M.Sc. 3rd Semester Examination, 2011

BOTANY

PAPER—BOT-301

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

Write the answers to questions of each Unit in separate books

UNIT – I

[*Marks* : 20]

Answer **Q. No. 1** and any *one* question from the rest

1. Answer any *five* questions : 2 × 5

(*a*) Name one photosynthetic inhibitor.

(*b*) What do you mean by C_2 cycle ?

(*c*) Name two synthetic auxin.

(*d*) What is meant by free energy ?

(*e*) What are different types of seed dormancy ?

(*f*) What are effective and ineffective nodule ?

(*g*) Name one potent photosynthetic inhibitor.

(*h*) Differentiate fluorescence and phosphorecence.

2. (*a*) What is leg-haemoglobin ? Write down the structure of nitrogenase.

(*b*) Write ABC model of flowering on the basis of photoperiodic response.

(*c*) Write down the chemical nature of phytochrome. How it regulates the flowering mechanism ?

(1 + 2) + 3 + (2 + 2)

3. (*a*) Define phytohormone mentioning the present day hormone concept.

(*b*) Write down the physiological roles and bioassay of auxins.

(*c*) Name one volatile phytohormone.

(1 + 2) + (3 + 3) + 1

UNIT – II

[*Marks* : 20]

Answer **Q. No. 4** and any *one* from the rest

4. Answer any *five* questions : 2 × 5

(*a*) What is epimerism ? Give an example.

(*b*) Explain the Henderson-Hasselbalch equation.

(*c*) Name any two physiological buffer.

(*d*) What is α-oxidation ?

(*e*) What is rancidity ?

(*f*) Draw the structure of deoxyribose sugar.

(*g*) What are PUFA and MUFA ?

(*h*) Mention the simplest amino acid and write down its chemical structure.

5. (*a*) Write short notes on (any *three*) :

(*i*) Compititive inhibition

(*ii*) Non-compititive inhibition

(*iii*) Uncompititive inhibition

(*iv*) Ramachandran plot.

(*b*) Write down different steps of purification of a seed-protein. $(3 \times 2) + 4$

6. (*a*) How colonimeter differs from a spectrophotometer ?

(*b*) Write down different parts of a HPLC system.

(*c*) What is the function of TEMED during gel electrophoresis ?

(*d*) Name two non-protein amino acid. $3 + 5 + 1 + 1$