

PART 1

1. What is the typical number of bees in a strong colony at the height of the season?

- a. 10,000
- b. 50,000
- c. 200,000

2. Name a characteristic of queenlessness

- a. Agitated bees
- b. Fermenting honey
- c. Domed cappings

3. You find drones developing in worker brood. Why?

- a. No Drone cells available
- b. Drone laying queen
- c. Overcrowding

4. How many queen bees live in a bee hive ?

- 1
- 2
- several

5. What is the temperature in the centre of the brood nest ?

- 28°C
- 35°C
- 39°C

6. How high is the temperature in the centre of the winterbees ?

- 10°C
- 20°C
- 39°C

7. What function does a worker bee have right after her hatching ?

- collecting bee
- guarding bee
- cleaning bee

8. What is the function of a worker bee at the end of her life

- collecting bee
- guarding bee
- cleaning bee

9. Where is the honey stored inside the bee hive ?

- in the bottom part of a comb

- o equally distributed of the comb
- o in the upper part of a comb

10. What is the Waggle dance

- 1) The way bees show their food location
- 2) Communication about the weather
- 3) Pass their free time

11. The temperature maintained on a sealed brood is approximately

- 1) 30 °C
- 2) 34 °C
- 3) 38 °C

12. What does a worker bee not do

- 1) collect nectar
- 2) breed

14 -In the spring , how much arrive the number of honeybee in one beehive:

- Between 100000 – 150000 honeybee
- Between 60000 – 80000 honeybee
- Between 10000 – 20000 honeybee

15 - Arrange the life cycle of honeybee workers:

- 1- Clean cell and keeps the brood worm
- 3- feed youngest larva
- 2-feed older larvae
- 5- guards the hive entrance
- 6- flying from hive begins pollinates plants , collect pollen nectar and water
- 4- produce wax ,build comb carries food undertaker duties

16 - The pheromone odours tell the bees in the colony that :

- The drones is still with them
- The pollen is enough in the colony
- The queen is still with them

17 – In the beehive it is possible to find :

- 4 different types of wax cell used for eggs and honey
- 5 different types of wax cell used for eggs , honey and pollen
- 3 different types of wax cell used for eggs

18 – What is the first job of a bee when is born :

- Eat honey to grow

- Fly out the colony search for honey
- Clean out the cell in which she was born

19 – The queen cell built on the :

- Center of a comb
- Top of a comb
- Bottom of a comb

20 – Who's decide to raise a new queen when the queen becomes too old or infertile :

- The workers
- The drones
- The queen her self

22 - Where is kept the honey in the bee family?

- In frames below broods
- Above the brood nest
- In brood nest
- In front of brood nest

23. Who protects bee nest?

- Worker bee
- Matured drone
- All members of the bee family

24. which bee family member carries food to the hive?

- Worker bee
- Drones carries only pollen
- All members of the bee family

25 Honey bees are classified as social insects because

- A. they are organized into colony with caste and division of labour
- B. they form colonies living in hives
- C. they produce honey.

27 The primary function of the queen bee is

- A. keep all the colony together
- B. to reproduce
- C. to eat.

28 Which of the honeybee caste after stinging you will die, the

- A. Queen

- B. Drone
- C. Worker.

29. Which of the honeybee caste after stinging you will NOT die, the

- A. Queen
- B. Drone
- C. Worker.

30 The comb frame where the bees keep their developing larvae is called

- A. queen frame
- B. honey comb
- C. brood comb.

31 The cell in the bees comb isshaped.

- A. hexagonal
- B. octagonal
- C. pentagonal.

32. The nursing worker bees

- A. feed the queen and take care of the developing larvae
- B. defend the colony
- C. clean the cells and store nectar and pollen in it

33. How many cells are on 1 square decimeter of honeycomb (on both sides)?

- A) 500
- B) 800
- C) 1200

34. When bees become aggressive?

- A) In the absence of harvest when the atmosphere is charged (wind, clouds, etc.)
- B) When we have inadequate protection equipment;
- C) Before starting honey extraction.

35 How many bees can be found in a strong colony in the summer?

- A. 10,000 – 30,000
- B. 20,000 – 40,000
- C. 30,000 – 50,000
- D. 40,000 – 60,000

36 The last task in the life of a bee is:

- A. cell polishing
- B. nectar collection
- C. honeycomb building
- D. larva feeding

37 Bee venom is produced by:

- A. worker bees and drones
- B. drones and queens

- C. worker bees and queens
- D. drones and laying worker bees

38. What do bees do in winter?

- a. hive chores which they do not have the time to do during the season
- b. they compress in a cluster and thus control the temperature of the colony

39. How do bees build comb in the hive?

- a. from top to bottom
- b. from bottom to top
- c. There is no rule

40. What is the temperature in the hive, where there is brood inside?

- a. temperature depends on the weather
- b. from 33 to 35 degrees C.
- c. more than 39 degrees C

41. At which outside temperature do bees disband the winter cluster and begin to collect pollen and nectar?

- a. 6 °C
- b. 12 °C
- c. 17 °C

42. In what kind of cell does the development of pupa continue?

- a. in an uncapped cell
- b. in a capped cell

43. How many honey bees could you find in a healthy colony, at its peak?

- a) 5,000 to 6,000 bees
- b) 1,000,000 bees
- c) Upto 50,000 to 60,000 bees
- d) About 1,000 bees

