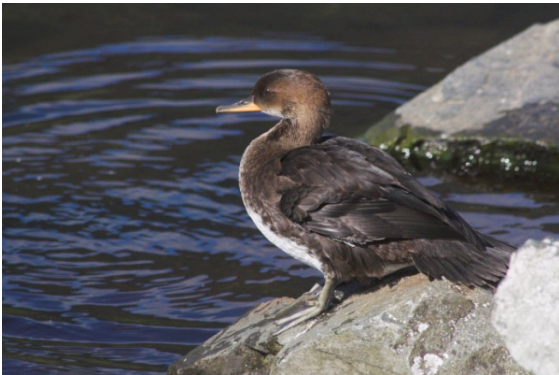


1. You will have 50 mins to finish this test.
2. Each "station" should time you around 3-4 mins.
3. You are expected to know everything listed in the official bird list.
4. Unless the question specifies, please identify the birds to the lowest classification on the official bird list.
5. If you have any questions during the test, send private message to the event supervisors via the Scilympiad platform.
6. Q2#7, Q3#6, and Q7#4 are tiebreakers. If the ties still can't be broken, the team's overall score on Q1 will determine the ranks



(A)



(B)

(Text block #1)

1. (2.00 pts) Referring the two birds A and B shown in Text block #1,
1. Identify bird A.
  2. Identify bird B.

**2. (5.00 pts)**

Referring the two birds A and B shown in Text block #1,

3. In which period of a year (give month) will a male A look similar to a female A? During this period, how should people differentiate a male A from a female A?
4. Describe how an adult A's feet is different from a juvenile A's feet in terms of color.
5. Male A normally lose its flight ability for a certain period of time during a year. Approximate the length of this flightless period.

**3. (4.00 pts)**

Referring the two birds A and B shown in Text block #1,

6. What makes A capable of enduring high environmental temperature?
7. Compare the calls of a male A bird with a female A bird.
8. Describe how is bird B sexually dimorphic.

**4. (3.00 pts)**

Referring the two birds A and B shown in Text block #1, (fill the first blank #9 and the other two blanks for #10)

9. How many functional primaries does B have?
10. Why did the eastern (in U.S.) population of bird B fell a hundred years ago?

**5. (3.00 pts)**

Referring the two birds A and B shown in Text block #1,

11. Bird B is indigenous to North America but sometimes they "roam" to Europe. Name three European countries that B might visit.

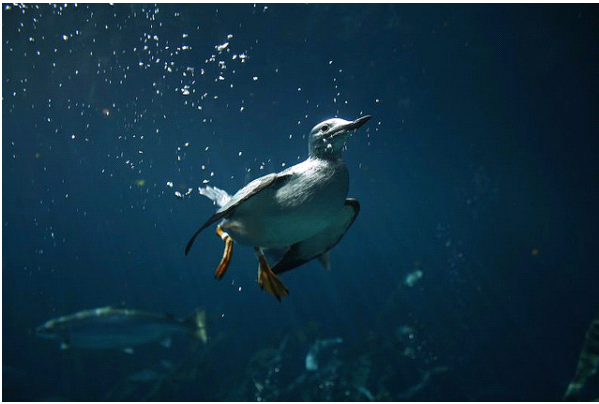
**6. (3.00 pts)**

Referring to the two birds A and B shown in Text block #1,

12. Explain why does B have a good underwater vision.
13. How thick are B's eggs approximately (give number)?



(A)



(B)

(Text Block #2)

7. (2.00 pts) Referring the two birds A and B shown in Text block #2,

1. Identify bird A.
2. Identify bird B.

8. (6.00 pts) Referring the two birds A and B shown in Text block #2,

3. Describe the courtship display by male A birds during the breeding season.
4. Where and when was this bird first discovered?
5. During bird A's migration, why males and females are normally found in separate locations?

9. (3.00 pts) Referring the two birds A and B shown in Text block #2,

6. List three possible nesting sites bird A might choose.

- 10. (3.00 pts)** Referring the two birds A and B shown in Text block #2,
- 7 (TB 1). What type of feet does bird A have? What is the characteristic of this type of bird feet?
8. Which population (give geographic location) of bird A is classified as "near threatened" by IUCN?

