SECTION – E

(Answer **any one**. **Each** question carries a weightage of **4**)

27. With the help of suitable sketches, explain secondary growth in thickness in a dicot stem.

28. Explain the steps involved in C_3 cycle with the help of a schematic diagram.

29. Give a detailed account of the procedure of hybridization. Add a note on intergeneric hybrids. **(1×4=4)**

Reg. No.: .....

Name: .....

IV Semester B.Sc. Degree (CCSS – Regular/Supple./Impr.) Examination, May 2014
Complementary Course in BOTANY
4C04BOT : Plant Physiology, Angiosperm Anatomy and Crop Improvement
(2011 and Earlier admn.)

Time : 3 Hours Total Weightage : 30

SECTION – A

Answer **all** (Questions in bunches of **four**. **Each** bunch carries a weightage of **1**).

1. Choose the correct answer :
   i) Uneven thickening of the walls of collenchyma results from the deposition of
      a) Callus b) Cellulose c) Pectin d) Lignin
   ii) Which tracer element was used by Calvin and Benson to trace the path of carbon in photosynthesis ?
      a) ^{14}C b) ^{12}C c) ^{16}O d) ^{18}O
   iii) Photochemical reaction in photosynthesis is also called
      a) Blackmann reaction b) Hill reaction
      c) Photorespiration d) Carboxylation
   iv) What is the name given to the progeny of a plant resulting from self pollination and self fertilization ?
      a) Hybrid b) Offspring c) Pureline d) Clone

2. State **true** or **false** :
   i) Clones are always genetically similar to the parent plant.
   ii) Cambial ring formed during secondary growth is an example for primary meristem.
   iii) The water coming out of the hydathodes in a leaf is always pure.
   iv) Indole 3 acetic acid is a natural auxin.

3. Fill in the blanks :

   i) The property of plant cells to regenerate an entire plant is known as _____

   ii) Successive rings of cambia are formed during secondary growth in _____

   iii) _____ is an enzyme necessary for nitrogen fixation.

   iv) The form of water available to plant roots is _____ water.

4. Match the following :

	A	B
i	Stress hormone	Ethylene
ii	Ripening hormone	IBA
iii	Flowering hormone	ABA
iv	Rooting hormone	Florigen

5. Answer in **one** word or sentence :

   i) What is the function of lateral meristem ?

   ii) Define diffusion.

   iii) What are trace elements ?

   iv) Name the dead components in xylem. **(5×1=5)**

SECTION – B

Answer **any four**. (**Each** question carries a weightage of **1**).

Differentiate the following :

6. Permeable and semipermeable membrane.

7. Action spectrum and Absorption spectrum.

8. Parenchyma and collenchyma.

9. Emasculation and hybridization.

10. Epiphyte and parasite.

11. Pureline and clone. **(4×1=4)**

SECTION – C

Answer **any five**. (Short answer questions. **Each** question carries a weightage of **1**).

12. What do you know about transfer cells ?

13. What are plasmodesmata ?

14. What is a granum ?

15. When will you call a leaf bilateral ? Which group of plants have this type of leaves ?

16. Carbon is called an essential element. Why ?

17. Why is it necessary to emasculate female parents before hybridization ? When is it done ?

18. Define a simple tissue. Give an example. **(5×1=5)**

SECTION – D

Answer **any six**. (Short essay type questions. **Each** question carries a weightage of **2**).

19. Write a note on water potential.

20. Give an account of the different types of plants based on their requirement for photoperiod ?

21. Describe the vascular bundles in a grass stem.

22. Describe the salient steps in mass selection.

23. Explain the structure of a lenticel. Mention its function.

24. Write a note on stains.

25. Draw the diagram of a hydathode and label all the parts.

26. Schematically represent cyclic photophosphorylation and indicate the sites where ATP is generated. **(6×2=12)**