44. A honey bee colony is a super-efficient organisation – of what?

- a) About 3 queens, and a combination of knights and soldiers
- b) A queen, a beekeeper, and a hive
- c) A queen, workers and drones
- d) Honey bees and houseflies

45. In the act of feeding, honey bees are also communicating with each other.

This is known as:

- a) trophallaxis
- b) anaphylaxis
- c) prophylaxis
- d) swarming

PART 2

1. What is the optimum period for inspecting a colony?

- a. Every 2 days
- b. Every 9 days
- c. Every 21 days

2. What is the queen colour code for a year ending in 6?

- a. White
- b. Green
- c. Red

3. At what time of the day should bees be fed if supplementary feeding is required?

- a. Morning
- b. Afternoon
- c. Evening

6. What is the colour, queens are marked in 2018 ?

- o blue
- o white
- o yellow

7. Which of these is not a hive?

- 1) WBC
- 2) CBD
- 3) GBE

8. Crossbreeding of various geographic strains produced

- 1) Buckfast bee
- 2) Carnolian honeybee
- 3) Italian bee

9. Containers of the following material are not suitable to store honey

- 1) plastic
- 2) copper
- 3) glass

10. The season suitable for split formation is

- 1) spring
- 2) summer
- 3) autumn

12. The wood of the following trees not suitable for beehive construction

- 1) spruce
- 2) pine tree
- 3) oak

13. Marking of queens is made with one the following number colors every year, in the right order

- 1) 5 colours
- 2) 4 colors
- 3) 3 colors

14. Bee escape is a device to

- 1) remove bees from a honey chamber
- 2) settle a swarm into the beehive
- 3) perform requeening

15 - We marked the queen with a paint to make her :

- To live long time
- To prevent her from flying
- Easier to find

16 – There are many color ,each one for two ended years.The white color for:

- Year ended by (2 or 7)
- Year ended by (4 or 9)
- Year ended by (1 or 6)

17 – For what the beekeeper use the smoker :

- To afraid the bees
- To calm the bees
- To slept the bees

18 How beekeeper feeds bees?

- Milk
- Sugar
- Herbs
- Fruits

19 How is called the International Association of beekeepers?

- FIS
- FIFA
- IOC
- Apimondia

20. Many beekeepers cut and mark their queen. What is the best moment to do that?

- a. In the spring as the *nation* begins to grow
- b. A few days after birth

c. When populating the queen cultivation cabinets

22. Suppose a hive without a queen consists of approximately 80% from drones. What is the best action with such a hive?

- a. You can not do anything more with it, so cleanup
- b. Unite with the help of a newspaper with a neighboring /hive
- c. If the hive without a queen is standing next to another hive move the queen-less hive elsewhere and let fly in at the good hive.

23. The box where the colony of bees is kept is called

- A. drawer
- B. nest
- C. hive.

24. The equipment used to puff the bees to make them gentle is called

- A. hive tool
- B. smoker
- C. capping knife.

25. Which of the following habit you must avoid when following your father to the apiary?

- A. Do not make noise
- B. Do not use perfume
- C. Wearing loose and unprotective dresses

26. *Apis* is a word popularly used for beekeeping events. Why?

- A. It is just an assumption
- B. it is the scientific name of bees
- C. It is a coincidence.

27. Which of the following is best used to feed your bees during pollen and nectar scarcity?

- A. natural honey
- B. sugar syrup
- C. starch syrup.

28. What colors are used for marking the queens?

- A) green in 2014
- B) red in 2015
- C) red in 2016

29. How to prevent natural swarming?

- A) by destroying the queen cells
- B) by controlled artificial propagation
- C) by moving bees on another hive

30. Which of the following tools have changed radically beekeeping?

- A) movable frame
- B) hive tool
- C) smokers

31. What is the purpose of the first spring inspection of bees?

- A) presence and status of queen
- B) amount of water
- C) number of died bees

32. What signs characterize pilfering?

- A) all bees stay in hive for guarding
- B) bees are died in front of hive
- C) bees fighting at the entrance of hive

33. Which of the following bees families we need for grafting when raise queens

- A) donor family (selection)
- B) starter family
- C) raising family (nurse)

34. What are the recommended methods for marking queen?

- A) cutting of wings
- B) application on the thorax of a color established by international conventions
- C) using a sign on the hive (thumbtack, paint etc).

35. The undesirable fermentation of honey is favored by:

- A) The presence of unwanted residues;
- B) The water content of the honey and the temperature in the warehouse
- C) Air temperature and humidity

36. What criteria are used in assessing the power of bee families?

- A) Number of frames occupied by bee
- B) The presence of drone brood
- C) Number of frames in the hive

37 What do we call brood?

- A. all bee development stages, eggs included
- B. all bee development stages, eggs excluded
- C. uncapped bee development stages
- D. capped bee development stages

38 The A-marked queen is at the moment busy with:

- A. cell inspection
- B. cell polishing
- C. honey extraction

D. egg laying

39 Which of the items should a honey-extraction room be equipped with?

- A. sieve
- B. bee escape
- C. smoker
- D. decrystilizador

40 The most dangerous stinging occurs in the area of:

- A. legs
- B. arms
- C. head
- D. back

41. Which purpose do we use beekeeping forks for?

- a. for removing wax covering honey
- b. for detection of bee brood
- c. for cleaning the hive

42. LR-hive is named after:

- a. after Langstroth and Root
- b. after Lorenzo Langstroth
- c. after Langstroth and Ross

43. If you find a bee hive in your yard, what should you do?

- A) Go to the hardware store and get some insecticide and destroy it.
- B) Leave it alone if it is in a place where humans will not accidentally disturb it.
- C) Determine why kind of bees are in the hive and then contact a local expert to determine if the bees can be safely relocated.
- D) Light a smoky fire near the hive to drive them away and then remove the hive.

