

**UNIVERSITY OF CALCUTTA**  
**CITY COLLEGE CENTER**  
**DEPARTMENT OF ZOOLOGY**  
**Theory Examination 2020 [Old Syllabus (2016)- 1+1+1 system]**  
**ZOOA, Part- II**  
**Paper – 3, Unit-I (Full Marks- 25)**  
**Systematics, Evolutionary Biology & Animal Behaviour**

**Answer any FOUR questions from Question no.1.**

**4x5 = 20**

- 1.a. Describe in brief the concept of alpha and beta diversity. (5)
- b. Write two differences between phenetics and cladistics. (5)
- c. Describe Biological species concept in brief. (5)
- d. State about a few factors responsible for speciation. (5)
- e. Define natural selection with an example. (5)
- f. In reference to Darwin's Finches describe the concept of adaptive radiation. (5)
- g. What is FAP? Give one example. (5)
- h. What is echolocation? Name two echolocating animals. (5)
- i. State two differences between adaptive and learned behaviour. (5)

**Answer any ONE question from the given questions.**

**(1 x 5= 5)**

2. With help of schematic diagrams, describe Sympatric, Allopatric and Parapatric type of speciation. (5)
3. Briefly describe Founder effect and Population bottleneck with atleast one example. (2½ x 2=5)
4. Write in brief the role of Wallace Line in describing the dispersal of animals. (5)
5. Draw and describe the role of Bee-dance in communication among honey bees. (5)
6. Describe the altruism and kinship behaviour in reference to any of the social animals. (5)