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**PG CBCS**  
**M.SC. Semester-II Examination, 2021**  
**ZOOLOGY**  
**PAPER: ZOO 201**

**Full Marks: 40****Time: 2 Hours**

*The figures in the right-hand margin indicate full marks. Candidates are required to give their answers in their own words as far as practicable.*

**Group-201.1**  
**(Marks: 20)**  
**(BIOSYSTEMATICS)**

**Answer TWO questions of the following:****10X2=20**

1. What is taxon? Discuss in brief the stages of taxonomy. What are the primary aims and tasks of a taxonomist? 1+4+5
2. What is evolutionary species concept? What are its key features? What are the limitations of biological species concept? Define polytypic species. 2+3+4+1
3. What is differential systematics? Discuss how biochemical approaches are applied in modern systematics. Explain how immunology is used in molecular systematic studies. 2+4+4
4. Comment on macromolecular and micromolecular taxonomy. Write in brief the role of systematics in wild life management and mineral prospecting. 2+2+6

**Group-201.2**  
**(Marks: 20)**  
**(ECOLOGICAL PRINCIPLES)**

**Answer TWO questions of the following:****10x2=20**

1. Define Gaia hypothesis. Write a short note on cybernetic nature of ecosystem. Comment on resistance and resilience stability of an ecosystem with examples. What is a food web? 2+3+4+1
2. Explain Lotka-Volterra model of prey-predator interaction in the light of mathematical equations and examples. What is fertility schedule? Comment of the key differences between  $r$  and  $k$  selected species. 6+1+3

**(P.T.O.)**

(2)

3. Differentiate between population ecology and habitat ecology with suitable examples. What do mean by ecotone and edge effect? Explain the Leibig's law of tolerance. 3+3+4
4. "*Two species with identical niches cannot co-exist together indefinitely*"- Explain with proper experimental evidence. Discuss the role of keystone species in building ecosystem structure citing suitable example. What is Bet-Hedging strategy of reproduction? 4+4+2

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