
d. What colony conditions will promote the spread of Acarine? (3)
e. Why might we see an increase in cases of Acarine infestation in the future? (2)
f. Describe the steps required to carry out a diagnosis of Acarine. Include the sample size, and rationale behind this number. (9)

Section 4 Part C Question 2



a. Name the parts A – F on the diagram, give a simple account of the function of each of these. (9)

b. Describe the lifecycle of *Vairimorpha (Nosema) apis*. *(8)*
c. What effect does *Vairimorpha (Nosema) apis* have on an individual worker bee?(5)
d. What effect does *Vairmorpha (Nosema) apis* have on affected Queens? (3)
e. Give a brief account of how an infection of either *Vairimorpha (Nosema) apis* or *Vairimorpha (Nosema) ceranae* can be diagnosed in a laboratory. (5)