**Total No. of Pages: 2 Program: MAGP 1102**

 **Even Semester Examination: MAR-APR 2021**

**Principles of Cytogenetics**

**Full Marks: 50 Time: 3 Hrs.**

***The figure in the right hand margin indicates marks.***

**PART – A**

Answer any **ELEVEN**:

1. What is C Value paradox? Give example.
2. Define C Value?
3. Define Haploid?
4. Define Allopolyploid?
5. Define Split Gene?
6. Define Duplication?
7. Define Translocations?
8. What is meant by translocation?
9. What are inversions?
10. Define overlapping inversion?.
11. Define cryptic structural hybridity?
12. What are secondary triticales?
13. Dihaploids Vs Doubled haploids
14. What is meant by analytical breeding?
15. Define semigamy?
16. Define parthenocarpy?
17. What is compensating nullisomic-tetrasomic?
18. What is trisomic?
19. Define tetrasomic.
20. What is monosomic?

**PART – B**

1. Differentiate between paracentric Vs Pericentric inversions?.
2. What is crossing over? List theories of crossing and explain breakage and reunion theory of crossing over?
3. Discuss the mechanism of holliday model of recombination?
4. Explain alien addition and substitution line with a flow chart?
5. Explain permanent structural hybridity in Oenothera? .
6. What are the types of chromosome banding and discuss any two of them?
7. Discuss the mechanism of crossing over?
8. What are the types of special chromosomes and discuss any two of them?
9. Explain alien gene transfer in groundnut?
10. Explain the various uses of haploids and dihaploids in a nutshell?
11. Explain various methods of production of haploids and doubled haploids?
12. Explain chromosome engineering with a suitable example?
13. Write short notes on any **Three**:- **]**

a) Significance of Meiosis

b) r-Xl deficiency in maize

c) Yeast artificial chromosmes

d) Triticales

e) Mitosis Vs Meiosis

f) Bulbosum method

g) Segmental allopolyploidy in wheat

h) Uses of Inversions