2016

M.Sc.

2nd Semester Examination

BOTANY

PAPER—BOT-204

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer *all* questions.

1. Answer any *ten* of the following : 10×1

(a) Why EDTA is required in plant tissue culture medium ?

(b) Name the molecular techniques used in VNTR analysis.

(c) Name the enzyme required for PCR reaction.

(d) How do minor genes play role in quantitative inheritance ?

(e) What is xylogenesis in callus culture ?

(f) What is synthetic variety ?

(g) What does it mean by replicative transposition ?

(h) Give full form of GISH.

(i) Name the intensely transcribing heterochromatic part of a chromosome.

(j) What is disruptive selection ?

(k) What is inbreeding depression ?

(l) Define genetic drift.

(m) What is a recalcitrant callus ?

(n) Name a stain used in fluorescent banding.

(o) Give an example of infections, heredity.

2. Write notes on any *two* of the following : 2×5

(a) Transposable elements ;

(b) Quantitative inheritance ;

(c) Hardy Weinberg genetic equilibrium ; and

(d) Callus culture.

3. Answer any *two* of the following : 2×10

(a) Define Karyotype. Briefly state the process of karyotyping with the aid of different techniques. Mention the utilities of Karyotype. 2+5+3

(b) Describe the different steps of DNA replication process in eukaryotes. Name the key euzymes involved in this process. Why Okazaki fragonents are formed ? 6+2+2

(c) Name any three methods of DNA profiling used for determining individual identity. What are multilocus and single locus probes ? State the major steps of DNA finger printing. 3+2+5

(d) What are the macro nutrients and micro nutrients of a plant tissue culture medium ? Mention the usefulness of any two elements from each of two types. Briefly state the roles of different types of hormones in influencing different developmental process in callus culture. 2+3+5