# 2020

## ZOOLOGY — HONOURS

**Paper : CC-11**

**(Ecology)**

**Full Marks : 50**

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**1.** Answer ***any fifteen*** questions of the following :

(a) What do you mean by biodiversity hotspots? 2

(b) Define solar flux and solar constant. 1+1

(c) What do you mean by the term 'biotic potential'? 2

(d) Define keystone species with example. 1+1

(e) What is species richness? 2

(f) What do you mean by 'ecesis'? 2

(g) Mention the names and locations of any two tiger reserves in West Bengal. 1+1

(h) What is ecological equivalent? Give one example. 1+1

(i) What is edge effect? 2

(j) What do you mean by 'turnover rate' in ecosystem? 2

(k) What do you mean by closed community? 2

(l) Give two features of k-selected species. 1+1

(m) Write the primary role of decomposers in ecology. 2

(n) What do you mean by functional food web in ecosystem? 2

(o) What do you mean by 'Agenda 21'? 2

(p) Define survivorship curves. 2

(q) What is protocooperation? 2

(r) Write definition of 'Sanctuary' and 'National Park'. 1+1

(s) Write full form of NPP and GPP. 1+1

(t) What do you mean by Climax Community? 2

(u) What is a flagship species? Cite example. 1+1

(v) Define *ex-situ* conservation with suitable example. 1+1

(w) Name two nitrogen fixing bacteria. 1+1

(x) What do you mean by 'potential natality'? 2

(y) What is synecology? 2

**2.** Answer ***any four*** questions of the following :

(a) What is 'ecological pyramid'? Energy flow pyramid is always true pyramid. — Explain. 2+3

(b) (i) What is Lotka–Volterra competition model?

(ii) What are the three basis assumptions of the Lotka–Volterra model? 3+2

(c) Define community. Explain vertical stratification of a community with example. What is pupulation dispersion? 2+2+1

(d) Elucidate the phases of S-shaped population growth form citing an animal population model. 5

(e) Explain why are India considered as one of the megadiversity countries. State the importance of megadiversity countries. 3+2

(f) Draw a Y-shaped energy flow model and describe its components to show flow of energy in ecosystem. 5

(g) Explain the richness and abundance components of Shanon–Weiner species diversity index. 2½+2½

(h) Write short notes on the following (***any two***) : 2½×2

(i) Competitive co-existance

(ii) Gause's principle

(iii) Red databook

(iv) Mutualism

(v) Ecotype.