

## BOTANY Paper-A

### (Diversity of Seed Plants and Their Systematic-I)

Time Allowed : 3 Hours

Maximum Marks : 36

Note : Attempt five questions in all, selecting one question from each Unit.

Question No. 1 is compulsory. Draw diagrams where necessary.

1. (A) Multiple Choice Questions. Pick up correct choice.

(i) Stem and seeds of which plant yield a starch called 'sago' ?

(a) Cyca

(b) Pinus

(c) Ephedra

(d) Gnetum

- (ii) Best known species of William Sonia is :  
 (a) W. Indica (b) W. Microps  
 (c) W. Sewardiana (d) None of these
- (iii) Girdle leaf traces are present in :  
 (a) Pinus (b) Cycas  
 (c) Ephedra (d) Taxus
- (iv) Number of needles in Pinus Roxburghii is :  
 (a) One (b) Two  
 (c) Three (d) Four
- (v) Ovule of Ephedra is :  
 (a) Ategmic (b) Unitegmic  
 (c) Bitegmic (d) Tritegmic
- (vi) Nature of endosperm in gymnosperms is :  
 (a) Haploid (b) Diploid  
 (c) Triploid (d) Tetraploid  $6 \times 1 = 6$

(B) Fill in the blanks :

- (i) Oil of Hemlock is obtained from .....
- (ii) Endosperm in gymnosperms develops ..... fertilization.
- (iii) Petiole and Rachis of Lyginopteris are covered with .....
- (iv) Coralloid roots are present in .....
- (v) Pollen grains of Pinus are shed at ..... celled stage.
- (vi) Ephedra is commonly known as .....  $6 \times 1 = 6$

#### UNIT-I

2. Give general characters of gymnosperms.  
 3. Give economic importance of gymnosperms.

6, 6

#### UNIT-II

4. Describe various processes of fossilization.  
 5. Describe external morphology and reproductive organs of Lyginopteris.

6, 6

#### UNIT-III

6. Draw T.S. Cycas rachis (cellular).  
 7. Describe male gametophyte of Cycas.

6, 6

#### UNIT-IV

8. Describe female cone of Pinus.  
 9. Draw T.S. Young stem of Ephedra.

6, 6