

Q.P. Code : 03080

[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 labeled** diagram whenever necessary.

Q.1 A) Choose the correct option from the following

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- a) The sori are present on _____ of the leaf.
i) margin ii) abaxial surface iii) adaxial surface iv) along the midrib
- b) The _____ are also known as chalk glands
i) Indusium ii) Ramenta iii) Hydathodes iv) Sporangia.
- c) The indusium in *Nephrolepis* is _____.
i) arrow ii) spiral iii) kidney iv) circular
- d) The number of integuments present in *Cycas* ovule is/are _____.
i) one ii) two iii) three iv) four
- e) The coralloid roots of *Cycas* shows symbiotic association with _____.
i) *Anabaena* ii) *Nostoc* iii) *Azotobactor* iv) all of above
- f) Gymnosperms are characterized by _____.
i) winged seeds ii) multiple sperms iii) seeds enclosed in fruits iv) naked seeds.
- g) Pollination in *Cycas* is exclusively by _____.
i) water ii) wind iii) insect iv) man
- h) The swollen leaf base in _____ is called pulvinus leaf base.
i) guava ii) *Datura* iii) mango iv) *Vinca*
- i) The free natural stipules are found in _____.
i) *Rosa species* ii) *Ficus* iii) *Hibiscus* iv) *Pisum*
- j) _____ is a special type of inflorescence found in fig.
i) Spike ii) Hypanthodium iii) Capitulum iv) Corymbs

Q.1 B) Answer the following in **one** sentence.

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- a) Give the types of multicostate reticulate venation.
- b) Name the types of simple racemose inflorescence with elongated peduncle.
- c) Give two gymnosperm plants used as medicine.
- d) Name any two most primitive types of stele.
- e) Mention the position and function of hydathode.

[P.T.O]

Q.2 Answer **any two** from the following:

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- Describe the external morphology of *Nephrolepis*.
- Describe the structure of gametophyte and sex organs in *Nephrolepis*.
- Explain the internal structure of rhizome in *Nephrolepis*.
- Describe the types of protostele with suitable diagrams & examples.

Q.3 Answer **any two** from the following.

- Explain the xerophytic adaptations in *Cycas* with the help of T. S. of pinna.
- Explain the internal morphology of young roots of *Cycas*.
- What is megasporophyll ? Describe the structure of ovule in *Cycas*.
- Write an account of economic importance of gymnosperms with respect to timber & resins.

Q.4 Answer **any two** from the following

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- With the help of diagrams & suitable examples, explain the types of margin & apex in leaf.
- Define inflorescence. Give an account on cymose types of inflorescence.
- Give systematic position, floral formula and general characters of family MALVACEAE.
- Assign the given plants to their respective families giving reasons. Add a note on their economic importance.
 - Polianthus tuberosa*
 - Pancratium caribaeum*.

Q.5 Write short notes (**any four**)

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- Systematic position of *Nephrolepis*
 - Solenostele
 - Male cone of *Cycas*
 - Alternation of generations of *Cycas*.
 - Pinnate type of leaf incision
 - Verticillaster inflorescence.
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