44. What's the first thing you should do if you are stung by a bee?

- A) Head immediately to the doctor's office.
- B) Spit on it, then cover it with a band aid.
- C) Remove the stinger carefully, then rinse the wound with cool water.
- D) Apply direct pressure.

45. Which colour is used for marking of queen bees according to the international colour code?

- a. Queen bees hatched in 2015 are marked yellow
- b. Queen bees hatched in 2014 are marked blue
- c. Queen bees hatched in 2015 are marked blue

PART 3

4. **How many eyes does a honeybee have?**
 - a. 2
 - b. 4
 - c. 5
5. **What is the name of the gland whose secretion is used by honeybees to gather in stray bees?**
 - a. Nasanov
 - b. Alkaline
 - c. Hypopharangeal
6. **For how many days is a developing worker bee in its larval form?**
 - a. 5
 - b. 6
 - c. 9
7. **What is the name of the device used by the honeybee to store pollen whilst foraging?**
 - a. Corbicula
 - b. Sensoria
 - c. Bracht
8. **At what age does a honeybee usually take its first flight from the hive?**
 - a. 2 days
 - b. 10 days
 - c. 20 days
9. **Where are the wax glands found on the honeybee?**
 - a. On the feet
 - b. On the thorax
 - c. On the abdomen
10. **What is the average total life span of a “summer” bee?**
 - a. 2 weeks
 - b. 3 weeks
 - c. 6 weeks

11. What is the visual spectrum of the honeybee?

- a. Ultra violet to green
- b. Ultra violet to blue
- c. Infrared to Ultra violet

9. How long is the development of worker bee from the egg stadium until the adult stadium ?

- 16 days
- 21 days
- 24 days

10. How long is the development of a drone bee from the egg stadium until the adult stadium ?

- 16 days
- 21 days
- 24 days

11. How long is the development of a queen bee from the egg stadium until the adult stadium ?

- 16 days
- 21 days
- 24 days

12. How many wings do bees have ?

- 2 wings
- 4 wings
- 6 wings

13. How many pairs of wings do bees have ?

- 1 pair
- 2 pairs
- 4 pairs

14. How many legs do bees have ?

- 4 legs
- 6 legs
- 8 legs

15. How many pairs of legs do bees have ?

- 3 pairs
- 4 pairs
- 6 pairs

16. How long do worker bees live in the summer ?

- 3 weeks
- 6 weeks
- 6 months

17. How long do worker bees live in the winter ?

- 3 weeks
- 6 weeks
- 6 months

18. How long does a queen bee live?

- 1 year
- 3 years
- 7 years

19. Where is the olfactory organ of a bee ?

- at the mouth parts
- on the antennas
- on the legs

20. What is the maximum number of eggs a queen beee can lay per day ?

- 500
- 1500
- 2000

21. How does bee wax originate ?

- from cell tissue of plants
- from glands of the thorax
- from glands of the abdomen

22. How long is the egg stadium of a worker bee ?

- 2 days
- 3 days
- 5 days

23. How long is the larval stadium of a queen bee ?

- 2 days
- 3 days
- 8 days

25. Which of these bees do not have a sting?

- 1) worker
- 2) Drone
- 3) queen

26. What colour can a bee not see?

- 1) red
- 2) blue
- 3) green

27. Which of these is not part of a bees anatomy?

- 1) Head
- 2) neck
- 3) thorax

28. The olfactory sense of bees is concentrated on :

- 1) antennas
- 2) tongue
- 3) maxillas

29. The development of a drone from egg laying to imago emergence takes

- 1) 16 days
- 2) 21 days
- 3) 24 days

32. What is the scientific name for a Honey bee

- 1) Apis
- 2) Apis mellifera
- 3) Apis buzzifera

33. How long does it take egg to turn into a mature worker bee

- 1) 24 days
- 2) 16 days
- 3) 21 days

34-How many day need the queen to emerge from their cells:

- 12-13 days
- 14-15 days
- 15-16 days

35- How many day need the drones to emerge from their cells:

- 21 days
- 24 days
- 16 days

36-How many day need the workers to emerge from their cells:

- 24 days
- 16 days
- 21 days

37- How many day need the egg to come larvae :

- 3 days
- 2 days
- 4 days

38- From which age the queen start her fertility :

- 23 days
- 18 days
- 21 days

39 - How much come long the body of a queen fertility:

- 14 - 18 mm
- 18 - 22 mm
- 11 - 17 mm

40 - From which age the drones start his fertility:

- 30 days
- 25 days
- About 38 days

41 - How much come long the body of workers :

