	Utech
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Invigilator's Signature :	

# CS/M.Sc(Genetics)/SEM-3/MSGEN(PBT)-304B/2011-12 2011

## PLANT DEVELOPMENTAL GENETICS

Time Allotted:  $1\frac{1}{2}$  Hours Full Marks: 35

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

# GROUP - A

## ( Multiple Choice Type Questions )

1. Choose the correct alternatives for any *five* of the following:

 $5 \times 1 = 5$ 

- i) In Pea plant flowering becomes completely blocked in case of recessive mutation in the gene
  - a) gigas

b) sn

- c) veg l d)
- none of these.
- ii) When the inflorescence meristem forms a terminal flower, the species is termed as
  - a) Determinate
  - b) Indeterminate
  - c) Photoperiod responsive
  - d) None of these.

40794 [ Turn over

#### CS/M.Sc(Genetics)/SEM-3/MSGEN(PBT)-304B/2011-MADS-Box genes contain a special domain called iii) C-domain K-domain b) a) c) B-domain d) None of these. The development of embryos from the cells of nucellus iv) or integument is known as a) Apogamy b) Apospory c) Parthenogenesis d) Adventive embryony. Cadasteral activity is known as the v) competitive interaction between the genes a) competitive interaction between members b) of different classes of genes combinational interactions between members of c) different classes of genes interactions between the members of same gene d) class. is responsible vi) Tapetum for releasing individual microspore by releasing Nuclease b) Callase a) Callose d) None of these. c) Floral homeotic gene in Arabidopsis for carpels is **PISTILLATA** APETALA b) a)

AGAMOUS.

d)

2

c)

**DEFICIENS** 

## CS/M.Sc(Genetics)/SEM-3/MSGEN(PBT)-304



## (Short Answer Type Questions)

Answer any three of the following.



- 2. Why in plants post-embryonic development is more elaborate than embryonic development and how the process of development differs with animal? 1+4
- 3. Explain how Floricaula and Knotted genes help to transmit information within plant cells.
- 4. Explain how environment regulate normal plant development.
- 5. Auxin plays a key role in establishing epical basal axis of the embryo. Explain.
- 6. Discuss meristerm establishment in plants.

#### **GROUP - C**

## (Long Answer Type Questions)

Answer any *one* of the following.

 $1 \times 15 = 15$ 

- 7. What do you mean by MADS-box gene in plants? Explain flower development in the light of recent models explaining the interactions of different homeotic genes. What do you mean by cadasteral function? 3 + 9 + 3
- 8. Discuss different shape mutants during pattern development in plants. Describe the leaf developmental process in plants.

8 + 7