- 11. (3.00 pts)** Referring the two birds A and B shown in Text block #2,
9. What is the typical average life span of bird B?
10. List two bird diseases that influence B's survivability.

- 12. (7.00 pts)**  
Referring the two birds A and B shown in Text block #2,
11. B's plumage color would most likely to fade in which period of a year?
12. Bird B has a very high wing-loading ratio and a low aspect ratio. What do these mean to B's flight?
13. Bird B adopts two types of appeasements in response to other bird's attack. Name these two types of appeasement and also name the specific three steps involved in one of the appeasement type.

- 13. (3.00 pts)** Referring the two birds A and B shown in Text block #2,
14. From the official bird list, identify three predators of B.



(A)



(B)

(Text Block #3)

14. (2.00 pts) Referring the two birds A and B shown in Text block #3,

1. Identify bird A.
2. Identify bird B.

15. (7.00 pts) Referring the two birds A and B shown in Text block #3,

3. Describe how people distinguish a male A from a female A.
4. Describe bird A's typical habitat.
5. What are the two important factors that influence bird A's nest site choice? Most of the time, why can't A find an optimal place to nest?

16. (2.00 pts) Referring the two birds A and B shown in Text block #3,

- 6 (TB 2). What is the most effective technique for bird A's population conservation?
7. What is the typical shape of A's egg?

17. (2.00 pts) Referring the two birds A and B shown in Text block #3,

8. Feathers will start to emerge on a juvenile bird B after how many days of its birth?
9. What's the color of bird B's feet?

18. (5.00 pts) Referring the two birds A and B shown in Text block #3,

10. Describe some changes in B's appearance (adult) during the breeding season.

11. What kind of sound will B produce during its snap display?

12. Before the enactment of the Migratory Bird Treaty Act in 1916, bird B became almost extinct in which U.S. State?



(A)



(B)

(Text Block #4)

19. (2.00 pts) Referring the two birds A and B shown in Text block #4,

1. Give the scientific name of bird A.
2. Give the scientific name of bird B.

20. (7.00 pts) Referring the two birds A and B shown in Text block #4,

3. What's the typical difference in bill length and average mass between a male A and a female A?
4. What type of feet does A have? What type of feet does B have? What's the difference between these two types of feet?
5. Describe the uniqueness of bird A's eyes and explain how does the unique eyes feature benefit A.

- 21. (3.00 pts)** Referring the two birds A and B shown in Text block #4,
6. Bird A normally arrives its northeastern (in U.S.) breeding colonies in which month?
7. List two U.S. state where you could find A.

- 22. (5.00 pts)** Referring the two birds A and B shown in Text block #4,
8. Why does A prefer to have other bird species in its habitat?
9. How do B's male and female species differ in body length (be general here)?
10. What type of mode of life does bird B adopt during the nonbreeding season?

- 23. (3.00 pts)** Referring the two birds A and B shown in Text block #4,
11. B is known to consume other birds' eggs. From the official bird list, list three birds whose eggs might be targeted by B.

- 24. (5.00 pts)** Referring the two birds A and B shown in Text block #4,
12. During bird B's incubation period, which three factors affect its body energy cost?
13. Name the two types of aerial displays in B's courtship.



(A)



(B)

(Text Block #5)

25. (2.00 pts) Referring the two birds A and B shown in Text block #5,

1. Identify bird A.
2. Identify bird B.

26. (6.00 pts) Referring the two birds A and B shown in Text block #5,

3. Bird A will be considered as an "adult" at what age? What's the difference in plumage color of an adult A and a juvenile A?
4. Describe how does bird A follow Bergmann's rule.
5. Bird A does not follow Allen's rule. Name one bird from the bird list that follow both Allen's rule and Bergmann's rule.

27. (3.00 pts) Referring the two birds A and B shown in Text block #5,

7. A sets its habitat in various geographic areas. Identify a common feature that is generally shared within all of its habitat.
8. Name one Alaska national park in which you could find A.
9. At least how many hunting techniques does bird A have?

