

(4)

(iii) T.S. of rhizome of Nephrolepis

veĵaj esuŝeme kaĵ j eFpeese keaĵ ŝvmeJeme&keas-

Unit-III / FkeaeF-III

6. Describe the following :  $2\frac{1}{2} + 2\frac{1}{2} + 2\frac{1}{2}$

eFveeueeKele keaĵ JeCete kaĵ W:

(i) Leaf-traces in Cycas

meeFkeame kaĵ ueĵka-ŝtreme-

(ii) Leaflet of cycas (internal-structure)

meeFkeame keaĵ ueĵkaues (DeeVleĵ kaĵ j ūvee)

(iii) Coralloid Root of Cycas.

meeFkeame keaĵ keaĵ eueeUe [ pel]

7. Trace the development of female gameto-

phyte in Cycas, starting with megaspore.  $7\frac{1}{2}$

ceĵemheĵ mes ūĵeĵ cVe kaĵ les nĵ meeFkeame cellceoe- iante ŝkaeF ŝ keaĵ eĵkeame >eace keaĵ JeCete kaĵ W

Unit-IV / FkeaeF-IV

8. Describe the following :  $2\frac{1}{2} + 2\frac{1}{2} + 2\frac{1}{2}$

eFveeueeKele keaĵ JeCete kaĵ W:

(i) Male-gametophyte in Pinus.

heeFveme keaĵ vej- iante ŝkaeF ŝ-

(ii) Male Strobilus of Ephedra.

Felĵa [ĕ keaĵ vej- m ŝkaeF veme

(iii) Significance of gymnosperms

eFveeemhece& keaĵ cenIJe-

9. Describe stages of secondary growth in stem

of Pinus upto two years.  $7\frac{1}{2}$

heeFveme keaĵ leves cellvoes Je-eĵ lkeā nesves Jeeuer eĒ leĵlekaĵ- Jeeā keaĵ >eace keaĵ JeCete keaĵ peS-

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(Printed Pages 4)

Roll No. \_\_\_\_\_

S-633

B.Sc. (Part-I) Examination, 2015

BOTANY

Third Paper

(Diversity of Pteridophytes, Gymnosperms & Elementary Palaeobotany)

*Time Allowed : Three Hours ] [ Maximum Marks : 50*

Note : Answer five questions in all. Question No.1 is compulsory. Answer one question from each of the units I, II, III and IV. Attempt all questions in a sequence.

keĵue heeĵle ūemveellkeā Gōĵ oaepeS- ūemve meĵ DeeVleĵe&nw ūel ūkeā FkeaeF & I, II, III Sĵeb IV cellmes Skeā-Skeā ūemve keaĵ Gōĵ oaepeS- meYeer ūemveellkeas >eace mes keaĵ peS-

1. Give brief answers of the following:  $10 \times 2 = 20$   
eFveeueeKele keaĵ Gōĵ meĵhe cellvoe peS :

(i) Name the smallest pteridophyte.

meyemes ūeŝs ŝoĵ [ eĵkaeF ŝ keaĵ veece eĵkeW

(ii) Name the plant-group in which gametophyte & sporophyte, both the generations are independent.

Gme heeĵellkeā meceĵn keaĵ veece eĵkeW eFvee cellvoe cellvoe ŝkaeF ŝ Sĵeb mheĵ eĵkaeF ŝ, oaeveellkeā eĵkeB mĵeVŝe nĕ

P.T.O.

(2)

- (iii) Name the only surviving pteridophyte of Late carboniferous period of Mesozoic-Era-belonging to Arthrophyta.  
 cenepesF kaá-Fje kaá ueš kaáj yeestvepáj me j Úe[ kaá Fkaáueelke  
 peedlele šoj [eáaeFš kaá veece eúeKellpées DeelēpáaeF Še kaá  
 meomúe nŕ
- (iv) Name the pteridophyte which is called Walking-fern.  
 Gme šoj [eáaeFš kaá veece eúeKellpées 'Jeeekháie-heáve&  
 kaánles nŕ
- (v) Name two species of Pinus which are source of Chilgoza.  
 heeFveme kaár Gve oesmhameepe kaá veece eúeKellpées eúeueieepee  
 kaá ceete nŕ
- (vi) Name the tallest gymnosperm.  
 meyemes uecyes epecveemhece& kaá veece eúeKell
- (vii) Mention the most advance order of gymnosperm.  
 epecveemhece& kaá meyemes eúeKaámele 'Dee[š' kaá veece eúeKell
- (viii) Mention the gymnosperm with largest ovule.  
 meyemes yel[e DeesÚeue j Keves Jeeues epecveemhece& kaá veece  
 eúeKell
- (ix) Name the pteridophyte having Amphiphloic Siphonostele.  
 ŠhjáeháueeF kaá meeFháesveemšue j Keves Jeeues šoj [eáaeFš  
 kaá veece eúeKell

(3)

- (x) Name the species of Pinus in which dwarf shoot bears two needles.  
 heeFveme kaár Gme mhameepe kaá veece eúeKellpées eúeueieepee [Jeeekhá-  
 Meš kaáuee oesvee[ue j Kelee nŕ  
 Unit-I / FkaáF-I
2. Describe variations in steles in different species of Lycopodium & Selaginella. 7 1/2  
 ueeFkaáhees[Úece ŠJeb eúeueieepee kaár eúeueiee mhameepe cellmšue  
 kaár eúeueiee kaá JeCete kaáepes-
3. Describe following in brief with the help of suitable diagrams:  
 2 1/2 + 2 1/2 + 2 1/2  
 Geúele eúeueiee kaár menéleee mesreuveeúeKele kaásme[ehle cellúeKeš:  
 (i) Prothallus of Lycopodium.  
 ueeFkaáhees[Úece kaá Úeek eneme-
- (ii) L.S. Sporangium of Rhynia  
 jeFúeúe kaár yepeeCeúeeveer kaá uecye-kaáš-
- (iii) L.S. Strobilus of Selaginella  
 eúeueieepee kaá mšáuee kaár uecye-kaáš-
- Unit-II / FkaáF-II
4. Describe hetero spory with suitable example. 7 1/2  
 Geúele GoenjCe kaár menéleee mes nšj emheej er kaá JeCete kaáj W
5. Describe following in brief : 2 1/2 + 2 1/2 + 2 1/2  
 epecveeúeKele kaá me[ehle cellJeCete kaáj W:  
 (i) Alternation of Generations in Pteridophyta  
 šoj [eáaeFš cellhce[Úeellkaá yeueeJe-
- (ii) Significance of pteridophytes  
 šoj [eáaeFš kaá Deelēkaá cenIJe-