- 12 – 15 mm
- 7 – 8 mm
- 9 – 11 mm

42 - How much come long the body of drones:

- 15 – 17 mm
- 7 – 9 mm
- 11 – 14 mm

43- The young queen stores sperm in her spermatheca it's up to:

- 2 millions
- 6millions
- One million

44-The queen mating occurs in:

- In the beehive
- Flight
- In the cell

45- How many eggs can lay the queen in one day:

- 1500eggs
- 500eggs
- 750eggs

46- The queen bee is able to control the sex of the eggs. She lays according to the:

- To the time in the year
- width of the cell
- To her age

47 - When the bees collect the nectar they mixed with the enzymes in :

- The stomach
- The proboscis

- The wax cells

49 – How long live the workers in a high season of work :

- 35 days
- 65 days
- 90 days

50 – The bee venom is a complex mixture of :

- Lipids and protein
- Protein and polypeptide
- Peptide and lipids

51 – Why the bees die after stinging human :

- Because when they stinging the venom finish from her body and the sting come empty so they die.
- Because human kill her when she stinging him
- Because their stingers which are attached to their abdomen have little hooks on them so after stinging part of her abdomen is ripped away

52 - Who's sting in the world of bees:

- Workers
- Drones
- Queen

55 - With which part of the body a bee carries pollen?

- Inside her body
- On the forward pair of legs
- On the middle pair of legs
- On the hind pair of legs

57 - What is the colour of bee blood?

- Red
- White
- Colourless
- Yellow

59 - What helps for bees to orientate flying in cloudy day?

- Ordinary (small) eyes
- Compound eyes
- Tendrils
- Feet

60 - How many bees are in 1 kilogram?

- 32000 bees
- 24000 bees
- 17000 bees
- 11000 bees

62 - How many segments consists of the rear part of the worker bee body?

- 2
- 4
- 6
- 8

63 - Does the queen sting has teeth

- Yes
- No

64 - Does drone has a sting?

- Yes
- No

69. How long does the queen-bee live?

- 6 months
- 1 year
- 3 year
- 5 year

70. how many eggs can put queen-bee during the day?

- 500
- 1000
- 1500
- 2000

81. Who does not have sting among bee family?

- Sting have all family members
- Queen-bee and drone
- Drone

82. Has bee a heart?

- Yes
- No
- Stupid question

83. What bee does after stinging?

- Dies
- Looking for other victim
- Flies home to take food

84. How much weight worker bee?

- 100 mlg.
- 100 g.
- 1 g.

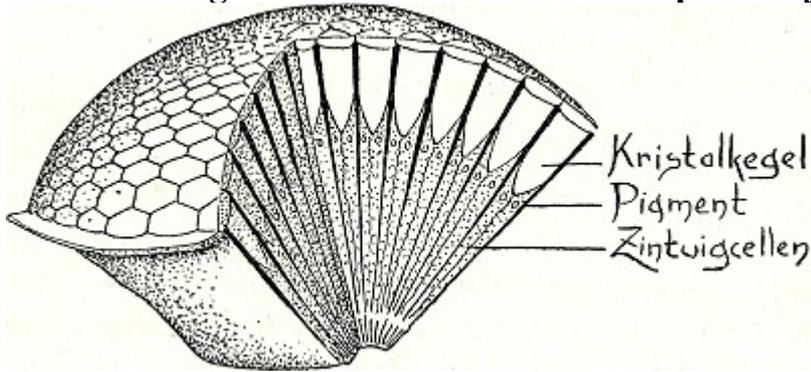
85. Which bee family members have wax glands?

- Queen-bee
- Worker bee
- Drone

86. How old does a worker bee can be when born in October?

- a. Six to seven weeks
- b. Six to seven months
- c. Until they leave with the swarm

87. For seeing bees can use their two ‘compound eyes’ or ‘facet eyes’



88 - Of how many ‘facets’ an eye of a worker bee consists? a worker bee?

- a. 60
- b. 600
- c. 6,000
- d. 60,000

89. Below are two statements – Which is / are correct?

I) Worker bBees emerge from unfertilized eggs

II) Drones develop from fertilized eggs

- a. I and II are both true
- b. I is true and II is false
- c. I is false and II is correct

d. I and II are both false 90 - The honey bee belongs to which class of insects?

- A. Diptera
- B. Hymenoptera
- C. Coleoptera

91. Where will you hold the worker bee to observe it?

- A. Head
- B. Abdomen
- C. Thorax.

92. The sound made by flying bees is.....

- A. buzzing
- B. zimmling
- C. yawning.

93. The worker bees has a leg modified intofor carrying pollen.

- A. pollen brush
- B. honey comb
- C. pollen basket.

95. How many eyes has a bee?

- A) 3 compound eyes and 2 simple eyes
- B) 2 compound eyes and 3 simple eyes
- C) 2 compound eyes and 2 simple eyes

96. What the bee has on the thorax?

- A) 3 pairs of legs and 2 pairs of wings
- B) 2 pairs of legs and 2 pairs of wings
- C) 2 pairs of legs and 3 pairs of wings

98. What is parthenogenesis?

- A) reproduction from a fertilized egg
- B) reproduction from an unfertilised egg
- C) the reproduction from an unfertilised egg and fertilized egg.