28. (5.00 pts) Referring the two birds A and B shown in Text block #5,

10. Bird A was first described in which book by whom?
11. When would bird B do a swanning display?
12. Describe some characteristics of B's nest site.



29. (2.00 pts) Referring the two birds A and B shown in Text block #5,

13. Bird B usually produce a descending whinny call. What's the minimum number of note in one descending whinny call?

14. How many notes are in the spring peeper call (this call only occurs during spring migration) of bird B?

30. (13.00 pts)



(A)

Picture A depicts archaeopteryx, an early bird. This famous fossil specimen was discovered in Solnhofen Limestone, Germany.

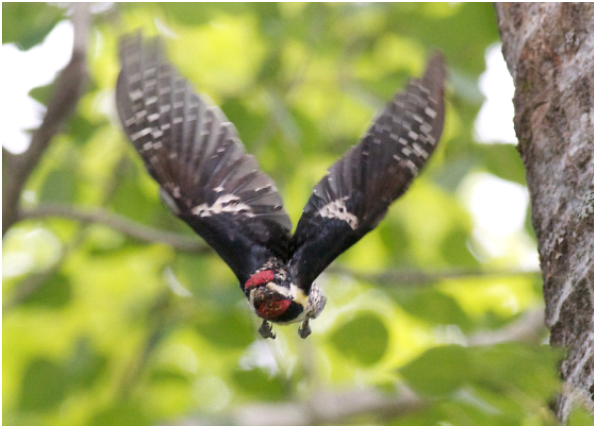
1. Scientists determined that archaeopteryx had furcula. What does having this bone mean to archaeopteryx? In addition, please describe the function of furcula.
2. Scientists find out that the sternum of archaeopteryx is really flat. What's the difference in sternum structure between archaeopteryx and modern bird? What's the significance of this difference in sternum structure?
3. Archaeopteryx has a set of gastralia, or belly ribs, but modern birds do not. Gastralia are important because they provide attachment points for abdominal muscles and other tissue. Why do you think modern birds lose it?
4. Scientists have recently found out that archaeopteryx's flight behavior is really similar to that of modern pheasants. Based upon your knowledge about the pheasants' flight, describe archaeopteryx's flight behavior.



(B)

Picture B depicts brachiosaurus, a dinosaur who lived in late Jurassic.

5. Scientists have found out that air sacs play an important role in brachiosaurus' respiratory system, just like those modern birds. Based upon your knowledge on air sacs function, describe how does having air sacs aid brachiosaurus's respiration.
6. Just like what they do in modern birds' body, the air sacs forms the diverticula in brachiosaurus. Describe the function of diverticula in brachiosaurus.



(A)



(B)

(Text Block #6)

31. (2.00 pts) Referring the two birds A and B shown in Text block #6,

1. Identify the genus of bird A.
2. Identify the genus of bird B.

32. (2.00 pts) Referring the two birds A and B shown in Text block #6,

3. Explain the etymology of the genus of bird A.

4. Explain the etymology of the genus of bird B.

- 33. (7.00 pts)** Referring the two birds A and B shown in Text block #6,
5. Name one bird from the bird list that appears to be an close ally with bird A.
  6. Describe the difference in appearance of a male A and a female A.
  7. List three aspects that are not well studied by the scientists about bird A.

- 34. (2.00 pts)** Referring the two birds A and B shown in Text block #6,
8. In how many U.S. states you could possibly find bird B?
  9. How many functional rectrices does B have?

- 35. (8.00 pts)** Referring the two birds A and B shown in Text block #6,
10. What's an obvious difference between B and other birds under bird B's family?
  11. Describe how does bird B use Nest-Site-Showing Display to determine the location to place its nest.
  12. Name one bird from the official bird list that might lay its own eggs in B's nest. How does male B and female B respond to parasitic nests?



