

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 :

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| (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 <i>ex-situ</i> conservation with suitable example. | 1+1 |

Please Turn Over

- (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 population 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-existence
(ii) Gause's principle
(iii) Red databook
(iv) Mutualism
(v) Ecotype.
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