

[Time: Three Hours]

[Marks: 100]

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.**2. Figures to the right indicate full marks.****3. Draw neat and labelled diagrams wherever necessary.**Q1. A) Choose the **correct option** from the following: 10

- a) _____ is required for guttation in *Nephrolepis*.
i) Ramentum ii) Hydathode iii) Stolon iv) Caudex
- b) In *Nephrolepis* the vascular bundle with xylem in the centre, surrounded by phloem is called _____.
i) Centripetal ii) Amphicribal iii) Centrifugal iv) Leptocentric
- c) Stolons of *Nephrolepis* arise from _____.
i) Root ii) Rhizomatic stem iii) Rachis iv) Leaf
- d) *Nephrolepis* sporangium produces _____ number of haploid kidney shaped spores.
i) 16 ii) 32 iii) 64 iv) Indefinite
- e) The stem of female plant of *Cycas* shows _____ growth.
i) Sympodial ii) Monopodial iii) Centripodial iv) Multipodial
- f) *Cycas* leaves show typical _____ adaptation.
i) Mesophytic ii) Hydrophytic iii) Xerophytic iv) Halophytic
- g) *Cycas* shows _____ type of Pollination.
i) Anemophilous ii) Entomophilous iii) Hydrophilous iv) Chiroptrophilous
- h) _____ stipules are found in *Hibiscus rosa-sinensis*.
i) Adnate ii) Interpetiolar iii) Free lateral iv) Intrapetiolar
- i) Pulvinus leaf base found in _____ leaf.
i) Banana ii) Mango iii) Pea iv) Spider-lily
- j) *Gossypium herbaceum* is commonly known as _____.
i) Lady's finger ii) Cotton plant iii) Century plant iv) Deccan Hemp

Q1. B) Answer the following in **one sentence**: 10

- a) What is Indusium?
b) Write functions of *Nephrolepis* stolon.
c) Write function of transfusion tissue of *Cycas* leaflet.
d) State the method of germination of *Cycas*.
e) Give names of two racemose inflorescence.

- Q2. Answer **any two** from the following: 20
- Give an account of external morphology of *Nephrolepis*.
 - Describe advanced types of steles giving suitable examples.
 - Describe the structure of prothallus and sex organs in *Nephrolepis*.
 - Describe the structure of sorus and sporangium of *Nephrolepis*.
- Q3. Answer **any two** from the following: 20
- Describe T.S. of *Cycas* leaflet. Add a note on its xerophytic adaptations.
 - Explain the process of pollination, fertilization and formation of seeds of *Cycas*.
 - Write a detailed note on microsporophyll of *Cycas*.
 - Give an account of economic importance of gymnosperms.
- Q4. Answer **any two** from the following: 20
- Give classification, distinguishing characters, two plants of economic importance and floral formula of family Amaryllidaceae.
 - Describe various types of compound leaves with examples.
 - What are stipules? Explain its types.
 - Assign the following plants to their respective families giving reasons and give their economic importance:
 - Abelmoschus esculentus*
 - Polianthes tuberosa*
- Q5. Write Short note on (**any four**): 20
- Systematic position of *Nephrolepis*
 - Schematic representation of *Nephrolepis* life-cycle
 - Coralloid roots of *Cycas*
 - V.S of *Cycas* ovule
 - Capitulum inflorescence
 - Distinguishing characters of Malvaceae
