

The Federation of Irish Beekeepers' Associations
(Comhnascadh Cumann Beachairí na hÉireann)

Education and Examination Board

INTERMEDIATE SCIENTIFIC EXAMINATION 2024

Date: Sat 6th Apr

Three hours (14:00-17:00)



INSTRUCTIONS: You must answer QUESTION 1 and FOUR OTHER QUESTIONS

Draw large, labelled diagrams and sketches where appropriate.

Write clearly and adhere strictly to the subject matter of the questions.

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1. (a) Give an account of European Foul Brood under these headings: Causative agent, signs and symptoms, effect on colony and treatment / prevention. **[10 marks]**
(b) How is EFB spread within the apiary? **[5 marks]**
(c) Explain clearly the differences in the symptoms of AFB and EFB. **[5 marks]**
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2. (a) Draw a large labelled diagram of the circulatory system of the honey bee, showing the names of the relevant organs and the direction of haemolymph flow. **[10 marks]**
(b) Explain the function of 2 of the named organs. **[5 marks]**
(c) Give the functions of the honey bee's haemolymph. **[5 marks]**
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3. (a) Describe, using large diagrams, how a scout bee recruits foragers in the hive to a newly discovered rich nectar source **[10 marks]**
(b) Draw a large labelled diagram of a named flower of use to honey bees. **[5 marks]**
(c) What makes the honeybee an effective pollinator? **[5 marks]**
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4. (a) Describe the life-cycle of the female honeybee castes, including metamorphosis. **[10 marks]**
(b) Explain clearly how it forms the basis of the nine/ten day inspection interval used by beekeepers to effect swarm control. **[5 marks]**
(c) Write a short account of parthenogenesis in the honey bee. **[5 marks]**
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5. Write notes on five (5) of the following seven (7) items: **[4 marks each]**
Fermentation of honey; Hamuli; Nasonov gland; Proventriculus; Invertase; Propolis; Spiracles
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6. (a) Describe chalkbrood under the headings: Causes, symptoms, spread, treatment and prevention. **[10 marks]**
(b) Draw a large labelled diagram of the hind leg of the adult worker honey bee. **[10 marks]**
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