Q. "Ginkgo biloba is a Synthetic living fossil of Gymnosperms" Is this justified"?

Ans ⇒ Ginkgo biloba of course is a living fossil of family Ginkgoaceae because of its remote past history right from Triassic period of Mesozoic era to the modern period of Coenozoic era and in possessing several archaic features Common to Filicales, Cycadofilicales, Cordaitales & Cycadales.

This Synthesis of characteristics from different existing and extinct groups in one living plant like Gr. biloba evidently makes it a nucleus for the palaeobotanists

(A) Resemblances (or similarities) with Filicales ⇒

(1) Lunate foliage leaves on dwarf shoots are similar to leaflets of Adiantum.
(2) Presence of open dichotomous venation.
(3) In possessing multiciliate spermatozoids.
(4) Presence of a distinct VCC in the archegonial venter &
(5) the tracheids of primary xylem with bordered pits resembling ophioglossum.

(B)

(13) Similarities with Cycadofilicales → (Pteridosperm... 

(1) The abnormal occurrence of microsporangia and ovules of being Ginkgo on the leaves.
(2)
fig - (3.58) Ty)

(2)

(2) Presence of collar at the base of ovule is comparable to the cupule of Lagenostoma (Pteri...
(3) The stem with a leaf gap.
(4) The stem of dwarf short with a massive pith well developed cortex and a scanty vascular cylinder.
(5) The wedge shaped leaves with open dichoto-mous venation may be compared to the wedge shaped pinnules of some pteridosperm
(6) The presence of multiciliate sperms is comparable to those of Lyginodendron.

(c) Similarities with Cycadales ⇒ (1) Both the pith & cortex have the mucilage canals.
(2) Bars of sand in some species of Cycas.
(3) Presence of two distinct kinds of leaves bei scaly & foliage.
(4) The pollen tube is purely haustorial in function
(5) Top shaped multiciliate sperms derived fro the body cell of in both of them.
(6) Presence of distinct nucellar beak and a pollen chamber.
(7) Endosperm is large & massive
(8) The archegonial structure is similar including a large venter & a very big egg nucleus.
(9) Embryogeny is cholostastic.
(10) The embryo being endoscopic has got normal two cotyledons.
(11) The mode of germination in both is hypogeal & the cotyledons remain embeded in the endospermic tissue
fig [illegible].