100. What is the lifespan of a worker bee?

- A) 30-40 days in winter
- B) 40-60 days in winter
- C) 5-6 months in winter

101. What role does queen pheromone ?

- A) attracts other queen
- B) attracts drones for mating
- C) inhibis the ovarian development in other queen

102. The reproduction of bees is:

- A) only sexual (fertilized eggs)
- B) only parthenogenetic (unfertilized eggs)
- C) both types (fertilized and unfertilized eggs) based on the caste to which the individual belongs

103. Define the term polyandry:

- A) Fertilization (mating) of queen with a large number of drones (10-20 individuals);
- B) Fertilization (mating) of queen in several mating flights;
- C) Storing of sperm from multiple drones after the queen has mated in spermatheca.

104 - The entire worker-bee development time amounts to:

- E. 24 days
- F. 21 days
- G. 19 days
- H. 16 days

105 - Histolysis in the queen development takes place on:

- E. day 8
- F. day 9
- G. day 10
- H. day 11

106 - A collecting worker bee's life time amounts to:

- E. 15 days
- F. 20 days
- G. 30 days
- H. 35 days

107 - What Latin name is used to describe central-European bee?

- A. *Apis mellifera ligustica*.
- B. *Apis mellifera capensis*.
- C. *Apis mellifera caucasica*.
- D. *Apis mellifera mellifera*.

109 - How many ocelli can be found upon a bee's head?

- A. 2
- B. 3
- C. 4
- D. 5

110 - Feeler cleaning organ can be found on:

- A. the first pair of legs
- B. the second pair of legs
- C. the third pair of legs
- D. every pair of legs

112 . On which part of the bee body are the wings and legs attached?

- a. on the thorax and abdomen
- b. on the thorax
- c. on the head

113. What kind of eyes does the bee have?

- a. compound eyes
- b. such as all the other insects
- c. compound and simple eyes

114. What kind of eggs is queen bee laying?

- a. fertilized and unfertilized
- b. unfertilized
- c. fertilized

115. What is hatched from fertilized eggs?

- a. queen bee or worker bee
- b. queen bee
- c. drone

117. How many days after mating does the mated queen start laying eggs?

- a. 2-3 days
- b. 4-5 days

118. How many days does the transformation of the drone larvae last?

- a. 5 days
- b. 3 days
- c. 7 days

119. How is the “blood” of bees called?

- a. xylooligosaccharides lymph
- b. hemolymph
- c. perilymph

121. Which of these is NOT a real species of bee?:

- a) The Hairy Footed Flower Bee
- b) Common Masked Bee
- c) The Black-Kneed Bee
- d) Sharp-tailed bee

122. For how long can a queen honey bee live? (assuming she is not killed by predators, and does not catch diseases):

- a) Possibly 3 – 4 years.
- b) About 6 weeks
- c) Possibly 24 - 36 weeks
- d) Up to 10 years

123. How many types of bees are there in the whole world?

- a) About 25,000 known species, with probably more to be discovered.
- b) About 15,000 known species, with probably more to be discovered.
- c) About 100,000 species, already discovered.
- d) Around 100.

124. Assuming good health, and that neither disease nor predators kill them, which of these lives the longest?

- a) The bumblebee queen
- b) The honey bee drone
- c) The honey bee queen
- d) The mason bee.

125. Which solitary bee cuts neat little holes from leaves, with which it constructs the egg cells for its nest? (note – this causes no harm to the plant):

- a) The Chainsaw-Bee
- b) The Leafcutter Bee
- c) The Hole Cutting Bee
- d) The Plant Cutting Bee.

126. Honey bees can be found in hives made by humans. But where would they prefer to nest if in the wild?

- a) Underground, in a deep hole they excavate themselves.
- b) In a ready-made, abandoned fox hole.

- c) In a hollow tree trunk or in the cavity of a building.
- d) In an open space on a tussock of grass.

127. Identify the bumblebee species below:

Is it:

- a) *Bombus fluffibottomus* - The Fluffy-bottomed bumblebee
- b) *Bombus bigbottomus* - The Big-bottomed bumblebee
- c) *Bombus ruberbottomus* - The Red-bottomed bumblebee
- d) *Bombus lapidarius* - The Red-tailed bumblebee

129. Bees belong to which insect order?

- a) Hymenoptera
- b) Apidoptera
- c) Apidae
- d) Lepidoptera

130. Which of these bees collects pollen on the underside of its abdomen, rather than in pollen baskets on the hind legs?

- a) The honey bee
- b) The leafcutter bee
- c) A specific species of bumblebee: *Bombus vestalis*
- d) The Winkpicker bee (US native species)

131. Which of the following is a species of Carpenter bee? (Only one of these is correct – the rest are invented!):

- a) *Xylocopa woodcitus* – The Woodcutter Carpenter Bee
- b) *Xylocopa negra* – The Black Carpenter Bee
- c) *Xylocopa violacea* – The Violet Carpenter Bee
- d) *Xylocopa lapidarius* – The Red-Tailed Carpenter Bee

132. How many native species of bumblebee does North America have? Is it about....

- a) 600
- b) 50
- c) 2000
- d) 250

133. How many times per second do bumblebees beat their wings?

- a) 100 times per second
- b) 200 times per second
- c) 500 times per second
- d) 1000 times per second

134. The world's smallest bees measure how long?

- a) 1/2 inch
- b) 1/8 inch
- c) 1/12 inch

135. At what speed do worker bees fly?

- a) 5 miles per hour
- b) 10 miles per hour
- c) 15 miles per hour

136. A bee's body is divided into how many parts?

- a) three
- b) five
- c) seven

137. Stingers evolved from an organ known as what?

- a) ovipositor
- b) hemothorax
- c) proboscis

138. Why are bumblebees able to sting repeatedly?

- a) They have many stingers.
- b) They have a stinger with no barbs.
- c) They break off small pieces of their stinger each time they sting something.

