

ASSIGNMENT BOOKLET

LSE-05

Bachelor's Degree Programme in Science
(B. Sc.)

Elective Course
in
Plant Physiology

ASSIGNMENT

**It is compulsory to submit the assignment before filling
in the examination form.**

(Valid from 1st July, 2011 to 31st March, 2012)

Please Note

- You can take electives (56 to 64 credits) from a minimum of TWO and a maximum of FOUR science disciplines, viz. Physics, Chemistry, Life Sciences and Mathematics.
- You can opt for elective courses worth a MINIMUM OF 8 CREDITS and a MAXIMUM OF 48 CREDITS from any of these four disciplines.
- At least 25% of the total credits that you register for in the elective courses from Life Sciences, Chemistry and Physics disciplines must be from the laboratory courses. For example, if you opt for a total of 64 credits of electives in these 3 disciplines, at least 16 credits should be from lab courses.
- You cannot appear in the Term-End Examination of any course without registering for the course. Otherwise, your result will not be declared and the onus will be on you.



School of Sciences
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Maidan Garhi, New Delhi-110068

(For July, 2011 Cycle)

Dear Student,

We hope you are familiar with the system of evaluation to be followed for the Bachelor's Degree Programme. At this stage you may probably like to re-read the section on assignments for Elective Courses in the Programme Guide that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation which would consist of **one tutor-marked assignment (TMA)** for this course.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully.

- 1) On top of the first page of your TMA answer sheet, please write the details exactly in the following format:

ENROLMENT NO.:

NAME :

ADDRESS :

.....

.....

COURSE CODE:

COURSE TITLE :

ASSIGNMENT NO.

STUDY CENTRE: DATE

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

- 2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) While solving problems, clearly indicate the question number along with the part being solved. Be precise. Write units at each step of your calculations as done in the text because marks will be deducted for such mistakes. Take care of significant digits in your work. Recheck your work before submitting it.
- 6) **This assignment will remain valid for one year from July 1, 2011 to March 31, 2012.** However, you are advised to submit it within **12 weeks** of receiving this booklet to accomplish its purpose as a teaching-tool. Answer sheets received after the due date shall not be accepted.
- 7) **It is compulsory to submit the assignment before filling in the examination form.**

We strongly feel that you should retain a copy of your assignment response to avoid any unforeseen situation and append, if possible, a photocopy of this booklet with your response.

We wish you good luck.

ASSIGNMENT
(Tutor Marked Assignment)
Plant Physiology

Course Code: LSE-05
Assignment Code: LSE-05/TMA/2011-12
Max. Marks: 100

Part -I

1. a) What would happen if the body carbohydrate supply of a *Drosophila* which is about to fly is exhausted? Give two functions each of vitamin B and vitamin K. (1+4)
- b) Draw a well labelled diagram of carbon dioxide transport in human blood. Define oxygen dissociation curve? Explain oxygen dissociation curve with the help of figures. (2+3)
2. a) Define cardiac output and stroke volume. Describe the clotting mechanism in humans and tabulate the blood coagulation factors. (1+4)
- b) Draw a well labelled diagram of the juxtaglomerular apparatus in mammals. Describe the regulation of kidney function by renin-angiotensin mechanism. (2+3)
3. a) Differentiate between voluntary and involuntary muscles. Describe with the help of well labeled diagrams the control of muscle contraction by calcium and regulatory proteins. (2+3)
- b) List the four different stages of estrous cycle of mammals. Draw a well labelled diagram showing the regulation of ovarian and testicular activity. (2+3)
4. a) Define action potential and post synaptic potential in nerves. Describe with the help of a diagram the various parts of motor neurons and give their functional significance. (2+3)
- b) Define hormones and describe how they are stored. Write about the action of hormones in the body. (2+3)
5. Write short notes on the following: (2¹/₂ × 4)
- a) Osmoregulation in terrestrial environment.
- b) Thermal regulation in poikilotherms.
- c) Estrogens.
- d) Membrane potential in nerve cells.

Part -II

6. (i) Define transcription? List different types of transpiration and explain the factors which are responsible for stomatal movements. (1+1+3)
- (ii) Describe how active transport of ions takes place across the plasma membrane with well labelled diagrams. (5)
7. (i) What are C₄ plants? How C₄ cycle is adjunct to the Calvin Cycle? (2)
- (ii) Draw and describe Z -scheme to illustrate the movement of electron in PS I (Photosystem I) & PS II (Photosystem II). (4)
- (iii) Describe Munch Pressure Flow Model & Protosmotic Model for the mechanism of translocation in phloem. (4)
8. (i) Differentiate between Macro and Micronutrients by giving the role of three elements of each group. (5)
- (ii) What are hormones? How auxins are different from cytokinins in terms of their affect on the growth pattern of root and shoot? (5)
9. (i) How would you describe senescence? Write down its different types with brief description and how it can be regulated in plants? (1+2+2)
- (ii) What is stress? Describe different strategies acquired by plants to adapt to stress. (2+3)
10. Write short notes on the following: (2×5)
- (i) Osmotic pressure
- (ii) Red drop
- (iii) Vernalisation
- (iv) Leg haemoglobin
- (v) Cohesion theory of ascent of sap