City College , Kolkata

B.Sc 3rd year BOTA paper VIII (Under CU Syllabus) ,2020

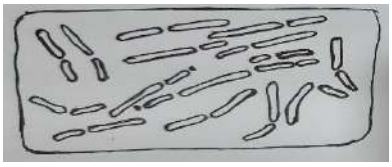
Time 2 hrs Full marks :100

Part A marks : 40

Class Attendance – 10 Class performance – 10 Practical note books – 20 [cytology – 5 , Biometry – 5 , Microbiology – 5 , Plant Pathology– 5]

Part B marks : 60

1. A. Write down the material and procedure (in flow chart) for making a scattered karyotype plate of chromosomes.



What is the somatic chromosome number in this plate (2n= ?) 4+1+5

Comment on karyotype after describing the chromosome morphology as are found in the plate.

B. Write down the requirements to make a slide of meiosis. Mention the technique applied(in one or few words).

Draw a metaphase – I plate in P.M.C and comment on it to identify the phase. 2+1+4

C. In a seed sample in F2 generation – Dark brown (43) and light brown(37) seeds are segregated in 9:7 ratio.

What is the degrees of freedom here ? What kind of ratio is this monohybrid or dihybrid?

Comment on the 9:7 ratio with checker board.

Or

In a seed sample in F2 generation seeds are segregated in 15:1 ratio – dark brown (63) and light brown (5).

Is this Mendelian or non Mendelian ratio? What is the degrees of freedom here?

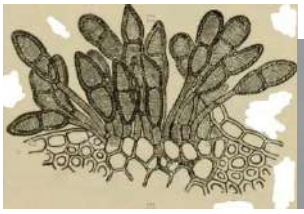
Comment on the 15:1 ratio with checker board. 2+5

2. A. Write down the procedure of gram staining. Comment on the gram nature and morphology of *Bacillus* sp.

5+4

B. Write down the requirements and procedure of inoculation of pathogen in a fruit. 3+4

3. Identify the following figure and plates with reasons. 4x5



A . B. C. D.