139. The period of growth and development through which bees go is called what?

- a) adolescence
- b) gestation
- c) metamorphosis

140. How many species of bees are there on Earth?

- A) about 500
- B) about 7,500
- C) about 20,00
- D) about 40,000

141. It can be easy to confuse honey bees with bumble bees. Bumble bees are often thought of as large, fuzzy bees that "bumble" about, but they actually come in many sizes. Honey bees are more uniform in size, less hair, and have the more distinct gold and white striped associated with bees. One of the more important distinctions between these two types of bees is their stingers. What is it?

- A) Honey bees can only sting once, but bumble bees can sting repeatedly.
- B) Bumble bees have no stingers at all, and only male (drone) honey bees have stingers.
- C) Only the largest bumble bees have stingers, but all honey bees can sting.
- D) Bumble bees will only sting when they are collecting pollen, while honey bees are likely to sting at any time.

143. The oldest bee fossils date back to when?

- a) 8 million years
- b) 80 million years
- c) 800 million years

144. What is the average size of the largest species of bee?

- a) 1 1/2 inch long
- b) 3 inches long
- c) 6 inches long

145. More eggs are regularly laid into cells by

- 1) old queens
- 2) young queens
- 3) worker bees

147. What cast of bee is male?

- 1) Drone
- 2) Queen
- 3) worker

PART 4

1 On average, how far does a swarm travel when it first emerges from a colony?

- d. 2km
- e. 100m
- f. 10m

2 Why do bees swarm?

- g. To annoy the beekeeper
- h. To make a new colony
- i. To escape disease

3 What is the most common time of day for swarms to emerge?

- j. 08h00
- k. 14h00
- l. 19h00

4. To prepare for swarming the queen mostly lays eggs...

- o in queen cups on the upper part of the comb
- o in queen cups in the middle of the comb
- o in queen cups on the lower part of the comb

5. Usually the first swarm leaves the bee hive with.....

- o a young queen
- o an old queen
- o several queens

7- During the swarming season the old queen:

- Stay with the new queen in the same beehive
- The new queen after the fertility leave with some quantity of bees
- Leave with the prime swarm

8- How many drones will mate the surviving virgin queen:

- 2 - 4 drones
- 12-15 drones
- 17-20 drones

9- How many day the queen return to the drone congregation area :

- Several day
- One day
- Two days

10 – When a colony preparing to swarm ,bees build large number of queen cells , about:

- 14 to 20 cells queen
- 6 to 12 cells queen
- 20 to 30 cells queen

11 – The best time of the year to producing good quality of queen is :

- In the spring
- In the summer
- In the autumn

12 – The suitable weather for mating of queen and drones on a day with temperature between :

- 11 to 19 degrees
- 21 to 27 degrees
- 7 to 16 degrees

13. A colony of bees found hanging on a tree is a

- A. ball
- B. swarm
- C. Gang.

14. When the queen comes out of the hive?

- A) during forage
- B) for mating
- C) when died

15. How is preparing for natural swarming a family of bees?

- A) The bees gather more pollen than nectar.
- B) Queen cells are created and the queen lays eggs;
- C) The bees are building combs in all available space;

Task 5

16 A new queen will not appear in a colony when:

1. the bees feel like swarming
2. the old queen has disappeared
3. the bees want to replace the queen
4. the old queen has droned

17. How do bees reproduce naturally?

- a. by swarming
- b. with the intervention of the beekeeper
- c. by supersedure

PART 5

4. Name a key characteristic of European Foul Brood

- a. Raised cappings
- b. Strong smell
- c. Slumped larvae

5. What is varroa?

- a. A fungal infection
- b. A virus
- c. A parasitic mite

6. Name the most obvious visual sign of American Foul Brood?

- a. Sunken cappings
- b. Agitated bees
- c. Dwindling colony

7. If you see white mummies in cells in the brood nest, what might it be?

- a. Chalk brood
- b. European Foul Brood
- c. Varroa

8. What is the causative agent of sac brood disease?

- a. A virus
- b. A bacterium
- c. A fungus
- d.

