Short Answer Questions – I

Q. 1. In angiosperms, sieve tubes are associated with specialized cells of parenchyma. Name the cells and briefly write how do they function.

Ans. Companion cells.
Sieve tubes lacks nuclei. Their functions are controlled by the nucleus of companion cells. They help in the translocation of the food material.

Q.2. Mention the importance of trichomes and root [DDE 2017]

Ans. Trichomes are multicellular epidermal hairs on the stem, seeds and fruits. They help in protection, dispersal of seed and fruits and reduction of water loss.
Root hair helps in absorbing water and mineral from soil.

Q.3. What are trichomes and what are their functions?

Ans. Trichomes are hairs which are often found as epidermal outgrowths. The hairs of aerial parts may be unicellular or multicellular, branched or unbranched.

Function (i) They enclose stationary air and protect the plant organ against water loss and sudden fluctuation in atmospheric temperature.

(ii) In some plants, the hairs are glandular which secrete essential oil and provide characteristic odours to the plant. e.g., *Citrus, Ocimum* etc.

Q. 4. Why are xylem and phloem called complex [KVS 2013-14]

Ans. Xylem and phloem are called complex tissues because they contain more than one type of cells, which perform vital functions in plants.

Q. 5. Distinguish between a dicot and a monocot leaf.

Ans.

S. No.	Dicot leaf	Monocot leaf
(i)	It is dorsoventral leaf.	It is isobilateral leaf.
(ii)	Stomata found only on lower epidermis.	Stomata is found both on lower and upper epidermis.
(iii)	Reticulate leaf venation.	Parallel leaf venation.
(iv)	Mesophyll is differentiated into spongy and palisade tissues. E.g., Dicot plants.	Mesophyll not divided into spongy and palisade tissues. E.g., Monocot plants.

Q. 6. What is radial vascular bundles. Where it is found?

Ans. In radian vascular bundles, xylem and phloem are arranged separately in different radii. Radial bundles are found in roots of monocots and dicots.