3 TDC (Special) BOT M 3

2016

(July)

BOTANY

(Major)

Paper : 30300

(Biological Chemistry, Plant Physiology and Modern Laboratory Techniques)

Full Marks : 81

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Fill in the blanks : 1×8=8

   (a) Malic dehydrogenase removes *H*-atom from _____ acid.

   (b) The stroma of chloroplast is the site of _____ reactions.

   (c) The breakdown of nitrates to free nitrogen is called _____.

Contd.

(d) _____ soil is physiologically dry.

(e) _____ in RNA replaces thymine in DNA.

(f) Growth is an irreversible process in mass, _____ and volume.

(g) _____ cause flowering in vernalized plants.

(h) _____ is used to study the distribution of radioactivity in materials.

2. Write short notes on : 3+3+3+3+4=16

(a) Importance of *pH* in soil

(b) Conjugated proteins

(c) Monosaccharides

(d) Seismonasty

(e) Growth inhibitors

3. (a) Give an account on the role of nucleic acid in protein synthesis. 10

Or

What is adenosine triphosphate ? Describe how oxidative phosphorylation occur in Krebs cycle. 3+7=10

(b) Write briefly on : ***(any two)*** 4×2=8

(i) Colloidal nature of protoplasm

(ii) Ion exchange in absorption

(iii) Isoenzymes

(iv) Ascorbic acid.

4. Describe the light phase in photosynthesis. Mention the differences between cyclic and noncyclic photophosphorylation. 8+4=12

Or

What are phytohormones ? Give the physiological role of auxin in plants. 4+8=12

5. Write explanatory notes on : ***(any three)*** 5×3=15

(a) Significance of cell to cell osmosis

(b) Importance of iron, zinc and molybdenum in plant nutrition

(c) Isotopes as tracer element

(d) Alcoholic fermentation

(e) Photorespiration.

6. Define chromatography. Write about paper chromatography and its differences with thin-layered chromatography. 2+7+3=12

Or

Write short notes on : ***(any two)*** 6×2=12

(a) Spectrophotometry

(b) Phase contrast microscope

(c) Autoradiography