9. How would you detect the presence of nosema?

- a. Agitated bees
- b. Faecal staining

c. Seeing small “rice-like” objects through a microscope

8. Varroa mites belong to the class of... ?

- insects
- spiders
- reptiles

9. Varroa mites lay their eggs in...?

- queen cups
- drone cells
- worker bee cells

10. Why do varroa mites mainly lay their eggs in drone cells ? attack Warum befallen

- because they are longer uncapped
- because they are shorter capped weil sie besonders kurz verdeckelt sind
- because they are longer uncapped

11. Why does the beekeeper use formic acid ?

- to disinfect the frames
- to fight the wax moth
- to fight the varroa mite

12. Why does the beekeeper use sodium hydroxide solution ?

- to disinfect the frames
- to fight the wax moth
- to fight the varroa mite

13. How does the beekeeper fight varroa during honey yield ?

- with formic acid
- with lactic acid
- with removal of a drone frame

15. Why are bees and other pollinators, experiencing problems and declines?

- a) It's because of colony collapse disorder (CCD).
- b) It's because of varroa mites.
- c) It's because of a combination of factors, including habitat loss, pesticides, and diseases.
- d) It's because there are not enough beekeepers.

16. The collapse of honeybee colonies has become a serious concern in recent years. What do scientists think is causing bee colonies to die suddenly?

- A) pesticides
- B) viruses
- C) pollution from coal-fired power plants

D) all of the above

E) no one knows for sure

17. Which causes the most damage?

a.i. cold

a.i. dampness

a.ii. sunshine

- Why should antibiotics not be used in honeybee colonies?

- Because bees are allergic to antibiotics
- Because beekeepers can be allergic to antibiotics
- Because they can get into the human food chain

18. Formic acid is used to treat

1) American foul brood (AFB)

2) nosema disease

3) varroatosis

PART 6

1 What is the usual maximum distance for a honeybee to forage?

- m. 500m
- n. 3km
- o. 20km

2 How do honeybees indicate that a flower has recently been visited?

- p. By damaging the flower
- q. By leaving a pheromone
- r. By scattering pollen

3 How does a flower indicate that it has been pollinated?

- s. By dying
- t. By a physical change of the anther
- u. By closing

4 What use is pollen to a colony?

- v. It provides protein
- w. It provides carbohydrate
- x. It is used to build comb

5. How do worker bees transport the pollen tot he bee hive ?

- o in the body
- o in the hair oft he body
- o on the hind legs

6. How do worker bees transport the nectar to the bee hive ?

- o in the body
- o in the hair oft he body
- o on the hind legs

7. Where do bees collect propolis ?

- o on leaves
- o on buds
- o in flowers

8. For what do bees use Gelee Royal?

- o for sealing and disinfecting

- o food for the larvae
- o to raise young queens

9. Pollen is a source of ...?

- o carbohydrates
- o fat
- o proteins

10. Nectar is a source of ...?

- o carbohydrates
- o fat
- o proteins

11. The waggle dance indicates....

- o a swarming coming soon
- o the direction and distance of a food source
- o the birth of a new queen

12. The round recruitment dance indicates...

- o a close food source
- o a harmonious situation in the hive
- o healthy brood

13. Where do bees get propolis?

- 1) Sap of trees
- 2) flowers
- 3) Grass

14. Which of these do bees carry on their hind legs?

- 1) nectar
- 2) pollen
- 3) water

15. Bees store honey in a beehive

- 1) on the top
- 2) on the walls
- 3) on the bottom

16. Poppy provides to bees

- 1) nectar
- 2) pollen
- 3) both nectar and pollen

18. The last flow is provided by the following plant species

- 1) raspberry
- 2) sunflower
- 3) rape

19 - The workers collect the pollen to us as food for the developing of :

- Drones only
- Queen only
- Brood (honeybee)

21 – Why the bee make the honey :

- To give for the beekeeper and feed her colony
- To feed their young and to eat during the winter
- To give for the queen to lay a lot of eggs

23. Does drone collect the nectar?

- Yes
- No

25. The bees forage for

- A. pollen, nectar and water
- B. pollen only
- C. pollen and nectar.

26. What is a queen bee larvae fed with?

- a. with royal jelly
- b. with royal jelly, blended with pollen and honey
- c. with honey

27. Which of the following flowers provides little nectar and pollen and so is NOT much use for bees?

- a) Ornamental Bizzy Lizzy
- b) Ivy - hедера helix
- c) Brambles
- d) Dead nettle

28. What do bees collect from flowers?

- a) Honey and pollen
- b) Nectar and other insects
- c) Nectar and pollen
- d) Sugar and nectar

29. Which of these tips will NOT help bees?

- a) Include wildflowers and herbs in your garden, along with other good bee plants.
- b) Use lots of insecticides to kill as many insects as possible.
- c) Stop using insecticides in the garden.
- d) Ensure you have good bee plants flowering throughout the seasons.

30. Bees collect pollen. But to which part of the flower is pollen attached?

- a) Stigma
- b) Sepals

- c) Carpels
- d) Anther

31. What do bees use to collect pollen?

- a) its tongue
- b) its hair
- c) its legs

32. Bees pollinate the vast majority of food crops. Which of these crops is NOT pollinated by bees or insects?

- A) Wheat
- B) Soybeans
- C) Vanilla
- D) Apples

33. What is not present in the normal honeybee colony during winter?

- a. drones
- b. honey
- c. pollen

PART 7

1 What is the approximate water content of honey?

- y. 18%
- z. 25%
- aa. 12%

2 What can the diastase level tell you about honey?

- ab. Its flavour
- ac. Its colour
- ad. Its age

3 What is honeydew?

- ae. Honey collected early in the morning
- af. Honey collected from insect secretions
- ag. Honey collected from other countries

