

[3 Hours]

[Total 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 labeled diagrams whenever necessary

Q1.A Choose the correct option from the following and rewrite the sentence. 10

- a. _____ is required for guttation on *Nephrolepis* leaflets.
 - 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 *Rosa indica*.
 - i) Adnate ii) Interpetiolar iii) Free lateral iv) Intrapetiolar
- i. Pulvinus leaf base is found in _____ leaf.
 - i) Banana ii) Mango iii) Pea iv) Spider-lily
- j. *Agave americana* 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? Give its functions.
- b) Define Chemotaxis.
- c) Which are the two main species of *Cycas* found in India?
- d) State the method of Seed germination in *Cycas*.
- e) Define Opposite decussate leaf phyllotaxy.

- Q.2. Answer any two of following: 20**
- a. Give an account of external morphology of *Nephrolepis*.
 - b. Describe primitive types of steles giving suitable examples.
 - c. Describe the structure of prothallus and sex organs in *Nephrolepis*.
 - d. Describe the structure of sporangium of *Nephrolepis*. Add a note on its dehiscence.
- Q.3. Answer any two of the following: 20**
- a. Describe T.S. of *Cycas* leaflet.
 - b. Describe in detail external morphology of *Cycas* plant.
 - c. Describe microsporophyll of *Cycas*.
 - d. Give an account of economic importance of gymnosperms.
- Q.4. Answer any two of the following: 20**
- a. Give classification, distinguishing characters, two plants of economic importance and floral formula of family Malvaceae.
 - b. Explain any five types of Cymose inflorescence giving suitable examples.
 - c. What is palmately compound leaf? Describe its various types.
 - d. Assign the following plants to their respective families giving reasons and give their economic importance:
 - i) *Gossypium hirsutum*
 - ii) *Amaryllis belladonna*
- Q.5. Write short notes on any four: 20**
- a. Hydathode of *Nephrolepis*
 - b. Ramentum
 - c. Systematic position of *Cycas*
 - d. Parts of a typical leaf
 - e. Reticulate Venations & its types
 - f. Distinguishing characters of Amaryllidaceae
