

2020

MICROBIOLOGY — HONOURS — PRACTICAL

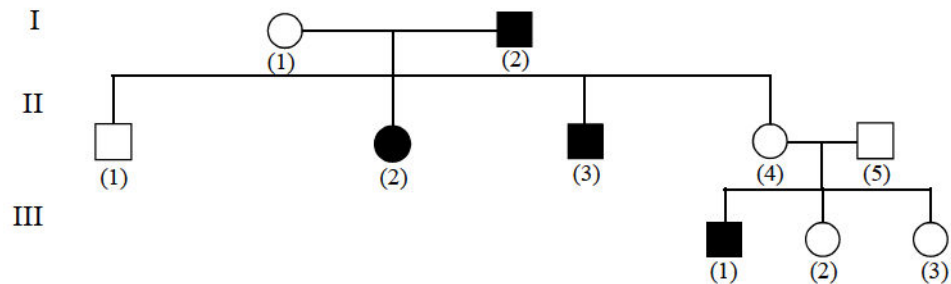
Paper : DSE-B-1P

Full Marks : 30

The figures in the margin indicate full marks.

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

1. (a) What is pedigree analysis?
 (b) Study the given pedigree chart and answer the following questions :



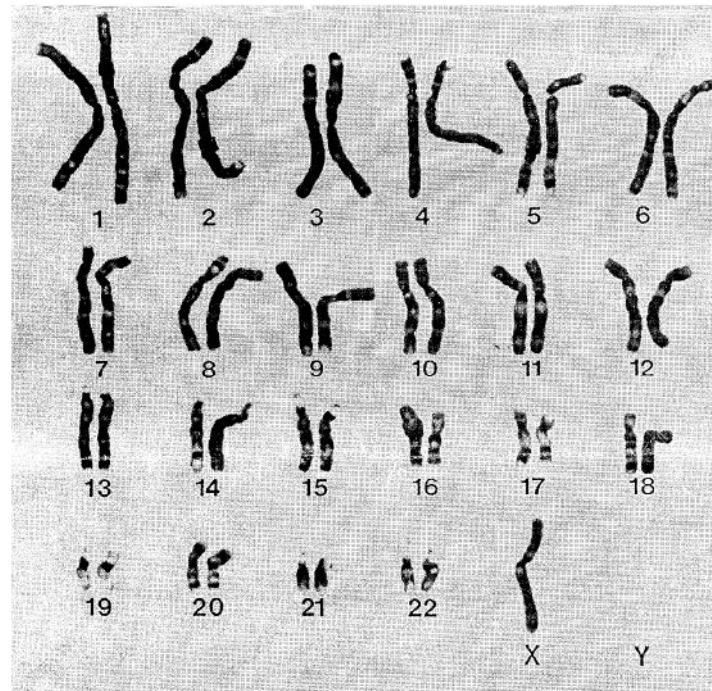
- (i) Comment on the inheritance pattern of the given pedigree.
 (ii) Give the genotype of the parents in Generation I and their 3rd and 4th child in Generation II. 2+3
2. (a) Taking the example of A, B, O blood types of humans explain the phenomena of multiple alleles and codominance.
 (b) In *Antirrhinum* RR is phenotypically red, rr is white and Rr is pink. Mention the phenotypes and genotypes in F₁ generation of the following crosses :
 (i) RR × Rr (ii) RR × rr 3+2
3. (a) What is a Karyotype?
 (b) From the picture of Karyotype provided answer the following questions :
 (i) How many chromosome pairs are present?

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(ii) What is the sex of the organism?

(iii) Does the Karyotype suggest any abnormal condition of the organism?

2+3



4. On crossing a grey bodied scarlet eyed *Drosophila* with a black bodied red eyed one produced all grey bodied red eyed flies in F_1 generation on crossing the F_1 flies the F_2 generation gave the following phenotypes.

Grey bodied red eyed : 362

Black bodied red eyed : 128

Grey bodied scarlet eyed : 122

Black bodied scarlet eyed : 44

Do the data have a goodness of fit with the Mendelian's Second Law of dihybrid cross?

5

$[\chi^2_{.001(3)} = 16.27]$

5. Viva voce and Laboratory Notebook.

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