4. For what do bees use propolis ?

- for sealing and disinfecting
 - food for the larvae
- production of Gelee Royale

5. Propolis does not operate in colonies as a means of

- 1) disinfection
- 2) bonding
- 3) comb building material

6. One liter of honey weighs approximately

- 1) 1.15 kg
- 2) 1.25 kg
- 3) 1.45 kg

7. The color of pure melted out bees wax is

- 1) white
- 2) brown
- 3) yellow

8. New virgin queen develop in enlarged cells through differential feeding of:

- Honey
- Royal jelly
- Pollen

9- The honeybee used the propolis to :

- To feed the brood
- To make the wax cells
- aid with ventilation and at the entrance of hives

10 – At which age the bees produce the bee wax

- 5th till 11th days from her
- 3th till 9th days from her life
- 10th till 16th days from her life

11. What is not the bees product?

- Honey
- Beeswax
- Nectar
- Bee venom

12. From where bees get wax?

- Apart from their body
- Collects from the tree leaves and buds
- Evolved from pollen

13. What is braamraat?

- a. Honeycombs being built as bees mainly on the blackberry extract nectar
- b. Honeycombs being built as bees collect pollen primarily on the blackberries
- c. Honeycombs falling outside, but mainly built on the upper slats of the windows

14. What does it mean to you bees in the summer looks drink water, for example at the edge of a pond in the garden?

- a. The foraging bees have thirst caused by many flights
- b. There is not collected much nectar
- c. The nectar is too thick and must be diluted

15. What is the usefulness of honey for bees?

- a. Honey makes the flight muscles stronger
- b. Honey is an excellent resource for *sore* throat
- c. Honey is fuel to keep bees and brood at temperature

17. The period in which the worker bees produce honey is called

- A. swarming season
- B. honey flow
- C. dearth season.

18. Good honey will not

- A. taste sour
- B. smell foul
- C. be coloured.

19. Honey can not be processed into

- A. wine
- B. soap
- C. bleach.

20. The wine made from honey is called

- A. mead
- B. honey gin
- C. honey wine.

21. Which of the following substance are not found in nectar?

- A) lipid
- B) fructose
- C) glucose

22. Which of the following types of honey crystallize in a longer time?

- A) Rape honey
- B) Acacia honey
- C) Sunflower honey

23. What distinguishes the forest honey from flower honey?

- A) Dark color
- B) Particular taste qualities
- C) Lack of specific pollen grains

24. What are the factors influencing the quantity of honey produced by bees that can be obtained per hectare?

- A) weather condition and landform
- B) power of bees' colony and nectar secretion
- C) type of hive and number of frames

25. Propolis is defined as:

- A) A natural product that bees produce it using labial glands;
- B) A natural product that bees secrete it from the wax-producing glands.
- C) A natural product of resinous mixture that bees collect and process from tree buds and stems of plants.

26. Stored and fermented pollen is called:

- I. pollen
- J. bee bread

- K. pollen pellet
- L. propolis

27. Bees utilise propolis for:

- I. nest building
- J. larva feeding
- K. cell polishing
- L. wax secretion

28. Which honey crystallises slowly?

- I. multifloral
- J. rape
- K. acacia
- L. buckwheat

29. How does the light affect honey?

- a. it corrupts it
- b. it colours it bright
- c. it makes it more rich

30. At what temperature does the beeswax melt?

- a. from 30 to 35 degrees C
- b. from 62 to 64 degrees C
- c. from 40 to 42 degrees C

31. How much honey can a single honey bee make in its life time?

- a) About a twelfth of a teaspoon
- b) About a tablespoon
- c) About an eighth of a table spoon
- d) About a jar

32. For what reason do honey bees make honey?

- a) For feeding their larvae.
- b) For humans to eat.
- c) For storing food to feed the colony over winter when they are unable to forage.
- d) They have nothing better to do.

33. Which of the following formulae best describes honey (all are nonsense except one!):

- a) Nectar + Pollen + Sugar + Wax = Honey (fructose + sucrose)
- b) Sucrose (nectar) + invertase (bee enzyme) = fructose + glucose (honey)
- c) Glucose + Fructose + Invertase + Pollen + Water = Honey
- d) Sucrose (bee enzyme) + invertase + sunlight + wax enzyme = honey.

34 – The bee venom use in the form of cream against:

- The pain of arthritis
- The headache
- The skin diseases-eczema –

35. Mature honey should contain up to

- 1) 10% of water
- 2) 20% of water
- 3) 30% of water

PART 8

1. The bees help the humanity to continue her life by :

12. Collect the honey
13. Pollination of almost of civilization food supply
14. Using as medicaments

2. Why we must take care of bees:

- Because they are small insects and need our help
- Because without bees there is no food and life cannot be continued
- Because they made for us the sweet honey

3. Due to the transfer of pollen from flower to flower the bees have much utility.

What is good?

- a. They will fertilize the flowers
- b. They provide cross-fertilization
- c. They prevent the pollen of apples to reach that of pears

4. The most significant reason that all species of bees are important is because:

- a) They make honey.
- b) They pollinate plants, which provide humans and wildlife with food, and ensure biodiversity.
- c) They are pretty.
- d) If there were no bees, the companies selling beehives and empty jars for honey, would go out of business.