(A)



(B)

(Text Block #7)

36. (2.00 pts) Referring the two birds A and B shown in Text block #7,

1. Identify bird A.
2. Identify one bird who only lives in Southern U.S. from the official bird list that prey on B.

37. (6.00 pts) Referring the two birds A and B shown in Text block #7,

3. At least how many vocalization variation does a male bird A has? What's the difference between a male bird A's call and a female bird A's call?
- 4 (TB 3). Bird A's supercilium is in which color? What's the common name of supercilium?
5. Briefly describe the annual migration route of bird A.

38. (5.00 pts) Referring the two birds A and B shown in Text block #7,

6. Bird is could be considered as a xerophile. What does this mean?
7. Describe one factor which not caused by the human that contributes to the population decrease of bird A.
8. Describe bird A's daily activity frequency when the temperature of environment is moderate.

39. (3.00 pts) Referring the two birds A and B shown in Text block #7,

(\*\*\* Let's call the bird you identify from question #2 bird B)

9. What's the common local name of bird B in some areas?
10. What's the typical wingspan of bird B?
11. You could find bird B in which Arizona desert?

**40. (6.00 pts)** Referring the two birds A and B shown in Text block #7,

12. Bird B feed on various types of birds. From the official bird list, list four birds who could potentially get targeted by bird B.
13. Describe how could you tell whether bird B is at ease or get threatened.



(A)



(B)

(Text Block #8)

**41. (2.00 pts)** Referring the two birds A and B shown in Text block #8,

1. Identify bird A.
2. Identify bird B.

**42. (7.00 pts)**

Referring the two birds A and B shown in Text block #8,

3. What scientific name was given to bird A when it was first described?
4. Describe some specific places that bird A inhabit under the urban/suburban setting.
5. Beside the birds within bird A's family, please select one bird from the bird list who is closely related to bird A. What types (give two) of data are used by the scientists to determine this close relationship?

**43. (3.00 pts)**

Referring the two birds A and B shown in Text block #8,

6. Bird A is known to feed on one specific genus of lizard. Name this lizard genus.
7. What type of bird is A considering its active period during a day?
8. Bird A is known to have 4 types of calls. Among these 4 call types, which type of call is female-specific?

**44. (7.00 pts)**

Referring the two birds A and B shown in Text block #8,

9. What's bird B's name in Europe or Asia?
10. Describe the difference in appearance between a male bird B and a female bird B.
11. Describe the color variation in bird B population among different geographic regions in the U.S.

**45. (2.00 pts)**

Referring the two birds A and B shown in Text block #8,

12. How long could bird B's flight last continuously?
13. What type of dyadic marriage relationship does bird B adopt?



(A)



(B)

(Text Block #9)

46. (2.00 pts) Referring the two birds A and B shown in Text block #9,

1. Identify bird A.
2. Identify bird B.

47. (6.00 pts) Referring the two birds A and B shown in Text block #9,

3. List two places in which bird A avoids to inhabit.
4. Typically, bird A migrates twice a year. Please indicate the starting month of each of the two migrations.
5. When constructing their nest, why do bird A tend to work synchronously in a large group?

48. (3.00 pts) Referring the two birds A and B shown in Text block #9,

6. What's the typical dimension (length and width) and the height of one bird A's nest? Fill length in the first blank, width in the second and height in the third.

**49. (7.00 pts)**

Referring the two birds A and B shown in Text block #9,

7. From the official bird list, name one bird who often occupies bird A's old nests after A leave their nests. Then describe some factors that influence A's decision on whether using old nest or not.
8. Describe bird B's iris color change as it grows up.
9. What habitat location preference does bird B have during its migration?

**50. (3.00 pts)**

Referring the two birds A and B shown in Text block #9,

10. Which venomous snake could potentially prey on bird B?
11. Name the parasite that is most commonly found in juvenile bird B's body.
12. Name one class of organic chemical compound that negatively affect bird B's health beside common pesticide (DDT, DDE i.e.).

**51. (14.00 pts)**

Birds are known to have several types of feathers. Describe the characteristics of the five feather types listed below in terms of their rachis and barb feature.

1. Down
2. Contour
3. Semiplume
4. Filoplume
5. Bristle
6. Describe the function of filoplume feather and bristle feather.
7. From the official bird list, name one bird who has afterfeathers.