

2015

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 : 1×10

- (a) How does epistatic phenomenon defy Mendelism ?
- (b) What is the point of difference between Broad Sense and Narrow Sense heritability ?

(Turn Over)

- (c) Give an example of infectious heredity.
- (d) Show the change in Hardy-Weinberg equation when a new allele appears in the population having only two alleles earlier.
- (e) How both structurally and functionally telomerase is an unique enzyme ?
- (f) What are foot prints of transposon ?
- (g) What is polylinker ?
- (h) Enlist two ideal features of a vector used in genetic engineering.
- (i) What is the basis of distinction in considering an element as macronutrient or micronutrient ?
- (j) What is the significance of border repeats of a mobile genetic element ?
- (k) What is directive selection ?
- (l) Define inbreeding depression.
- (m) What is multilocus probe ?

(n) Give full form of AFLP.

(o) What are retroposons ?

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

(a) Ultrastructure of telomere – unique to form non-sticky free end.

(b) IS element.

(c) Chromosome walking and jumping.

(d) Blotting techniques.

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

(a) Illustrate the events in cell cycles mentioning the roles of cyclins and cdks. Name two chemicals used in metaphase arrest. Write significances of cell cycle in cell division. 7+1+2

(b) Enlist different types of extranuclear inheritance. Illustrate the characteristic features of maternal inheritance with the aid of suitable examples. How is it distinguished from 'maternal influence'?

2+6+2

(c) What is 'Plant introduction'? Discuss on the different modes of plant introduction. Why is it considered a part of plant breeding? Write two demerits of plant introduction. 1+5+2+2

(d) Define dedifferentiation and redifferentiation. What is meant by organogenesis in plant tissue culture? Outline the procedure of micropropagation. Mention its unique advantage. 2+1+6+1
